

JOURNAL OF THE MYANMAR ACADEMY OF ARTS AND SCIENCE



Educational Psychology

Vol. XIX, No.9C, March, 2023

Myanmar Academy of Arts and Science

Journal of the Myanmar Academy of Arts and Science

Vol. XIX, No.9C

Contents

Education Psychology

<u>Sr. No.</u>	<u>Title</u>	<u>Page</u>
1	Ei Mon Khine , A Study on Test Anxiety among Grade Ten Students	1
2	Tsai MinnWai , Determinants of Risky Sexual Behaviours among High School Students in Myanmar	11
3	Myint Sann , An Investigation into Emotional Autonomy of Adolescents	23
4	Aye Chan Myat Phyoe , A Study on Middle School Students' Motivation Towards Science Learning	33
5	Mai MyoMyo San , A Preliminary Study of Social and Cognitive Factors on Secondary School Students' English Language	45
6	Ei Mon Phyoe , An Analytical Study of Identity Styles and Psychological Well-Being of First Year Students	55
7	Lei Yin Win , Personality Styles of Grade 10 Students and Its Correlation with their Learning Gains	63
8	May Tharaphi Aung , Teachers' Attitudes towards Grade Three Curriculum Development	73
9	Ei Cho Phyoe , An Investigation Into Learning Styles of Grade Nine Students	83
10	Lwin Moe Aung , Family Functioning and Adolescent Delinquency of Students in Universities from Monywa District	93
11	Htet HtetWai , A Study on Need for Cognition and Curiosity of High School Students	103
12	Ei Yadanar Oo , The Mediation Effect of Self-Talk on the Relation Between Parental Autonomy Support and Emotion Regulation of Undergraduate Students from Sagaing University of Education	117
13	Ei Thandar Tun , A Study on Emotional Intelligence and Aggression of Adolescents	129
14	Myo Su Mon Kyaw , Positive Peer Pressure and Responsibility Behaviour of Adolescents	143
15	Su Myo Thant , Social Skills and Social Interaction Anxiety of High School Students	157
16	Ei Thinzar Kyaw , Automatic Negative Thoughts, Unconditional Self-acceptance and Anxiety of University Students in Sagaing Township	171
17	Khin Khin Khant , Self-Esteem, Narcissism and Aggression of University Students in Sagaing Township	183
18	Hnin Wai Linn , An Intervention Based Study on Reducing Public Speaking Anxiety of High School Students	195

<u>Sr. No.</u>	<u>Title</u>	<u>Page</u>
19	Pyae Wai Shan , The Moderation Effect of Fear of Missing Out on the Relation between Mindfulness and Nomophobia of Undergraduate Students from Sagaing University of Education	205
20	Sai Ba Nyan , Social Intelligence and Adjustment of High School Students	217
21	Htun Naing Oo , Personality Traits and Interpersonal Communication Skills of Grade 9 Students in Kawlin Township	229
22	Kyaw Soe Kyi , Attachment Styles and Depression of Grade 11 Students in NyaungOo Township	243
23	Kay Thi Myint Aung , A Study on Foreign Language Anxiety and English Reading Comprehension Skills of Middle School Students	255
24	Yin Mon Thant , Metacognitive Awareness and Physics Achievement of Grade 10 Students in Minbu Township	267
25	Su Mon Lwin , Visual Perception Ability and Reading Achievement of Grade 2 Students	279
26	Htet Wut Yee , Spiritual Intelligence and Optimism of Teachers from Yamethin District	291
27	Aye Mya Nandar Kyi , Sense of Classroom Community and Adjustment of University Students	301
28	Yin Min Htet , Examination Malpractice and Test Anxiety of High School Students from Mandalay Region and Shan State	315
29	Hnin ThaZin Win , Error Patterns Analysis in High School Physics Learning	327
30	Htay Htay Win , Multiple Intelligences and Interpersonal Problem Solving of Grade 9 Students from Patheingyi Township	339
31	Lei Yin Win , Locus of Control and Job Satisfaction of Teacher Educators from Education Colleges	349
32	Hnin Ei Zin , Family Environment and Hardiness of Students from Education Colleges in Upper Myanmar	361
33	Aye Thanda Tun , Hardiness, Social Support and Burnout of Teachers from Momeik Township	373
34	Khin Hnin Nwe , Using Error Pattern Analysis for Diagnostic Assessment in Primary Mathematics Learning	389
35	Myo Ko Aung , Perceived Social Support and Academic Engagement of High School Students in Pyinmana Township	401
36	KhinKhin Thant , An Investigation into Factors Influencing Dropout Students in Meikhtila Township	415
37	Myint Myint Po , Children's Social Skills Development through Cooperative Team Learning	431

<u>Sr. No.</u>	<u>Title</u>	<u>Page</u>
38	Thae Su Mo , An Investigation into Parental Responsiveness, Parental Control and Strengths of Justice of High School Students from Monywa Township	439
39	Zaw Than Win , An Investigation into Numerical Reasoning Ability of Middle School Students in Sintgu Township	449
40	SoePaingHtoo , Perceptual Reasoning Ability and Problem Solving Skill of Middle School Students in Shwebo Township	461
41	Khin Swe Latt , A Study on Visual Perceptual Skill and Mathematics Achievement of Grade 6 Students in Ngazun Township	473
42	Htet Htet Htun , The Behavioral Autonomy of Upper Primary School Students in Aungmyaytharzan Township	483
43	Thida Lwin , The Relationship between Behavioral Problems and Social Competence among Children: Ameta-Analysis	493
44	Honey KoKo , A Study on Conflict Handling Styles and Organizational Commitment of Teachers in Myanmar	503
45	Khaing Nyein Thant , Factors Influencing Internet Addiction of University Students in Myanmar	513
46	Aye Aye San , A Study on Social Emotional Competence and School Adjustment of Adolescents	527
47	Kyaw Min Lwin , A Study on Self-Esteem and Social Relations of Grade 9 Students in Monywa Township	541
48	Kyu Kyu Hmwe , Contingent Self-Worth and Inferiority Complex of Education College Students in Mandalay Region	555

A STUDY ON TEST ANXIETY AMONG GRADE TEN STUDENTS

Ei Mon Khine¹, Aye Chan Myat Phyo²

Abstract

The main purpose of this study is to investigate the test anxiety of Grade Ten students. In this study, quantitative research design and descriptive survey method were used. To support the purpose of the study, 35 items of Test Anxiety Inventory was used as research instrument. Eight basic education high schools were purposefully selected for this study. A total of 399 Grade Ten students participated in this study. By using simple random sampling technique, 399 students were selected from the four districts in Yangon. As the research instrument, Test Anxiety Inventory (TAI) Questionnaire developed by Spielberger (1980), (cited in Khaing Thiri Mon, 2015), was used in this research. The TAI comprised of five sub-scales: Worry, Emotion, Test Irrelevant Thinking, Students' Expectation and Students' Reflection. Each sub-scale of instrument was coded by using a four-point Likert scale, with 1= strongly disagree to 4= strongly agree. The result of this study revealed that significant differences existed in Grade Ten students' test anxiety with respect to gender, school and district. However, there was no difference in test anxiety with respect to specialized combination. It was found that female students have higher test anxiety than male students. Most of the female students have more distress concerning tests than male students. The results indicate that significant differences are found in the total test anxiety scores among different schools. It could be said that students' test anxiety can vary according to the different school settings.

Keywords: Test Anxiety, Worry, Emotionality, Grade Ten Students

Introduction

Evaluation is a crucial part of every educational program. In fact, evaluation and its most frequently used representation, testing, is an inseparable part of any educational program. There are two important aspects: school and examination that students can be inevitable in today's world. The education system in Myanmar is highly exam-oriented. This makes students develop test anxiety due to the seriousness with which the examination is regarded and perceived.

In today's competitive academic environment, students may experience feelings of anxiety over examinations at all levels of education. When individuals are pressurized to make high scores in a test, their anxiety is bound to increase (Deffenbacher, 1978). Goldman (1971) found that individuals with high levels of anxiety tend to do worse on cognitive tests. Due in part to an increase in educational accountability and the frequency of standardized tests, there has been an increased prevalence of test anxiety among students (Putwain, 2008).

Test anxiety can affect any student, regardless of gender, ethnicity, socio-economic status, grade level, and intellectual capacity. It can be generalized that anxiety has negative effects on students' self-esteem. The students can learn from their own experiences about the stimuli which cause anxiety. But these stimuli vary from person to person as no two persons have same ideas and thoughts. Many students have the ability to do well on exams, but perform poorly because of their debilitating levels of anxiety. Test anxiety increases from childhood to adolescence (McDonald, 2001) although there has been a rise in test anxiety interventions for youth.

Test anxiety is normal phenomenon for the students facing examination. It helps the students to prepare for their mind set to face exam related stress. The current study has found in the literature that the anxiety is an obvious element in human being's life that affect their performance and effectiveness in different situations, an average level of anxiety is useful in keeping people hardworking and responsible for their work and also helpful for people to be more workable for their affluent life.

¹ Senior Assistant Teacher, B.E.H.S (1) Kyee Myin Daing Township, Yangon Region

² Assistant Lecturer, Educational Psychology Department, Yangon University of Education

The Purpose of the Study

The main purpose of the study is to investigate the test anxiety among Grade Ten students. The specific objectives are as follows.

- To examine the difference in students' test anxiety by gender.
- To find out the difference in students' test anxiety by specialized combination.
- To examine the difference in students' test anxiety by school.
- To investigate the difference in students' test anxiety by district.

Definition of Key Term

Test Anxiety is defined as a diffuse feeling of worry and discomfort accompanied by negative thoughts in relation to a testing situation (Spielberger, Gcnzalez, Taylor, Ancon, Algaze, Ross, & Westberry, 1980).

Review of Related Literature

Test Anxiety

Students are frequently confronted with tests, examinations, and evaluations during their academic life. Examination results may provide academic recognition, but they are also threatening and induce anxiety and worry in each school discipline (Putwain et al., 2010). The term test anxiety is now widely recognized and familiar to many in the lay public. During anxiety, the individual feels alarmed and like something bad is going to happen (Taşgın, Tekin & Altınok, 2007). Adolescence is one of the periods during which anxiety is observed the most (Günay, Öncel, Erdoğan, Güneri, Tendoğan & Uğur, 2008). Over anxiousness among students who are preparing for their exam is led by their own thoughts concerning passing or failing in their exam.

Examinations leading to a grade or a degree at the end of the learning process represent a significant source of worry and anxiety for students in general, due to threats to esteem/position, negative evaluations by others, fear of failure, or parental pressure (Putwain et al., 2010; Zeidner, 2007).

Test anxiety is - the hyper-arousal condition that results in physiological, emotional and intellectual changes that prevent the effective use of the previously learned information, while taking an examination. Wine (1980) concluded that individuals with high test anxiety worry about not doing as well as they would like to do on a test. Individuals with low test anxiety do not worry and are able to concentrate on their test performance (Wine, 1980; Drummond, 1996). Therefore, they are likely to perform better than those with high levels of anxiety. Low and moderate levels of anxiety have been associated with significantly high-test scores (Cassady & Johnson, 2002).

Test anxiety affects people in every field of life, whenever people of all ages have to be evaluated, assessed, and graded with regard to their abilities, achievements, or interests. Testing and being tested, whatever the level of education, is a natural source of concern. Sources of test anxiety are parents' teachers' higher success expectations. Besides, parents' and teachers' motivational words cause the students to worry more about not being the anticipated effect in their life.

Test anxiety maintains students' alertness that they are able to change examination answers from incorrect to correct. Test anxiety is the emotional reaction when students' need to cope with examination. However, it varies among students and depends on their preparedness and certainty to facing the exam.

Test anxiety can also be termed as anticipatory anxiety, examination anxiety that occurs in situation like facing exam. Indeed, there is a stirred-up state in physiological level causing

over-arousal, tension and somatic symptoms and psychological level causing poor attention, deterioration in perception and thought fluency this can lead to worry, dread, fear of failure, and catastrophic experiences before or during test situations among the students. At the same time normal anxiety is helpful in preparing the students to face the exam. In testing situations, test anxiety produces two types of responses: (1) **non-task relevant responses** (feelings of inadequacy and wanting to leave the situation) and (2) **task-relevant responses** that allow completion of the task and reduce anxiety.

The highlighted symptoms lead us to the three factors model of test anxiety as postulated by Wren and Benson (2004) which comprise cognitive, behavioral and physiological components. The cognitive dimension includes perturbing and irrelevant test thoughts such as: causing sorrow to parents due to poor or unfavorable comparison of the testee performance with that of his peers or classmates. The behavioral component which is also known as off task behaviors essentially focuses on nervous habits which includes: auto manipulation such as playing with hair or biting pencil or pen during assessment.

Test anxiety, according to Spielberger (1979), consists of two primary components: worry and emotionality. Worry includes personal thoughts regarding poor test performance and ultimate course or academic failure. Emotionality includes physiological components such as fear, panic, tension, and increased heart and respiration rates. Both worry and emotionality combine to potentially interfere with test performance in many situations. Sarason (1984) divided test anxiety into the following four dimensions: worry, tension, test-irrelevant thinking, and bodily symptoms.

It is composed of "worry" which is a cognitive anxiety related with performance and "emotionality", the arousal of autonomic nervous system in evaluative situations (Morris & Liebert, 1970). Test anxiety is important in education because it helps student prepare for exams.

Method

The main purpose of the study is to investigate a study on test anxiety of Grade Ten students from selected schools in four districts of Yangon. In this chapter, sampling, research design and method, instrumentation, and data collection procedures are identified.

Sample of the Study

Participants in this study were selected from grade ten students from eight high schools located in the four districts of Yangon Region by using sample random sampling technique in order to collect the data. The students during the academic year 2019-2020 were selected from the four districts of Yangon Region. The total number of participants was 399. Out of them, 199 were male students and the rest were female students. This selected sample is shown in the following table.

Table 1 Numbers of Students Participated in the Study

District	School	Male	Female	Total
East	School (1)	24	25	49
	School (2)	25	25	50
West	School (3)	25	25	50
	School (4)	25	25	50
South	School (5)	25	25	50
	School (6)	25	25	50
North	School (7)	25	25	50
	School (8)	25	25	50
Total		199	200	399

Research Design and Method

In this study, descriptive research design and quantitative survey method were used.

Instrumentation

In order to find out test anxiety of Grade Ten students, Test Anxiety Inventory (TAI) developed by Spielberger (1980) was used. It comprised 35 items assessing five variables such as worry, emotion, test irrelevant thinking, students' expectation and students' reflection. Each subscale of the instrument was coded by using a four-point Likert scale, with 1 = "strongly disagree" to 4 = "strongly agree".

Data Analysis and Results

The main aim of the study was to investigate the Grade Ten students' test anxiety in selected schools of Yangon Region. The collected data were analyzed by using SPSS to get the results. Independent sample *t* test and ANOVA were used to examine whether there were significant differences in test anxiety of Grade Ten students by gender, by specialized combination, by school and by district. Thus, results and findings were discussed in the following sections.

Findings of Grade Ten Students' Test Anxiety

To investigate Grade Ten students' test anxiety, descriptive statistics was carried out and the results were shown in Table 2.

Table 2 Descriptive Statistics for Students' Test Anxiety of Grade Ten Students

Sub-scales of Test Anxiety	N	Minimum	Maximum	Mean	SD
Worry	399	7	27	18.83	3.276
Emotion	399	7	28	16.88	3.684
Test Irrelevant Thinking	399	7	28	17.12	3.811
Students' Expectation	399	11	25	17.55	2.213
Students' Reflection	399	8	25	17.24	2.932
Total	399	50	118	87.62	11.364

Note: SD= Standard Deviation

According to the results shown in Table 2, the mean score of the students for the subscale worry of test anxiety was the highest and mean score of emotion subscale was the lowest. So, it could be said that participants from the selected schools were high in worry deriving from one's circumstances, mood, or relationships with others. Visual presentation was shown in Figure 1.

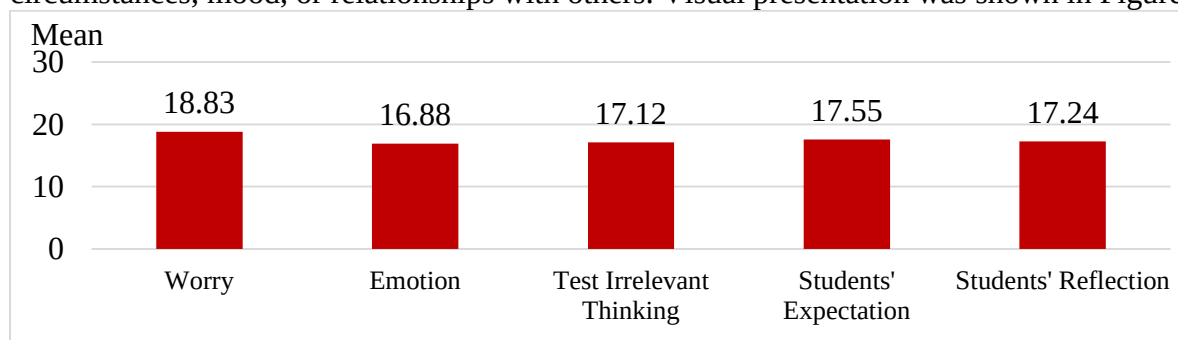


Figure 1 Mean Comparisons for Subscales of Test Anxiety of Grade Ten Students

Comparison of Test Anxiety for Grade Ten Students by Gender

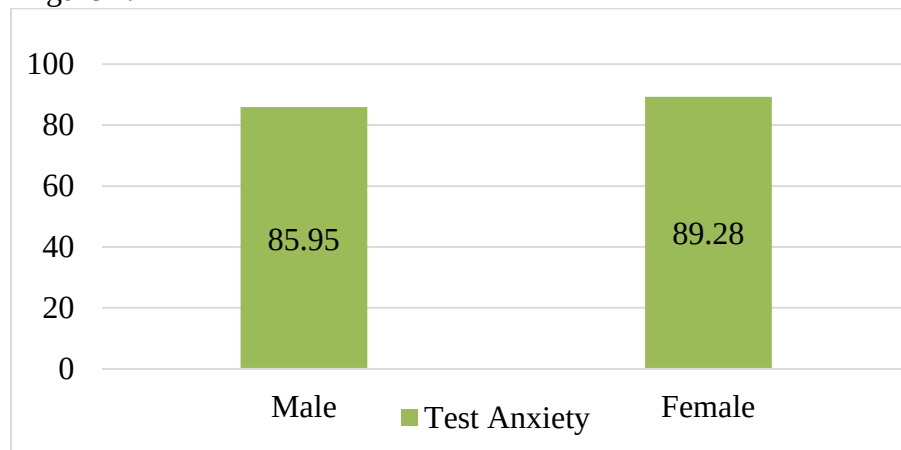
To find out the differences in students' test anxiety with regard to gender, descriptive statistics and *t* test were applied. The mean values of male and female students for test anxiety were reported in Table 3.

Table 3 Results of Independent Sample *t*-test for Grade Ten Students' Test Anxiety by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
Test Anxiety	Male	199	85.95	11.092	-2.951**	.003
	Female	200	89.28	11.416		

Note: ** $p < 0.01$

To know more clearly, the independent sample *t*-test was conducted. According to the result, there was significant difference in test anxiety of Grade Ten students by gender at 0.01 level. Thus, female students had higher test anxiety than males. Visual presentation of the results was shown in Figure 2.

**Figure 2 Mean Comparisons of Grade Ten Students' Test Anxiety by Gender**

Comparison of Test Anxiety of Grade Ten Students by Specialized Combination

To find out the differences in students' test anxiety with regard to specialized combination, descriptive statistics and *t* test were applied. The mean values of students' test anxiety by specialized combination (science, art and science) were reported in Table 4.

Table 4 Results of Independent Sample *t*-test for Grade Ten Students' Test Anxiety by Specialized Combination

Variable	Specialized Combination	N	Mean	SD	<i>t</i>	<i>p</i>
Test Anxiety	Science	317	87.27	11.259	-1.211	.227
	Science and Art	82	88.98	11.734		

To explore whether the mean differences were significant or not, independent *t*-test was calculated. The result of *t*-test showed that there were no significant differences in students' test anxiety by specialized combination. Thus, it can be said that Grade Ten students' test anxiety was not influenced by specialized combination. Visual presentation of the results was shown in Figure 3.

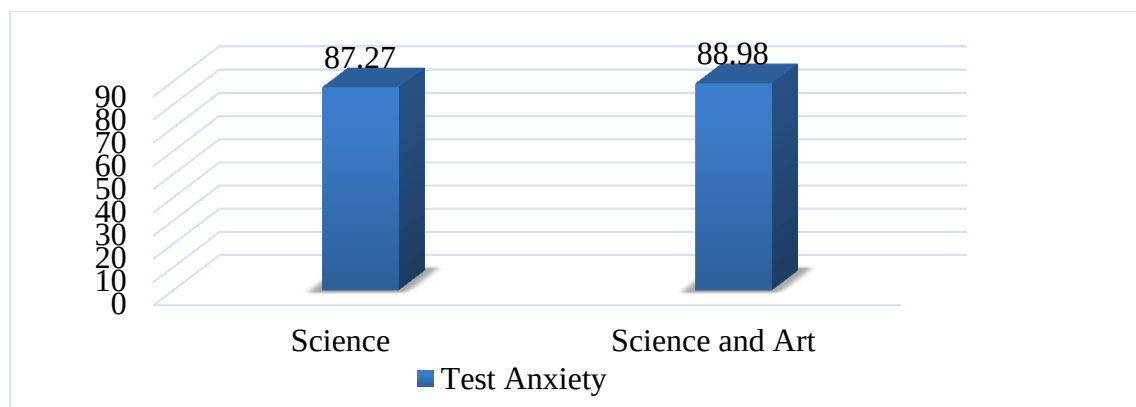


Figure 3 Mean Comparisons of Grade Ten Students' Test Anxiety by Specialized Combination

Comparison of Test Anxiety of Grade Ten Students by School

Mean and standard deviation for test anxiety of Grade Ten students by school were reported in Table 5. Descriptive statistics revealed that the mean scores were slightly different by school. Visual presentation of the result was shown in Figure 4.

Table 5 Descriptive Statistics for Test Anxiety of Grade Ten Students by School

Variable	School	N	Mean	SD
Test Anxiety	School 1	49	88.84	10.459
	School 2	50	85.56	11.867
	School 3	50	87.10	12.425
	School 4	50	88.78	8.892
	School 5	50	81.52	9.274
	School 6	50	88.12	12.961
	School 7	50	91.76	7.620
	School 8	50	89.32	13.761

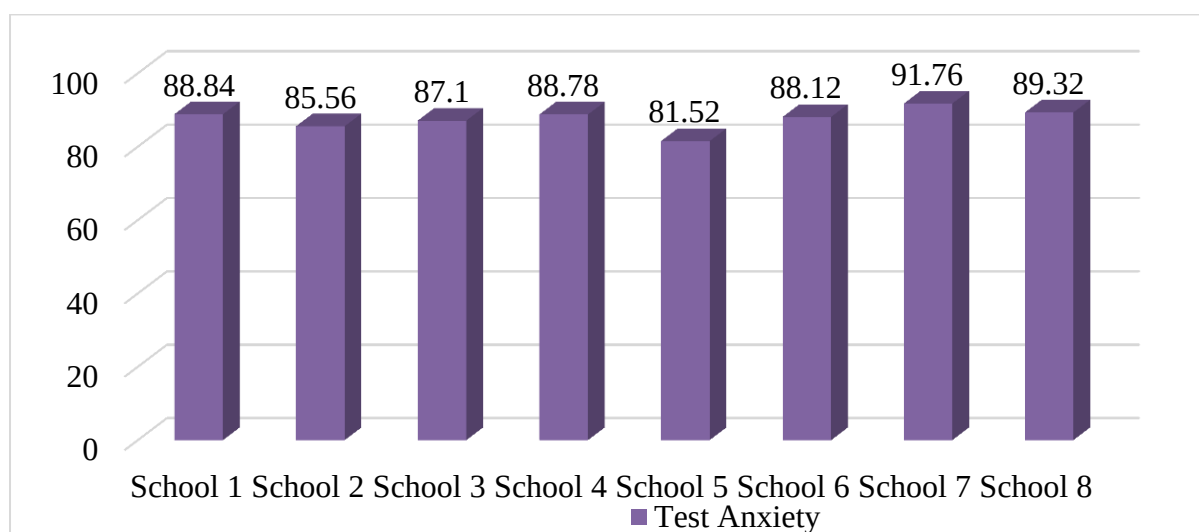


Figure 4 Mean Comparison of Grade Ten students' Test Anxiety by School

To obtain more detailed information on the test anxiety of Grade Ten students, one-way analysis of variance was conducted. ANOVA result showed that there was significant difference in students' test anxiety among schools. It can be assumed that test anxiety of Grade Ten students depend on school (see Table 6).

Table 6 ANOVA Result for Test Anxiety of Grade Ten Students by School

Variable		Sum of squares	df	Mean Square	F	p
Test Anxiety	Between Groups	3240.001	7	462.857	3.758	.001
	Within Groups	48159.854	391	123.171		
	Total	51399.855	398			

Note: ** $p < 0.01$

ANOVA result pointed out that significant difference was found among the Grade Ten students in selected schools at the 0.01 level. To obtain more detailed information of a group, Post Hoc test was executed by Turkey HSD method.

Table 7 Results of Tukey (HSD) Test Multiple Comparison for Test Anxiety of Grade Ten Students by School

Variable	(I) School	(J) School	Means Differences (I-J)	p
Test Anxiety	School 5	School 1	-7.317*	.025
		School 4	-7.260*	.026
		School 7	-10.240*	.000
		School 8	-7.800*	.011

Note: * $p < 0.05$, *** $p < 0.001$

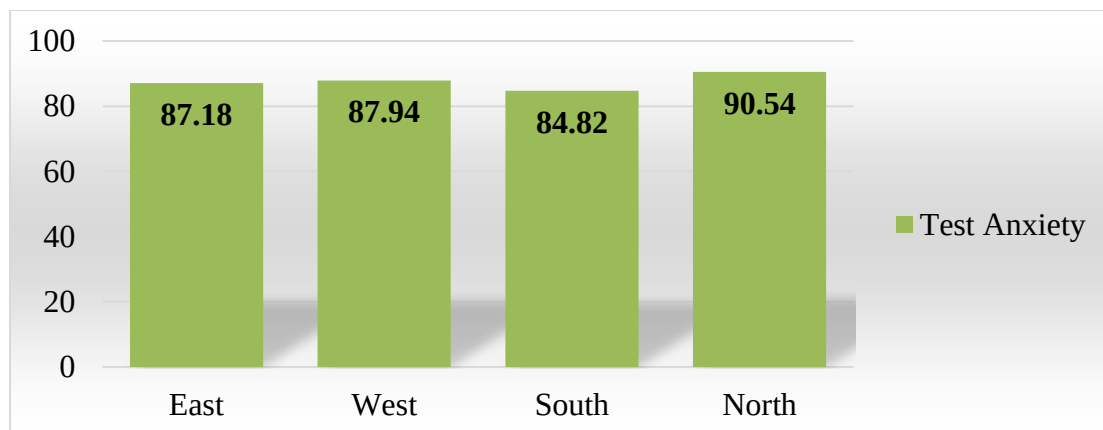
According to the Table 7, the mean scores of Grade Ten students in School (1), School (4), School (7) and School (8) were lower than those in School (5).

Comparison of Test Anxiety of Grade Ten Students by District

Mean and standard deviation for test anxiety of Grade Ten students by district were reported in Table 8. Descriptive statistics revealed that the mean scores were different by district. Visual presentation of the result was shown in Figure 5.

Table 8 Descriptive Statistics for Test Anxiety of Grade Ten Students by District

Variable	District	N	Mean	SD
Test Anxiety	East	99	87.18	11.256
	West	100	87.94	10.782
	South	100	84.82	11.693
	North	100	90.54	11.134

**Figure 5 Mean Comparison of Test Anxiety by District**

To obtain more detailed information on the test anxiety of Grade Ten students, one way analysis of variance was conducted. ANOVA result showed that there was significant difference

in Grade Ten students' test anxiety among district. It can be assumed that test anxiety of Grade Ten students depend on districts (see Table 9).

Table 9 ANOVA Result for Test Anxiety of Grade Ten Students by District

Variable		Sum of squares	df	Mean Square	F	p
Test Anxiety	Between Groups	1665.887	3	555.296	4.410	.005
	Within Groups	49733.967	395	125.909		
	Total	51399.855	398			

Note: **p<0.01

ANOVA result pointed out that significant difference was found among the Grade Ten students by four districts at the 0.01 level. To obtain more detailed information of groups, Post Hoc test was executed by Turkey HSD method.

Table 10 Result of Tukey (HSD) Test Multiple Comparison for Test Anxiety of Grade Ten Students by District

Variable	(I) District	(J) District	Mean Differences (I-J)	p
Test Anxiety	North	South	5.720*	.002

Note: **p<0.01

According to the Table 10, in test anxiety, mean scores of Grade Ten students from North district was higher than that of South district at 0.01 level.

Conclusion and Discussion

This study was an attempt to investigate Grade Ten students' test anxiety. Therefore, the researcher conducted in investigation by using the quantitative research methods. As a sample, a total of 399 Grade Ten students from eight basic education high schools in the four districts of Yangon Region were selected. Test Anxiety Inventory (TAI) developed by Spielberger (1980) was used. Students' test anxiety inventory containing 35 items were adapted to make the respondents comfortable in responding this inventory. The participants responded a 4-point Likert scale by ticking each statement in questionnaire.

In this study, the result of *t* test showed that there was a significant difference in students' test anxiety by gender. In this research, female students' test anxiety was higher than male students. Most of the female students were more distress concerning tests than male students and female students had uneasy feelings before an important test and essentially are afraid to fail.

This finding is consistent with the previous researches on gender effects on test anxiety (Mousavi, Haghshenas & Alishahi, 2008; Lashkaripour, 2006; Mehregan, Najjarian & Ahmadi, 2001; Ferrando et al, 1999; Bishop, Baner & Becker, 1998; Chang, 1997; Berger & Schecter, 1996; Feingold, 1994).

Although the mean scores are slightly different, the results of *t*-test showed that there were no significant differences in students' test anxiety by specialized combination. This result indicates no statistically significant effect on students' test anxiety based on specialized combination.

There was significant difference in students' test anxiety by school. There was a significant difference test anxiety by the district. It can reasonably be concluded that depending the different school settings, the students can feel test anxiety differently.

The findings of this study will contribute to parents, teachers and school administrators more understand the test anxiety of student, and also students to be aware of that test are not the means of punishment.

Limitations of the Study

Although the results support the objectives of the study, there were some limitations. In this study, there are four variables: gender, specialized combination, school, and district. The sample size is not sufficient to represent the whole students in all schools as there are many basic education high schools in Myanmar. This present study was conducted only Grade Ten students from eight selected schools in Yangon.

Suggestion for Future Research

In accordance with the limitations exposed and the results obtained, future lines of research should explore more deeply and more specifically on students' test anxiety. It is necessary to study the students from other levels of grade. It should be considered to study other factors that affect on students' test anxiety. Moreover, it is necessary to collect the data by observing the teachers' instructional practices in the classroom. More research is required to assess which factors influence on anxiety of students in learning academic subjects.

Acknowledgement

I would like to express profound and sincere thanks to Dr. Pyone Pyone Aung (Pro-Rector, Yangon University of Education) and Dr. Kay Thwe Hlaing (Pro-Rector, Yangon University of Education) for their administrative supports and their official helps in this study. I would like to express my special gratitude to Dr. Naing Naing Maw (Professor/Head, Department of Educational Psychology, Yangon University of Education) for her previous guidance and suggestions. I also wish to convey my acknowledgement to Dr. Daw Sann Win (Associate Professor, Department of Educational Psychology, Yangon University of Education) for his valuable suggestions and critical remarks on this study.

References

- Berger, R., & Shechter, Y. (1996). Guidelines for choosing an "intervention package" for working with adolescent girls in distress. *Adolescence*, 31, 709-717.
- Bishop, J. B., Baner, K. W., & Becker, E. T. (1998). A survey of counseling needs of male and female college students. *Journal of College Student Development*, 39 (2), 205-210.
- Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and Academic Performance. *Contemporary Educational Psychology*, 27(2), 270-295. doi: 10.1006/ceps.2001.1094.
- Chang, J. I. (1997). *Contexts of adolescent worries: Impacts of ethnicity, gender, family structure, and socioeconomic status*. Paper presented at the annual meeting of NCFR Fatherhood and Motherhood in a Diverse and Changing World, Arlington, VA.
- Deffenbacher, R., (1978). Worry, emotionality and task generated interference in test anxiety: An empirical test of attentional theory. *Journal of Educational Psychology*, 70, 248-254.
- Donnelly R. Embedding interaction within a blend of learner centric pedagogy and technology. *World Journal on Educational Technology*.1(1); 2009: 6-29.
- Drummond, R., (1996). *Appraisal Procedures for counselors and helping professionals*. New Jersey: Prentice Hall.
- Feingold, A. (1994). Gender Differences in Personality: A Meta analysis. *Psychological Bulletin*, 16, 429-456.
- Ferrando, P. et al. (1999). A Psychometric Study of the Test Anxiety Scale for Children in a Spanish Sample. *Personality and Individual Differences*, 27(1), 37-44.
- Goldman, L., (1971). *Using tests in counseling*. Pacific Palisades: Good Year.
- Günay, O., Öncel, Ü. N., Erdoğan, Ü., Güneri, E., Tendoğan, M., Uğur, A., & Başaran, O. U. (2008). *Factors affecting the state and continuing anxiety level in high school final grade students*. *Journal of Health Sciences*, 17(2), 77-85.

- Kahan, L. M. *The correlation of test anxiety and academic performance of community college students*. Capella University. United State. Pro Quest LLC journal. 9 (45); 2008: 68-93.
- Khaing Thiri Mon, Daw. (2015). *Impact of anxiety on the academic achievement of students having different mental abilities*. Unpublished master theses, Yangon University of Education, Myanmar.
- Lashkaripour, K. (2006). The relationship between test anxiety and academic achievement in students of guidance schools in Zahedan. *Tabib Shargh Journal*, 8th year, No 4, winter 85.
- McDonald, A. S. (2001). The prevalence and effects of test anxiety in school children. *Journal of Educational Psychology*, 21(1), 89-102.
- Mehregan, F., Najjarian, B., & Ahmadi, A. (2001). The relation between test anxiety and performance among Ahvaz university students. *Ferdowsi J Psychol*, 2,7-24.
- Morris, L. W., & Liebert, R. M. (1970). Relationship of cognitive and emotional components of test anxiety to physiological arousal and academic performance. *Journal of Consulting and Clinical Psychology*, 35(3), 332-337.
- Mousavi, M., Haghshenas, H., & Alishahi, M. J. (2008). Effect of gender, school performance and school type on test anxiety among Iranian adolescents. *Iranian Red Crescent Medical Journal*, 10, January, 4-7.
- Öner, N. (1989). *Handbook of Text Anxiety Inventory*. Istanbul: Yuksekogretimde Rehberligi Yayma Vakfi.
- Putwain, D. W. (2008). Test anxiety and GCSE performance: The effect of gender and socio-economic background. *Educational Psychology in Practice*, 24(4), 319-334.
- Putwain, D. W., Connors, L., & Symes, W., (2010). Do cognitive distortions mediate the test anxiety–examination performance relationship? *Educational Psychology*, 30(1): 11–26.
- Sarason, S. B., Mandler, G., & Craighill, P. G., (1952). The effect of differential instructions on anxiety and learning, *Journal of Abnormal and Social Psychology*, 47, 561-565.
- Sarason, I. G. (1984). Stress, anxiety, and cognitive interference: Reactions to tests. *Journal of Personality and Social Psychology*, 46, 929-938.
- Spielberger, C. D. (1979). *Understanding stress and anxiety*. New York: Harper and Row, publishers.
- Spielberger, C. D., Gonzales, H. P., Taylor, C. J., Anton, W. D., Algaze, B., Ross, G. R., & Westberry, L. G. (1980). *Test anxiety inventory*. (Available from Consulting Psychologists Press, Inc., 3803 E. Bayshore Road, Palo Alto, CA 94303).
- Taşğın, Ö., Tekin, M., & Altınok, E. (2007). Examination of the level of the anxiety of physical education teachers in terms of various variables (Batman province example). *Journal of Physical Education and Sport Sciences*, 9(4), 12-20.
- Wine, J. D. (1980). Cognitive- attentional theory of test anxiety. In I.G. Sarason (cd.), *Test Anxiety: Theory, Research and Application*. Hillsdale, NJ: Erlbaum.
- Wren, D. G., & Benson, J. C. (2004). Measuring test anxiety in children: Scale development and internal construct validation. *Anxiety, Stress & Coping*, 17(3), 227-240.
- Zeidner, M. (2007). Test anxiety in educational contexts. In: Schutz PA and Pekrun R (eds) *Emotion in Education*. Burlington, MA: Elsevier, pp.165–184.

DETERMINANTS OF RISKY SEXUAL BEHAVIOURS AMONG HIGH SCHOOL STUDENTS IN MYANMAR

Tsai Minn Wai¹, Naing Naing Maw²

Abstract

The purpose of the study was to explore the determinants of risky behaviours among high school students in Myanmar, to investigate the relationship between risky sexual behaviours and intrapersonal factors such as religiosity, self-esteem, social media usage, emotional intelligence and personality, to identify the factors facilitating the risky sexual behaviours among high school students, to examine which factors has the most significant effect on risky sexual behaviours among high school students in Myanmar. A total of 800 high school students from Mandalay Region, Ayeyarwaddy Region, Bago Region, Rakhine State and Shan State participated in the study. A cross sectional design was taken in this study. The Youth Risk Behaviour Surveillance System (YRBSS), Santa Clara Strength of Religious Faith Questionnaire (SCSQRF), Rosenberg Self-Esteem Scale (RSE), Internet Addiction Test (IAT), Wong and Law Emotional Intelligence Scale (WLEIS) and Big Five Inventory (BFI-10) were used as the research instruments. As a result, bivariate analysis showed that the likelihood of engaging in risky sexual behaviour was significantly associated with the level of religiosity and social media usage. But, there was no significant relationship between risky sexual behaviour and self-esteem, emotional intelligence and personality. According to the result of multivariate analysis, only religiosity was the most significant determinant on risky sexual behaviour.

Keywords: Risky Sexual Behaviour, Religiosity, Self-esteem, Social Media Usage, Emotional Intelligence, Personality

Introduction

Importance of the Study

Myanmar is a developing nation with a high youth population. So, risky sexual behaviours are of paramount concern for school adolescents, educators and the government. Certainly, engaging in risky sexual behaviours and developing the related factors such as moral, ethical and or cultural norms are in direct contravention of will greatly change the life of school adolescents in this state. The aforementioned risky sexual behaviours all have major implications for the future, so gaining a deeper understanding of how factors influence risky sexual behaviour can lead to improvements in education on adolescent moral and behaviour. This was why the education system should be change a little, especially curriculum or course and continuously the opinion of the mass. This is because such changes will not only prevent the risks about sexual behaviour, but they will also prevent or at least diminish the incidence and prevalence of STIs, including HIV/AIDS and also reform the right view, amend the blunder behaviour and rectify the lapse ethics. Myanmar is the greatest glory of ancient source of history, in the context of art, culture and religion, in the Southeast Asia. It is also believed that the youths are playing a significant part in this unbroken line of glory country

The outcome of this study will have connotations for further policy making and practice. The study outcome will enable educators and or teachers to identify individuals (students) at risk of astringent sexually transmitted infections and motivate them to reduce factors that may influence sexual risky behaviours through education on safe sexual practices and consequences of early sexual practices. Additionally, the study outcome will contribute to the development of education system promotion strategies for addressing sexual risk behaviours of the Myanmar school adolescents. Taking the issue of education system change further, this study has the potential of saving time and effort in that the implementation of education system promotion

¹ Senior Assistant Teacher, Basic Education High School (Kani), Pyapon Township, Ayeyarwaddy Region

² Dr, Professor/Head of Department, Department of Educational Psychology, Yangon University of Education

strategies may noticeably result in the reduction of sexual risk behaviours, which in turn would reduce the incidence and prevalence of sexually transmitted diseases and the bad moral behaviours.

This study could be significance to parents, educationalists and the society generally in that it might provide understanding of the influence of the various factors of adolescent sexual behaviour on their conscious or unconscious mind. Through their sexuality misconceptions, they could overweight and beyond the limit of the social norms, deviate the standardized rules and regulations and followed by undertaking the risks and related consequences. Thus, this could divulge certain important issues that need to be addressed by policy makers, curriculum designers and the wider society in their efforts to assist the adolescents make the best decisions on their sexual relationship.

The outcomes of this study will have down-to-earth significance to the school, the community and adolescents who engage in risk-taking behaviours by increasing awareness of how each of the factors may predispose adolescents to engage in risk-taking behaviours, as well as the influence of age, grade and gender. This may lead to a better understanding of the influence of the adolescent's behaviours and assist the school, community and adolescents to identify "at-risk groups" of adolescents who are likely to engage in risk-taking behaviours. The study will also be beneficial to the school, community and adolescents by giving insight as to whether or not the factors such as religiosity, self-esteem, social media usage, emotional intelligence and personality traits can act as the main leading role of influencers on risky sexual behaviours. By doing so, the study will contribute towards the planning of future interpolation strategies that focus more on strengthening awareness. Theoretically, this study will add on to the available literature on risky sexual behaviours by hosting the role of predictors on risky sexual behaviours, as many researchers have not yet explored this area. The limitations of this study will give direction to future researchers by identifying other gaps that still need to be researched.

This study bridges a gap in the literature on risky sexual behaviour by addressing religiosity, self-esteem, social media usage, emotional intelligence and personality in the light of high school adolescent students. With this knowledge, educators can facilitate the adjustment by recommending use of different programs when adolescents call for additional guidance in light of risky sexual behaviours. Therefore, in our country, risky sexual behaviours of adolescent students have become a major problem for Myanmar education, it is clearly time to aware of the urgent need to implement necessary changes in time in our education system.

Purpose of the Study

The primary purpose of the study is to explore the determinants of risky sexual behaviours among high school students in Myanmar.

The specific objectives are:

1. to inquire the relationship between risky sexual behaviours and intrapersonal factors
2. to investigate the most significant factors on high school students' risky sexual behaviours.
3. to develop recommendations for implication to reduce or prevent risky sexual behaviour and its consequences.

Definitions of Key Terms

The following definitions of the key terms were used in this study.

Risky Sexual Behaviours (RSB) is commonly defined as behaviour that increases one's risk of contracting sexually transmitted infections and experiencing unintended pregnancies.

They include having sex at an early age, having multiple sexual partners, having sex while under the influence of alcohol or drugs, and unprotected sexual behaviors (Centers for Disease Control and Prevention, 2010).

Religiosity is the strength of one's connection to or conviction for their religion (King & Williamson, 2010).

Self-esteem is a positive or negative attitude toward a particular object, namely, the self (Rosenberg, 1965).

Social Media mean "social media sites" (Diga & Kelleher, 2009), or a set of information technologies which facilitate interactions and networking (Kapoor et al., 2017; Oestreicher-Singer & Zalmanson, 2013).

Emotional Intelligence is a type of emotional information processing that includes the accurate appraisal of emotions in oneself and others, appropriate expression of emotions, and adaptive regulation of emotions (Mayer, DiPaolo & Salovey, 1990).

Personality is the dynamic organization within the individual of those psychosocial systems that determine an individual's unique adjustment to his environment (Gordon Allport, 1937).

Review of Related Literature

Risky Sexual Behaviour

Risky behaviours have been defined as the balance between behaviours that have negative consequences with behaviours that have perceived positive consequences (Gullone & Moore, 2000). These risky behaviours include but are not limited to unsafe sex, delinquency, substance abuse, and impulsive or sensation-seeking (Gullone & Moore, 2000). Risky sexual behaviour among adolescents is a major public health concern since it can have serious negative outcomes, such as increased odds of sexually transmitted diseases like chlamydia, HIV and HPV virus (Kotchick, Shaffer, Miller, & Forehand, 2001; Lansford et al., 2014).

Early sexual initiation. Timing of sexual initiation is considered as an important factor in discussions relating to pregnancy and STDs among youths. Early sexual activity is also facilitating to more serious problems including other risky behaviours and the onset of disease: STD's, HIV, and AIDS amongst teenagers.

Unprotected sex. Unprotected sex is related to an increased potential of contracting STDs and unwanted pregnancies (Kost & Henshaw, 2012). Approximately 19 million STDs cases were diagnosed in 2012, and 13 percent of these cases were youth ages 13-24 with HIV/AIDS (Kost & Henshaw, 2012). Unprotected sex is also closely associated with alcohol and substance use.

Multiple partners. Multiple sexual partnerships are high-risk sexual behaviours because of their tendency to increase the risk of HIV transmission through sexual networks (Berry & Hall, 2009). It is therefore important to know the extent to which youths are engaging in multiple sexual partnerships. Sexually transmitted diseases are often associated with sexually active youths with multiple sexual partners.

Methodology

Sample of the Study

In order to obtain the data, the sample of Myanmar school students from the five regions: Ayeyarwaddy Region, Mandalay Region, Bago Region, Rakhine State and Shan State was selected by using stratified sampling technique and was also administered to them. A total of 800 students from grade 10 and grade 11 in ten schools participated in this study.

Instrumentation

The Youth Risk Behaviour Surveillance System (YRBSS - 2019 Standard High School YRBS) developed by the Centers for Disease Control and Prevention (CDC) was used in this study to assess students' risky sexual behaviours. The Youth Risk Behaviour Surveillance System monitors six categories of behaviours: those that contribute to unpremeditated injuries and violence, tobacco use, alcohol and other drug use, sexual behaviour that contribute to unintentional pregnancy and sexual transmitted disease, dietary behaviour, and physical activity. However, the section of the scale that related to sexual behaviour was used. Santa Clara Strength of Religious Faith Questionnaire (SCSOF) provided by Thomas G. Plantae and Marcus T. Boccaccini (1997), Rosenberg Self-Esteem Scale (RSE) provided by Corcoran & Fischer, 2000; Rosenberg (1965), Internet Addiction Test (IAT) developed by Dr. Kimberly Young (1996), Wong and Law Emotional Intelligence Scale (WLEIS, Wong & Law, 2002), Big Five Inventory (BFI-10) developed by Rammstedt and John (2007) were used in the present study.

Procedure

The participants from two schools of Bago Region were distributed the self-reported survey questionnaire in the second week of September, 2019. Similarly, the target participants from two schools of Ayeyarwady Region were distributed the self-reported survey questionnaire in the last week of September, 2019. As above, the target participants from two schools of Mandalay Region were distributed the self-reported survey questionnaire in the third week of October, 2019. And then, the target participants from two schools of Shan State were distributed the self-reported survey questionnaire in the last week of October, 2019. Finally, the target participants from two schools of Rakhine State were distributed the self-reported survey questionnaire in the first week of November, 2019. With the help of headmasters and teachers of the target schools, students from each grade were systematically and proportionally selected from each section. The participants were allowed 45 minutes to response the questionnaire. To reduce the bias of this study, the same procedures of data collection were used in each Region and in each State.

Data Analysis and Findings

Factors Associated with Risky Sexual Behaviour: Bivariate Analysis

Bivariate analysis using simple logistic regression had been carried out to examine the relationship between the outcome variables and selected determinant factors. And then, factors which showed significant bivariate associations were retained for subsequent multivariate analysis using multiple logistic regressions. Odds ratios analysis was used to assess the effect of factors influencing sexually risk behaviours.

Simple logistic regression was conducted to assess whether the religiosity variable significantly predicted the students' risky sexual behaviours or not. The **Omnibus Tests of Model Coefficients** table in SPSS states that religiosity is significant, $\chi^2 = 466.5$, $df = 1$, $N = 800$, $p < 0.001$. Table 4.15 presents the odds ratios (OR = 0.707) which means there is a negative association between religiosity and risky sexual behaviour. In other words, the higher the

religiosity is, the lower the risky sexual behaviour take place. This model can predict 90.9% correctly.

Table 1 Binary Logistic Regression of Religiosity variable to Risky Sexual Behaviour

Variable	B	S.E	p-value	Exp (B)	95% confidence intervals
Religiosity	-0.347	0.24	0.000	0.707	0.675 – 0.741

Note: β - regression coefficient constant, exp B-odds ratio

Summary of model:-2log likelihood=446.189, Cox & Snell's R^2 = 0.443, Nagelkerke's R^2 =0.649

Again, to assess whether the self-esteem variable significantly influence whether or not the students take risky sexual behaviour, simple logistic regression was used. The **Omnibus Tests of Model Coefficients** table in SPSS describes that self-esteem is not statistically significant that is due to the fact that S.E is relatively high than B, which makes the Wald statistic lower.

Table 2 Binary Logistic Regression of Self-Esteem Variable to Risky Sexual Behaviour

Variable	B	S.E	p-value	Exp (B)	95% confidence intervals
Self-esteem	-0.026	0.029	0.362	1.026	0.970 – 1.086

Note: β - regression coefficient constant, exp B-odds ratio

Summary of model:-2log likelihood=911.854, Cox & Snell's R^2 = 0.001, Nagelkerke's R^2 =0.002

Next, to examine the association between media variable and risky sexual behaviour, simple logistic regression was again used. The **Omnibus Tests of Model Coefficients** table in SPSS describes that media usage is statistically significant, $\chi^2 = 99.204$, $df = 1$, $N = 800$, $p < 0.001$. Table 4.17 indicates the odds ratios (OR=1.050) which means there is a positive association between two variables i.e., the higher the level of mass media usage, the more the risk of sexual behaviour was.

Table 3 Binary Logistic Regression of Mass Media Usage Variable to Risky Sexual Behaviour

Variable	B	S.E	p-value	Exp (B)	95% confidence intervals
Mass Media Usage	0.49	0.005	0.000	1.050	1.039 – 1.061

Note: β - regression coefficient constant, exp B-odds ratio

Summary of model:-2log likelihood=813.477, Cox & Snell's R^2 = 0.117, Nagelkerke's R^2 =0.171

The following table states that there was no association between emotional intelligence and risky sexual behaviour. And also there is no relationship between risky sexual behaviour and subscales of emotional intelligence.

Table 4 Binary Logistic Regression of Emotional Intelligence Variable to Risky Sexual Behaviour

Variable	B	S.E	p-value	Exp (B)	95% confidence intervals
Emotional Intelligence	-0.013	0.010	0.216	0.987	0.968 – 1.007
SEA	-0.119	0.126	0.345	0.888	0.694 – 1.136
OEA	0.110	0.118	0.353	1.116	0.885 – 1.408
UOE	-0.231	0.124	0.062	0.794	0.623 – 1.012
ROE	0.024	0.110	0.830	1.024	0.825 – 1.271

Note: β - regression coefficient constant, exp B-odds ratio

Summary of model:-2log likelihood=911.148, Cox & Snell's R^2 = 0.002, Nagelkerke's R^2 =0.003

SEA-self-emotion appraisal

OEA-emotional appraisal

UOE- use of emotion

ROE-regulation of emotion

The following table states that there was no association between personality and risky sexual behaviour. However, the subscale of personality trait, openness was statistically significant ($p < 0.01$) with risky sexual behaviour. The odds ratios (OR = 1.279) means positive association between openness type of personality and sexually risk behaviour.

Table 5 Binary Logistic Regression of Personality Variable to Risky Sexual Behaviour

Variable	B	S.E	p-value	Exp (B)	95% confidence intervals
Personality	-0.015	0.017	0.367	0.985	0.953 – 1.018
Openness	0.246	0.090	0.007	1.279	1.071 – 1.527
Conscientiousness	-0.142	0.098	0.147	0.868	0.717 – 1.051
Extraversion	-0.118	0.085	0.165	0.88	0.752 – 1.050
Agreeableness	-0.052	0.093	0.575	0.949	0.791 – 1.139
Neuroticism	-0.127	0.090	0.161	0.881	0.738 – 1.052

Note: β - regression coefficient constant, exp B-odds ratio

Summary of model:-2log likelihood=911.867, Cox & Snell's R^2 = 0.001, Nagelkerke's R^2 =0.001

Determinants of Risky Sexual Behaviour: Multivariate Analysis

To determine the most significant factor on risky sexual behaviours, multiple logistic regression was used. In combination of intrapersonal factors, table (6) shows that religiosity was significantly associated with risky sexual behaviour (OR = 0.695; 95% CI = (0.659 – 0.733)). That is, there is a negative association between two variables, the higher the religiosity level, the less the risk of sexually behaviour. Although the mass media usage was statistically significant with risky sexual behaviour in bivariate analysis, here there was no significant relationship in combined effect of intrapersonal factors. Next, self-esteem and emotional intelligence were not significant in bivariate analysis with risky sexual behaviour, here there was a significant relationship in whether sexually risk behaviour or not. To summarize, only religiosity was the most influence factor on risky sexual behaviour.

Table 6 Results of Multivariate Analysis of the Intrapersonal Factors Facilitating Risky Sexual Behaviour

Variables	p-value	Exp(B)	95% C.I for EXP(B)	
			Lower	Upper
Religiosity	0.000	0.695	0.659	0.733
Mass media usage	0.740	1.003	0.987	1.018

Discussion and Recommendations

Discussion

According to the study, 800 participants from ten schools by stratified sampling on the whole Myanmar, it showed that most students (25.75%) were sexually experienced. Females students (28.64%) reported ever had sex when compared to (71.36%) of males students. Therefore, Myanmar high school adolescents, both males and female, had had sexual intercourse by statistically one-fourth of the whole sample. Adolescents are exposed to risky sexual behaviours as shown by the proportion of students who had early sexual debut, multiple sexual partners, did not use condoms and other contraceptive methods during their last sexual act. The age at first sexual intercourse among students in Myanmar were mostly under 15 years (85.92%). Males engage into sex earlier than females. This shows that adolescent students are now engaging in sexual activity at younger ages. Sexual activity in the last three months was relatively high because only 40.29% of sexually experienced students did not have sex. Among students who had sex in the last three months, 46.6% had two or more than two sexual partners and 13.1% had one sexual partner with males having more sexual partners than females. This showed that male students were more active in sexual behaviour. There was no use of drugs or alcohol during sex among female students but in males, 20.38% of the sexually active students had sex under the influence of alcohol or drugs. Drug use and alcohol consumption is widely known to be a potential risk factor that may lead to risky sexual behaviours and the threat of sexual coercion (Stafstrom and Agardh, 2012; Balinus et al., 2010; Rudatsikira et al., 2009; Sherman et al., 2009).

Based on the analysis, risky sexual behaviours can be divided into three groups; no risk group (74.25%), low risk group (7.75%) and high risk group (18%). Despite the percentage of low risk group being not too much, it should not be ignored, too if its later consequences are taken into consideration. In Myanmar, traditional cultures and society were said to be sensitive for sexuality issues. However, sex education or information on school adolescents should be equipped for the future of Myanmar, not slipping on groove of Myanmar' cultures.

Research question (1): Is there a relationship between risky sexual behaviour and religiosity among high school students?

Simple logistic regression analysis revealed that the likelihood of engaging in risky sexual behaviour was significantly associated with the level of religiosity. Adolescents who are weak in attending any religious services or religious affiliation and/or religious practices were at a greater risk of engaging in risky sexual behaviours. Analysis stated that the odds ratio value is 0.707 it was negative direction between risky sexual behaviours and religiosity. This means that risky sexual behaviours increased with decreasing religiosity i.e., the higher the level of religiosity was, the lower the risky sexual behaviours took place. This model can predict correctly 90.9%. Previous research has observed that religiosity is associated with later sexual debut (Rostosky et al., 2003; Rostosky et al., 2004; Meier, 2003; Haglund & Fehring, 2010; Lefkowitz et al., 2004; Lammers et al., 2000; Hull et al., 2011; Thornton & Camburn, 1989; Manlove et al., 2006;

Manlove et al., 2008; Davis & Friel, 2001; Burdette & Hill, 2009). However, the study found that self-rated religiosity was significantly associated with risky sexual behaviors, which is in accordance with previous research (Haglund & Fehring, 2010). Religious reasons were also cited as the main reason for not engaging in sex among the sexually inexperienced adolescents. These findings are in correspondence with other previous findings that religious adolescents were less likely to engage in risky sexual behaviours (Brewster et al., 1998; Edwards et al., 2011). Religiosity plays a key role in shaping young student's sexual behaviours through attitudes towards pre-marital sex, HIV, contraception including condoms and perception of risk. In Myanmar, the religion mostly students worshiped was Buddhism it was the main fact that it can control student's risky sexual behaviours from the point of religion such as the Five precepts of Buddhism. According to the study, to reduce the risks of sexually behaviours among high school students, there should have more religious practices and more religious centers throughout the whole nation to educate adolescents in and out of school. For educators, they play a key role in educating school adolescents not to be engaged in risky sexual behaviours.

Research question (2): Is there a relationship between risky sexual behaviour and self-esteem among high school students?

Simple logistic regression stated that there was no significant correlation between risky sexual behaviours and self-esteem. This is coherent with Miller et al. (1987) and Hendrick and Hendrick (1987) who found that there was very little disparity in sexual behaviour explained by self-esteem and that the relationship may have more to do with attitudinal laxness and culture. That is, one might envisage a positive relationship related to self-esteem and sexual behaviour for those with more permissive sexual attitudes, i.e., who believe premarital sex is not wrong, while expecting a negative relationship between self-esteem and sexual behaviour among those with less unautocratic attitudes, i.e., who believe premarital sex is wrong. High school students also may underrate their risk of engaging in high incidences of sexual behaviour in order to protect their self-esteem and ease their anxiety about engaging in potentially risky behavior (Kershaw, et al., 2003). Hagenhoff, et al. (1987) theorized that high levels of self-esteem may actually increase sexual behaviors in emerging adults, as they may feel unassailable and protected from harm. When a female student engages in sexual behaviours with no negative consequences, the behaviour is reinforced. It may be further reinforced, vicariously, if the family or peer group is also engaging in these behaviours with no negative consequences. In some cases, engaging in sexual conducts may actually bolster a person status within their group, thus either not affecting their self-esteem or positively boosting it.

Research question (3): Is there a relationship between risky sexual behaviour and social media usage among high school students?

The study revealed that there is a significantly relationship between risky sexual behaviour and social media usage among high school students. The odds ratios value is 1.050 which stated that there is a positive association between self-esteem and risky sexual behaviours. The model can predict correctly 77.9%. The study means that the higher the level of mass media usage, the more the risk of sexually behaviours. The internet has opened a world of options for teens that may not be mature enough and experienced enough to avoid the pitfalls of promiscuity. Scrutinizing TV programming, social media, video letting and music purchase that promotes teen sex and restricting access is important to keep children from viewing non-age appropriate materials. It is difficult to image that teens would send unsheathed pictures of body parts to friends and expose themselves in ways they would not have previously if technology were not misused so widely. Technology is transcending in ways never before imagined and it is a challenge to keep up. Parents will need to continue to aware that internet access that keep students will be prevented from exploring websites that are inappropriate and clash with the

values that the family is trying to model for them. Parents need to provide guardianship for children and not buy clothes that are risky and revealing that promote sexuality of children as young as nine and ten years old. The topic of teens and risky sexual behaviour is becoming more popular. However, prevention and intervention are not. Partnerships with parents and educators may lead to developing a program to teach adolescents about early sexual activity and the risks and consequences. There may be also a demand for emphasis on family values that imply more supervision and open dialog between parents and teens regarding risky behaviour.

Research question (4): Is there a relationship between risky sexual behaviour and emotional intelligence among high school students?

The study stated that there was no relationship between emotional intelligence and risky sexual behaviour. And also there is no relationship between risky sexual behaviour and subscales of emotional intelligence such as SEA-self-emotion appraisal, OEA-emotional appraisal, UOE-use of emotion and ROE-regulation of emotion.

Research question (5): Is there a relationship between risky sexual behaviour and personality traits among high school students?

The study revealed that there was no relationship between personality traits and risky sexual behaviour. However, among the subscales of personality traits, openness was statistically significant with risky sexual behaviour. The odds ratios (OR = 1.279) which means positive association between openness type of personality and sexually risk behaviour. This was inconsistent in previous research that openness was found to be linked to less sexual risk taking (Miller JD, Lynam D, Zimmerman RS, Logan TK, Leukefeld C, Clayton R., 2004). Perhaps this relationship could be explained similarly to that of the relationship between personality and alcohol use. It may be that people high in openness simply seek mental and spiritual experiences as opposed to bodily stimulation (Vollrath M, Knoch D, Cassano L., 1999). This could help to explain the relationship found between openness and sexual risk taking.

Recommendations

According to the findings of this study, the factors influencing risky sexual behaviours directed towards gender, religiosity, parents, peers and educators. This view is captured more in the following sub-recommendations.

Expectations for Parents

- Adolescents should closely follow religious institutions and/or activities and should also have close parental monitoring to minimise those factors influencing sexually risk behaviours.
- Parental level of education also plays undeniable role in the reduction of the factors influencing sexually risk behaviours. Therefore their knowledge should be maximised.
- Parents should be sensitized about the whole question of adolescents' sexuality so that they can be more involved in teaching them about the same.
- Education on reproductive and sexual health with emphasis on the consequences of all the aforementioned risk behaviours, including the negative impacts of peer pressure, should be included in the delivery messages and strategies for tackling those factors influencing sexual risk behaviours.
- Family interventions on how parents can bring their children under control at their childhood stage can provide parents' direction as well on how to balance adolescents' autonomy with their obligation to protect them from harm.

Expectations for Government

- Government should direct public education initiatives that increase recognition and understanding of the importance of parent-adolescents relationship through advertisement by media and through provision of information brochures in government agencies, public health offices and schools should be encouraged and promoted.
- Government should strengthen youth-serving agencies, churches, monasteries, community and social organizations and schools to develop strategies that promote high levels of parent-adolescents connectedness.
- Government should work more on religious empowerment strategies linked with schools and monasteries to help reduce the negative impact of risky sexual behaviours.
- The education system should put into consideration the idea of incorporating sex education into the school curriculum.
- The schools should play a more active role in educating the adolescents/adolescents on sex education.
- The community should work hand in hand with community-based organisations and NGOs to educate the adolescents on responsible sex behaviours.
- Since most adolescents prefer getting their information concerning sex from their fellow peers, all the parties should make effort to train the adolescents in order to ensure that they give right information to each other.

Acknowledgements

We would like to offer respectful gratitude to Dr. Pyone Pyone Aung (Pro-Rector, Yangon University of Education) and Dr. Kay Thwe Hlaing (Pro-Rector, Yangon University of Education), for their administrative support during this study. We are most grateful to the headmasters/ headmistress, teachers and students from the scattered regions of Myanmar. We owe a lot of gratitude to the professors and experts in the Department of educational psychology in Yangon University of Education for the expert judgement and editing in developing research instrument. Finally, we would like to express our truthful gratitude to the president and all members of the Myanmar Academy of Arts and Science (MAAS), for their authorization to submit this research paper to the 20th Research Conference of MAAS.

References

- Berry, L., & Hall, K. (2009). *HIV & AIDS and STI National Strategic Plan 2007-2011: Multiple sexual partnerships*. Cape Town, South Africa: Children's Institute, University of Cape Town.
- Brewster, K. L., Cooksey, E. C., Guilkey, D. K., & Rindfuss, R. R. (1998). The changing impact of religion on the sexual and contraceptive behavior of adolescent women in the United States. *Journal of Marriage and Family*, 60 (2), 493-504.
- Burdette, A. M., & Hill, T. D. (2009). Religious involvement and transitions into adolescent sexual activities. *Sociology of Religion*, srp011.
- Diga, M., & Kelleher, T. (2009). Social media use, perceptions of decision-making power, and public relations roles. *Public Relations Review*, 35, 440–442.
- Edwards, L. M., Fehring, R. J., Jarrett, K. M., & Haglund, K. A. (2011). The influence of religiosity, gender, and language preference acculturation on sexual activity among Latino/a adolescents. *Hispanic Journal of Behavioral Sciences*, 30(4), 447-462.
- Gordon, R. G., Jr. (2005). "Languages of Myanmar". *Ethnologue: Languages of the World, Fifteenth edition*. SIL International.
- Gullone, E., & Moore, S. (2000). Adolescent risk-taking and the five factor model of personality. *Journal of Adolescence*, 23, 393- 407.

- Hagenhoff, C., Lowe, A., Hovell, M., & Rugg, D. (1987). Prevention of the teenage pregnancy epidemic: a social learning theory approach. *Education and Treatment of Children*, 10(1), 67-83
- Haglund, K. A., & Fehring, R. J. (2010). The association of religiosity, sexual education, and parental factors with risky sexual behaviors among adolescents and young adults. *Journal of Religion and Health*, 49(4).
- Hull, S. J., Hennessy, M., Bleakley, A., Fishbein, M., & Jordan, A. (2011). Identifying the causal pathways from religiosity to delayed adolescent sexual behavior. *Journal of sex research*, 48(6), 543-553.
- Kapoor, K. K., Tamilmani, K., Rana, N. P., Patil, P., Dwivedi, Y. K., & Nerur, S. (2017). Advances in Social Media Research: Past, Present and Future. *Information Systems Frontiers*, 1-28.
- Kershaw, T., Ethier, K., Niccolai, L., Lewis, J., & Ickovics, J. (2003). Misperceived risk among female adolescents: social and psychological factors associated with sexual risk accuracy. *Health Psychology*, 22(5), 523-532.
- King, J. E., & Williamson, I. O. (2010). Workplace religious expression, religiosity and job satisfaction: Clarifying a relationship. *Journal of management, spirituality & religion*, Vol.2, No.2, pp.173-198.
- Kotchick, B. A., Shaffer, A., Miller, K. S., & Forehand, R. (2001). Adolescent sexual risk behavior: A multi-system perspective. *Clinical Psychology Review*, 21(4), 493–519. doi:10.1016/S0272-7358(99)00070-7
- Lammers, C., Ireland, M., Resnick, M., & Blum, R. (2000). Influences on adolescents' decision to postpone onset of sexual intercourse: A survival analysis of virginity among youths aged 13 to 18 years. *Journal of Adolescent Health*, 26(1), 42-48.
- Lefkowitz, E. S., Gillen, M. M., Shearer, C. L., & Boone, T. L. (2004). Religiosity, sexual behaviors, and sexual attitudes during emerging adulthood. *Journal of Sex Research*, 41, 150–159
- Manlove, J. S., Terry-Humen, E., Ikramullah, E. N., & Moore, K. A. (2006). The role of parent religiosity in teens' transitions to sex and contraception. *Journal of Adolescent Health*, 39(4), 578-587.
- Mayer, J. D., & Salovey, P. (1990). *The intelligence of emotional intelligence*. *Intelligence*, 17(4), pp. 433-442.
- Meier, A. M. (2003). Adolescents' transition to first intercourse, religiosity, and attitudes about sex. *Social Forces*, 81(3), 1031–1052. doi:10.1353/sof.2003.0039.
- Miller, B., & Fox, G. (1987). Theories of adolescent heterosexual behavior. *Journal of Adolescent Research*, 2(3), 269-282.
- Miller, J. D., Lyman, D., Zimmerman, R. S., Logan, T. K., Leukefeld, C., & Clayton, R. (2004). The utility of the Five Factor Model in understanding risky sexual behavior. *Personality and Individual Differences*, 36, 1611- 1626. doi:10.1016/j.paid.2003.06.009
- Rosenberg, M. (1965). *Society and the Adolescent Self-Image*. Princeton, New Jersey: Princeton University Press.
- Rostosky, S. S., Regnerus, M. D., & Wright, M. L. C. (2003). Coital debut: The role of religiosity and sex attitudes in the Add Health Survey. *Journal of sex research*, 40(4), 358-367.
- Rostosky, S. S., Wilcox, B. L., Wright, M. L. C., & Randall, B. A. (2004). The impact of religiosity on adolescent sexual behavior: A review of the evidence. *Journal of Adolescent Research*, 19(6), 677-697.
- Stafstrom, M., & Agardh, A. (2012). Socio-economic determinants for alcohol consumption and heavy episodic drinking in a Ugandan student population. *Int J Alcohol Drug Res*, 1(1): 57–67.
- Thornton, A., & Camburn, D. (1989). Religious participation and adolescent sexual behavior and attitudes. *Journal of Marriage*.
- Vollrath, M., Knoch, D., & Cassano, L. (1999). Personality, risky behaviour and perceived susceptibility to health risks. *European Journal of Personality*; 13: 39-50.

AN INVESTIGATION INTO EMOTIONAL AUTONOMY OF ADOLESCENTS

Myint Sann¹ and Naing Naing Maw²

Abstract

The objective of this study was to examine emotional autonomy of adolescents from selected schools in Pyinmanar. The sample for this research included 252 adolescents (126 boys and 126 girls) aged range 13 to 17 years, from three basic education high schools. The measure used to access emotional autonomy of adolescents was UNIPA Emotional Autonomy Inventory (UNIPA-EAI) developed by Lo Cricchio, M., Lo Coco, A., Ingoglia, S., Liga, F., Di Maria, R., Inguglia, C., & Musso, P. (2016). 50 (19.84%) adolescents were at low level, 153 (60.71%) adolescents were at moderate level and the rest 49 (19.45%) adolescents were at high level in emotional autonomy. Based on the results, there was no significant association between emotional autonomy and gender ($\chi^2=2.504$, $df=1$, $p=.286$) but there was significant difference of emotional autonomy between male students and female students at moderate level in this study. Although there was no significant association between emotional autonomy and age ($\chi^2=1.735$, $df=4$, $p=.7840$), mean score for emotional autonomy of adolescents concerning with 15 years aged group was the highest. Moreover, there was no significant association between emotional autonomy and number of siblings ($\chi^2=5.270$, $df=4$, $p=.261$) and the highest mean score of emotional autonomy can be possessed by adolescents with small number of siblings. There was no significant association between emotional autonomy and birth order ($\chi^2=9.773$, $df=6$, $p=.135$) and the highest mean score of emotional autonomy can be seen at the eldest born children. Moreover, there was no significant association between emotional autonomy and family structure ($\chi^2=1.128$, $df=2$, $p=.569$). Number of adolescents from nuclear families was greater than that of extended families but the highest mean score could be clutched by adolescents from extended families in this study.

Keywords: adolescence, adolescents, emotional autonomy

Introduction

Importance of the Study

All higher order mammals have a need to master their environment. In humans it has been argued that this need is manifested in the feelings of autonomous control over one's life (aWhite, 1959; Erikson, 1963; Deci and Ryan, 1985; Bandura 1994). Adolescence is a time when both positive and negative developmental trajectories begin to take shape.

Parents and others can help youths develop their sense of self-governance, responsibility, independence, and decision-making, which are together called autonomy. As parents and communities struggle to meet the demands of work and family, it is critical for adolescents to develop healthy self-governance of their behavior. The development of emotional autonomy during adolescence is an important stepping stone in the process towards true self-reliance and responsible decision making (Lambom and Steinberg, 1993). Without achievement of a reasonable degree of emotional autonomy, the adolescent can hardly be expected to achieve sense of identity (Grotevant and Cooper, 1986), mature heterosexual or peer relationship (Fuligni and Eccles, 1993) and confident pursuit of a vocation (Guay et al. 2003; Guay, 2005). Emotional autonomy was found to play an important role in the overall achievement of adolescent independence from the family (Steinberg, & Silverberg, 1986; Fuhrman, & Holmbeck, 1995; Kumru, & Thompson, 2003; Sandhu, 2004). According to these facts, this theme was to be chosen to research.

¹ Associate Professor, Department of Educational Psychology, Yangon University of Education

² Dr, Professor/ Head, Department of Educational Psychology, Yangon University of Education

Purpose of the Study

The purpose of this study is to investigate emotional autonomy of adolescents from selected schools in Pyinmanar. Specific Objectives are as follows;

- To explore adolescents' emotional autonomy by gender and age
- To inquire adolescents' emotional autonomy by number of siblings, birth order and family structure

Definitions of Key Terms

Adolescence: Adolescence is the transition period between childhood and early adulthood.

(Rosenberg.E.L, 2012)

Adolescent: Individuals who is beginning at about age 11 or 12 and lasting until around age 18. (Rosenberg.E.L, 2012)

Emotional Autonomy: Adolescent's relinquishing of childish dependencies and conceptualization of their parents and replacing them with more mature perceptions about them (Steinberg and Silverberg, 1999).

Method

Research Design

Quantitative data analysis and Questionnaire survey method were used in this study.

Participants

The participants for the study were chosen from schools located in Pyinmanar region by using a convenient random sampling method. 84 students from each high school in Myoma, Taungkagui and B.E.H.S (1) Pyinmanar. Therefore, 252 adolescents (126 male students and 126 female students) participated in this study.

Instrument

The present study was to explore the emotional autonomy of adolescents. UNIPA Emotional Autonomy Inventory (UNIPA-EAI) developed by Lo Cricchio, M., Lo Coco, A., Ingoglia, S., Liga, F., Di Maria, R., Inguglia, C., & Musso, P. (2016) was used. There are four scales: self-recognition, recognition of the relationship with parents, willingness to dialogue and control dimensions. Total 66 items were combining with 56 positive items and 10 negative items in this survey questionnaire. Participants respond to each item through a five point Likert type instrument with five response options: strongly agree, agree, undecided, disagree, and strongly disagree. The factors of emotional autonomy and screening items for each are as follows. Self-recognition was assessed by 29 items, Recognition of the Relationship with Parents by 12 items, Willingness to Dialogue by 13 items and Control Dimensions by 12 items respectively. Self-recognition of adolescents can be observed by collecting facts from four aspects: differentiation, individuation, susceptibility to parental influence and volitional functioning. Recognition of the relationship with parents consists of two parts such as parents as models and parents as guides. To assess Willingness to dialogue, disposition to negotiate and stating own reasons would be considered. The last portion, control dimensions, would be estimated by opposition and idealization.

Procedure

All the items in the study were adapted to Myanmar version. After preparing the items for this questionnaire, expert review was conducted for content validity by 12 experts (9 experts from Department of Educational Psychology and 3 experts are two retired professors and a retired lecturer who have special knowledge and close relationship with the field of Educational

Psychology. After conducting the expert review, items were revised in length and wording during preliminary administration. The pilot study was done with a sample of students from No.(6) B.E.H.S, Ahlone in Yangon to test whether the wording of items, statements and instructions had comprehensiveness or not. The internal consistency (Cronbach's Alpha) of this Emotional Autonomy Questionnaire was 0.782.

Data Analysis and Findings

The purpose of this study was to explore the adolescents' emotional autonomy of adolescents from selected schools in Pyinmanar. By using the statistical analysis, findings and results were discussed in the following sections.

Measures of Adolescents' Emotional Autonomy from Selected Schools

To identify adolescents' emotional autonomy, the mean value, mean percentage and standard deviation were carried out and the results were presented in Table 1.

Table 1 Descriptive Statistics for Adolescents' Emotional Autonomy

Variable	N	Min	Max	Mean	Mean%	SD
Adolescents' EA	252	159	284	227.78	69.02	19.487

Note: Mean%= Mean Percentage, SD= Standard Deviation, EA= Emotional Autonomy

By using the data obtained from selected schools in Pyinmanar, adolescents' emotional autonomy could be investigated. According to the result in Table 1, the mean percentage of adolescents' emotional autonomy was 69.02%. Thus, adolescents' emotional autonomy is satisfactory level and it was not be so good. They will able to manage themselves suitably on their own without constant support from their parents while making their decisions and solving their problems.

Table 2 Descriptive Statistics for Subscales of Adolescents' Emotional Autonomy

Subscales	Min	Max	Mean	Mean%	SD
SR	61	117	89.44	61.68	8.627
RWP	20	60	48.02	80.03	6.829
WD	22	64	47.93	73.74	6.765
CD	21	60	42.39	70.65	6.584

SR = Self-recognition

RWP = Recognition of the Relationship with Parents

WD = Willingness to Dialogue

CD = Control Dimensions

According to the result in Table 2, the mean percentages for subscales of adolescents' emotional autonomy were 61.68, 80.03, 73.74 and 70.65 respectively. Among these subscales of adolescents' emotional autonomy, the mean percentage of recognition of the relationship with parents was the highest and that of self-recognition was the lowest. Recognition of the relationship with parents of adolescents who participated in this study was the highest because of our society is collaborative and adolescents use their parents as a secure base from which they can confidently explore the world. The result of the survey was consistent with the results of Noom et al., 2001; Steinberg and Silk, 2002; Silk et al., 2003; Sroufe, 2005. The mean percentage of self-recognition was the lowest so they didn't have precisely criticism themselves as an individualized person.

Measures of Adolescents' Emotional Autonomy Level from Selected Schools

Levels of emotional autonomy of adolescents had been classified by **P₂₀** and **P₈₀**. The 20th percentile and 80th percentile are 213.6 and 244. Therefore, above 244 group for overall scores of adolescents' emotional autonomy was high level, between 214 and 244 scores group

was moderate level and under 214 scores group was low level were assigned. The numbers of adolescents in each level of emotional autonomy in this study were presented in Table 3. From different groups of emotional autonomy for adolescents, 50 (19.84%) adolescents were at low level, 153 (60.71%) adolescents were at moderate and the rest 49 (19.45%) adolescents were at high level in emotional autonomy.

Table 3 Table Showing the Number of Adolescents in Each Level of Emotional Autonomy

66 items - 66*5= 330		
Low	Moderate	High
Under 214 (50 Adolescents)	214 - 244 (153 Adolescents)	Above 244 (49 Adolescents)
Maximum = 284, Minimum = 159		

Comparison of Adolescents' Emotional Autonomy by Gender

A chi-square test was conducted to explore whether there is an association between level of emotional autonomy and gender. The result was presented in Table 4. Based on the result, there was no significant association between emotional autonomy and gender ($\chi^2 = 2.504$, $df = 1$, $p = .286$). Hence, there is no statistically significant association between Gender and level of emotional autonomy; that is, both males and females had a chance of possession for each levels of emotional autonomy.

To compare adolescents' emotional autonomy in low, moderate and high level by gender, independent sample *t*- test was conducted and the data were presented in Table 5. Male students' mean scores of emotional autonomy at low and moderate level were higher than those of females but the mean score for emotional autonomy of female students at high level was greater than that of males in this study.

Table 4 Result of Chi-squares Test for Association between Level of Emotional Autonomy and Gender

Level of EA	Gender		Total	χ^2	<i>p</i>
	Male	Female			
Low	30	20	50	2.504	.286
	60.0 %	40.0 %	100 %		
Moderate	73	80	153		
	47.7%	52.3%	100 %		
High	23	26	49		
	46.9%	53.1%	100 %		

There was significant difference of emotional autonomy between male students and female students at moderate level. This result is matched with the finding of Coleman (1961); Douvan and Adelson (1966). Emotionally autonomous persons are more self-reliant and they are more able to look for their own solutions or ask friends or adults outside the family for support rather than relying only on parents.

Table 5 Mean Comparison for Adolescents' Emotional Autonomy in Low, Moderate and High Level by Gender

Level of EA	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
Low	Male	30	201.93	12.682	.430	.669
	Female	20	200.35	12.889		
Moderate	Male	73	229.52	8.617	2.172	.031
	Female	80	226.34	9.433		
High	Male	23	252.70	6.799	-1.283	.206
	Female	26	256.19	11.395		

Note: N= Number, SD = Standard Deviation

Comparison of Adolescents' Emotional Autonomy by Age

There is some possibility that adolescents' emotional autonomy could be different according to their age. A chi-square test was conducted to explore whether there is an association between level of emotional autonomy and age. The results were presented in Table 6. Based on the result, there was no significant association between emotional autonomy and age ($\chi^2 = 1.735$, $df = 4$, $p = .784$). The results showed that there is no statistically significant association between age and level of emotional autonomy; that is, different age groups had a chance of possession for suitable levels of emotional autonomy.

Table 6 Result of Chi-squares Test for Association between Level of Emotional Autonomy and Age

Level of EA	Age Group			Total	χ^2	<i>p</i>
	Under 15 yrs	15 yrs	Over 15 yrs			
Low	19	17	14	50	1.735	.784
	38.0%	34.0%	28.0%	100%		
Moderate	61	54	38	153		
	39.9%	35.3%	24.8%	100%		
High	24	15	10	49		
	49.0%	30.6%	20.4%	100%		

According to the result, there is no obvious difference at emotional autonomy of adolescents in different ages. To compare adolescents' emotional autonomy in low, moderate and high level by age, one way analysis of variance (ANOVA) was conducted and the data were presented in Table 7.

Table 7 Mean Comparison for Adolescents' Emotional Autonomy in Low, Moderate and High Level by Age

Level of EA	Age	N	Mean	SD	<i>F</i>	<i>p</i>
Low	Under 15 yrs	19	199.53	11.350	.775	.466
	15 yrs	17	204.41	13.389		
	Over 15 yrs	14	199.93	12.658		
Moderate	Under 15 yrs	61	228.87	8.728	.734	.482
	15 yrs	54	226.80	9.470		
	Over 15 yrs	38	227.74	9.466		
High	Under 15 yrs	24	253.50	10.147	1.839	.170
	15 yrs	15	258.27	10.222		
	Over 15 yrs	10	251.50	5.318		

According to the results, mean score for emotional autonomy of adolescents concerning with 15 years aged group was the highest but emotional autonomy of adolescents concerning with over 15 years age group slightly decrease. During this time, teenagers begin to see their parents as human, and to take more and more responsibility for their own choices and actions. Often there are more conflicts at over 15 years aged group with their parents because adolescents want more independence and parents want more closeness and communication. Because of this conflict, their emotional autonomy concerning with these groups would be decreased.

Comparison of Adolescents' Emotional Autonomy by Number of Siblings

There is some possibility that adolescents' emotional autonomy could be different according to number of siblings. A chi-square test was conducted to explore whether there is an association between area of emotional intelligence and age. The result was presented in Table 8. Based on the result, there was no significant association between emotional autonomy and number of siblings ($\chi^2 = 5.270$, $df = 4$, $p = .261$). It was found that there is no statistically significant association between number of siblings and level of emotional autonomy; that is, different sibling groups had a chance of possession for each levels of emotional autonomy.

Table 8 Result of Chi-squares Test for Association between Level of Emotional Autonomy and Number of Siblings

Level of EA	Number of Siblings			Total	χ^2	p
	Small	Median	large			
Low	29	14	7	50	5.270	.261
	58.0%	28.0%	14.0%	100%		
Moderate	79	59	15	153		
	51.6%	38.6%	9.8%	100%		
High	19	23	7	49		
	38.8%	46.9%	14.3%	100%		

In order to test whether there was significant difference in adolescents' emotional autonomy in low, moderate and high level by number of siblings, one way analysis of variance (ANOVA) was conducted.

Table 9 Mean Comparison for Adolescents' Emotional Autonomy in Low, Moderate and High Level by Number of Siblings

Level of EA	Number of Siblings	N	Mean	SD	F	p
Low	Small	29	202.31	10.072	.607	.614
	Median	14	197.14	17.226		
	Large	7	205.43	11.267		
Moderate	Small	79	226.43	8.818	2.178	.117
	Median	59	229.07	9.434		
	Large	15	230.60	9.164		
High	Small	19	255.37	8.795	.135	.874
	Median	23	254.26	11.307		
	Large	7	253.29	5.499		

There was no significant difference in adolescents' emotional autonomy by number of siblings and the results were presented in Table 9. According to the results, the highest mean score of emotional autonomy can be possessed by adolescents with small number of siblings.

Comparison of Adolescents' Emotional Autonomy by Birth Order

There is some possibility that adolescents' emotional autonomy could be different according to birth order.

Table 10 Result of Chi-squares Test for Association between Level of Emotional Autonomy and Birth Order

Level of EA	Birth Order				Total	χ^2	p
	Eldest	Middle	Youngest	Only Child			
Low	22	7	15	6	50	9.773	.135
	44.0%	14.0%	30.0%	12.0%	100%		
Moderate	49	36	59	9	153		
	32.0%	23.5%	38.6%	5.9%	100%		
High	18	16	12	3	49		
	36.7%	32.7%	24.5%	6.1%	100%		

A chi-square test was conducted to explore whether there is an association between area of emotional autonomy and birth order. The results were presented in Table 10. Based on the result, there was no significant association between emotional autonomy and birth order ($\chi^2 = 9.773$, $df = 6$, $p = .135$). The result reported that there is no statistically significant association between number of siblings and level of emotional autonomy; that is, adolescents having different birth order had a chance of possession for suitable levels of emotional autonomy.

In order to test whether there was significant difference in adolescents' emotional autonomy in low, moderate and high level by birth order, one way analysis of variance (ANOVA) was conducted. The results were presented in Table 11. According to the results, the highest mean score of emotional autonomy can be seen at the eldest born children. Adolescents with large number siblings possessed high emotional autonomy at low and moderate level. Close relationship with sibling serves as a way for adolescents to remain connected to the family, while in the process of individuality from dependent on parents.

Table 11 Mean Comparison for Adolescents' Emotional Autonomy in Low, Moderate and High Level by Birth Order

Level of EA	Birth Order	N	Mean	SD	F	p
Low	Eldest	22	199.09	12.976	.607	.614
	Middle	7	202.86	10.823		
	Youngest	15	201.67	14.695		
	Only Child	6	206.67	7.607		
Moderate	Eldest	49	228.00	8.537	.752	.523
	Middle	36	229.58	9.967		
	Youngest	59	226.68	8.976		
	Only Child	9	227.89	10.752		
High	Eldest	18	257.67	11.183	1.040	.384
	Middle	16	252.38	5.488		
	Youngest	12	252.83	11.582		
	Only Child	3	254.33	6.028		

Comparison of Adolescents' Emotional Autonomy by Family Structure

There is some possibility that adolescents' emotional autonomy could be different according to family structure. A chi-square test was conducted to explore whether there is an association between emotional autonomy and family structure. The results were presented in

Table 12. Based on the result, there was no significant association between emotional autonomy and family structure ($\chi^2 = 1.128$, $df = 2$, $p = .569$).

Table 12 Result of Chi-squares Test for Association between Level of Emotional Autonomy and Family Structure

Level of EA	Family Structure		Total	χ^2	p
	Nuclear	Extended			
Low	24	26	50	1.128	.569
	48.0%	52.0%	100%		
Moderate	71	82	153		
	46.4%	53.6%	100%		
High	27	22	49		
	55.1%	44.9%	100%		

The result indicated that there is no statistically significant association between family structure and level of emotional autonomy; that is, both nuclear and extended families had a chance of possession for suitable levels of emotional autonomy. To examine the differences in adolescents' emotional autonomy in low, moderate and high level by family structure, independent sample *t*- test was conducted and the data were presented in Table 13.

Table 13 Mean Comparison for Adolescents' Emotional Autonomy in Low, Moderate and High Level by Family Structure

Level of EA	Family Structure	N	Mean	SD	<i>t</i>	<i>p</i>
Low	Nuclear	25	201.52	13.235	.122	.904
	Extended	25	201.08	12.322		
Moderate	Nuclear	71	227.62	8.672	-.296	.768
	Extended	82	228.06	9.617		
High	Nuclear	27	253.30	8.543	-1.015	.315
	Extended	22	256.09	10.734		

Note: N= Number, SD = Standard Deviation

Number of adolescents from nuclear families was greater than that of extended families but the highest mean score could be clutched by adolescents from extended families in this study. There was no significant difference in emotional autonomy between adolescents from nuclear and extended families.

Discussion

The present study was to explore the emotional autonomy of adolescents. UNIPA Emotional Autonomy Inventory (UNIPA-EAI) developed by Lo Cricchio, M., Lo Coco, A., Ingoglia, S., Liga, F., Di Maria, R., Inguglia, C., & Musso, P. (2016) was used. There are four scales: self-recognition, recognition of the relationship with parents, willingness to dialogue and control dimensions. Findings of this study may support adolescents with aged range 13 to 17 years and the mean percentages for subscales of adolescents' emotional autonomy were 61.68, 80.03, 73.74 and 70.65 respectively. Among these subscales of adolescents' emotional autonomy, the mean percentage of recognition of the relationship with parents was the highest because of our society is collaborative so people are more cooperative and interdependent rather than competitive and independent. Their identities are closely tie to the groups to which they belong (for example families, religious organizations and communities), rather than to their own accomplishments and characteristics. The mean percentage of self-recognition was the lowest so they didn't have precisely criticism themselves as an individualized person.

Conclusion

There are some limitations in this study. Participants were 252 adolescents at grade seven, grade eight and grade nine from selected schools by using simple random sampling method. This could also be taken as limitation. The participants had to response the questionnaire with 66 items and it was very tiring to answer. Moreover, some specific words in questionnaire might be difficult to understand and some items can be undecided.

The sample in this research was adolescents from three Basic Education High School in Pyanmanar. This study was originally intended to measure emotional autonomy of adolescents. The similar studies can be done with adolescents from other grades, other schools and university students from different regions. Besides, there are many other variables which are related to emotional autonomy for example, academic achievement, psychosocial adjustment, problem behavior, perception of relationship with their parents, etc. Other demographic variables should also be considered to conduct future researches. Moreover, longitudinal study should be extended to explore changes of adolescents' emotional autonomy.

Acknowledgement

I would like to acknowledge and extend my heartfelt gratitude to the following persons who gave me directly or indirectly throughout my small scale research. First of all, I would like to express my first and foremost gratitude to Dr. Pyone Phone Aung and Dr. Kay Thwe Hlaing, Pro-rectors of Yangon University of Education. Besides, I am particularly grateful to the members of PhD course supervising committee who allowed me to write this paper. I would like to offer my respectful gratitude to Dr. Khin Zaw (Retired Rector, Yangon Institute of Education), for his valuable guidance, comments and remarkable assessment as the external examiner.

My special thanks are dedicated to Dr. Naing Naing Maw (Professor & Head of Educational Psychology Department, Yangon University of Education) for her expert guidance, encouragement, and valuable and timely advice to complete this study. Especially, I am most grateful for her enormous guidance from the initiation to the completion of this paper, endless encouragement and timely advice, expert judgments, kindly editing and reviewing of my paper. I am greatly indebted to Dr. Daw San Win (Professor of Educational Psychology Department, Yangon University of Education) for their expert advice, expert judgment, invaluable comments and assess this paper systematically.

I am also proudly grateful to all my colleagues from Educational Psychology Department, Yangon University of Education for their kindness and patience and the librarians and staff of Yangon University of Education for their necessary help in carrying out this research. My special appreciation goes to the Headmaster and Headmistresses for their permission to conduct in their schools and then, to the students who involved in this study for their cooperation. Finally, I wish to send my gratitude and warmest appreciations to my beloved persons who encourage for writing this small scale research.

References

- Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Eds.), *Encyclopedia of human behavior*, New York
- Coleman, J. (1961). *The adolescent society*. New York: Free Press.
- Deci, E. L. and Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Erikson, E. (1963). *Childhood and Society*. Norton, New York. family. *Journal of Adolescence*, 19 (3), 277-291
- Fuhrman, T. and Holmbeck, G. (1995). A contextual moderator analysis of emotional autonomy and adjustment in adolescence. *Child development*, 66, 793–811.
- Fuligni, A. J. and Eccles, J. S. (1993). Perceived parent-child relationships and early adolescents' orientation towards peers. *Developmental Psychology*, 29, 622-632.
- Gray, M. R. and Steinberg, L. (1999). Unpacking authoritative parenting: Reassessing a multidimensional construct. *Journal of Marriage and the Family*, 61, 574-587.
- Lamborn, S. D. and Steinberg, L. (1993). Emotional autonomy redux: Revisiting Ryan and Lynch. *Child Development*, 64, 483-499. multidimensional construct. *Journal of Marriage and the Family*, 61, 574- 587.
- Steinberg, L. and Silverberg, S. (1986). The vicissitudes of autonomy in early adolescence. *Child Development*, 57, 841-851.

A STUDY ON MIDDLE SCHOOL STUDENTS' MOTIVATION TOWARDS SCIENCE LEARNING

Aye Chan Myat Phyoe¹, Nilar Win²

Abstract

The main purpose of this study was to investigate motivation towards science learning of middle school students. Data were collected through questionnaires to find out science learning motivation of students. In order to find out science learning motivation of middle school students, Students' Motivation Towards Science Learning Questionnaire (SMTSL) developed by Tuan, Chin and Shieh (2005) was used as a research instrument. Two Basic Education High Schools from Yangon were purposefully selected for this study. A total 120 of Grade seven and Grade eight students (60 males and 60 females) participated in this study. The required sample was selected by using random sampling technique. The result of *t*-test showed that there were no significant differences in students' motivation towards science learning both by gender and by school. However, there was significant difference in students' motivation towards science learning by grade. It was found that Grade Eight students possess higher science learning motivation than Grade Seven students.

Keywords: Motivation Towards Science Learning, Self-efficacy, Task Value, Achievement Goals.

Introduction

In this twenty-first century, the future of Myanmar lies in knowledge. The nation cannot be modernized without a basis understanding of scientific concepts. Therefore, the students are in dire need of acquiring adequate scientific knowledge and skills in order to cope with, make sense and be part of the rapidly increasing scientific and technological advancements. It is undeniable that good science education in schools is a vital preparation for scientific literacy in later life.

The goal of science education is to enhance all students' scientific literacy than is to help students grasp essential science concepts, to understand the nature of science, to realize the relevance of science and technology to their lives, and to willingly continue their science study in school, or beyond school. In science class, there are many unique features highlighting the value of science learning, such as problem-solving, science inquiry, thinking and the relevance of science knowledge in students' daily lives. In constructivist learning of science, students take an active role interacting with the environment, they also try to find resources to help them understand concepts. Moreover, learning motivation is an essential influence component in science learning because motivation drives behavior and is a powerful influence in the classroom. There are ways to recognize a learner's level or state of motivation, including observing which task the learners choose on their own, looking at how much effort they put forth in a given task, and their level of persistence. High levels of motivation will increase persistence, enhance cognitive processes, and lead to improved performance.

A motivated learner acquires what he learns more readily than one who is not motivated. Moreover, it can be cautioned that excessive motivation may be less effective than moderate motivation for learning some kinds of tasks especially those involving different discriminations. In fact, intense motivation such as pain, fear and anxiety may be accompanied by distracting emotional states. Correspondingly, learning under the control of reward is usually preferable to learning under the control of punishment. To sum up, learning motivated by success is preferable to learning motivated by failure. To be specific, learning under intrinsic motivation is preferable to learning under extrinsic motivation. Moreover, Jarvela and Niemivirta (1992) described that

¹ Assistant Lecturer, Educational Psychology Department, Yangon University of Education

² Senior Assistant Teacher, Basic Education High School (Tha Yet Chaung), Tanintharyi State

one of the most significant preconditions of learning is the development and maintenance of learning motivation. According to the above description, it can be seen that learning motivation is important in science learning, hence, the present study emphasized learning motivation.

The Purpose of the Study

The major purpose of this study is to investigate middle school students' motivation towards science learning. The specific objectives are as follows.

- To examine the significant differences in science learning motivation by gender.
- To study the significant differences in science learning motivation by grade.
- To observe the significant differences in science learning motivation by school.

Definitions of Key Terms

Motivation is the process which instigates and sustains a goal directed activity (Pintrich & Schunk, 2002).

Learning Motivation is a student's willingness, need, desire and compulsion to participate in and be successful in the learning process (Brewster & Fager, 2002).

Motivation to Learn Science is defined as an internal state that arouses, directs, and sustains science-learning behavior (Cavas, 2011).

Review of Related Literature

Motivation is described as a state that energizes, directs and sustains behavior. Motivations also determine the specific goals toward which people strive; thus, it affects the choices students make. In social cognitive theory (Bandura, 2006), motivation is defined as an internal state that arouses, directs, and sustains goal-oriented behavior. This theory was designed to explain how people acquire competencies, attitudes, values, styles of behavior, and how they motivated and regulate their level of functioning. Motivated students achieve academically by engaging in behavior such as studying, question asking, advice seeking, and participating in classes, labs, and study groups (Schunk et al., 2008).

When students learn science, they should be encouraged to increase the desire to learn. In addition, McCombs and Whisler (1997) indicated that learning is a constructive process that occurs best when what is being learned relevant and meaningful to the learner and when the learner is actively engaged in creating his or her own knowledge and understanding by connecting what is being learned with prior knowledge. Some psychologists indicated that learning and motivation are so interrelated that no one fully understands learning without considering motivation (Eggen & Kauchak, 1992).

Motivation to Learn Science

Motivation to learn science is defined as an internal state that arouses, directs and sustains science-learning behavior, and promotes student construction of their conceptual understanding of science (Cavas, 2011). In studying the motivation to learn science, science education researchers attempt to explain why the students strive to learn science, how intense they strive, how long they strive and what beliefs, feeling, and emotions characterize them in this process (Bryan, Glynn & Kittleson, 2011).

Students' motivation in learning science was enhanced if the teacher made science concepts related to daily lives, provided hands on activities for students to manipulate, and created the opportunities for group discussion on the content (Hwang & Taun, 2001, cited in Khin Thuza Saw, 2007, p.18). Again, Talib, Luan, Azhar and Abdullah (2009) suggested that

teachers must learn to pose engaging, thought provoking questions to students. Questioning is an important craft to acquire as it is the door of knowledge.

Motivation Beliefs

Motivational beliefs refer to the opinions, judgments and values that students hold about objects, events or subject-matter domains. Motivational beliefs also refer to the student's opinion of the efficiency or effectiveness of learning and teaching methods. The important of motivational beliefs are self-efficacy, task value, interest, and achievement goals.

Self-efficacy

Self-efficacy refers to a person's belief in his/her ability to organize and execute a required course of action to achieve a desired result (Bandura, 1997). Self-efficacious students also recover quickly from setbacks, and ultimately are likely to achieve their successful and thus are less likely to make a concerted, extended effort and may consider challenging tasks as threats that are to be avoided. Thus, students with poor self-efficacy have low aspirations which may result in disappointing academic performances becoming part of a self-fulfilling feedback cycle (Margolis & McCabe. 2006).

Task Value

Task value is an imaginable or sometimes objectively measured worth of a task for completion of a project whereto it belongs. In other words, value of a task depends on a contribution that this task makes towards completion of its project. The most current research on the concept of perceived task value comes from expectancy- value theory and the work of Eccles and Wigfield (2002).

Achievement Goals

From a cognitive perspective, "motivation is the process whereby goal-directed activity is instigated and sustained" (Pintrich & Shunk, 1996). This can be better understood by learning achievement goal theory of motivation. Urdan and Maehr (1995) stated that achievement goal theory is less concerned with what individuals are trying to achieve and instead focuses more on understanding why.

Performance Goals

Performance goals orientation refers to the purpose of demonstrating competence. Performance-oriented students are concerned with others' perceptions of their competence and with their ability relative to others (Ames, 1992). According to this distinction, when pursuing performance-approach goals, the students is focused on attaining favorable judgments of competence, whereas when pursuing performance-avoidance goals the students is focused on avoiding unfavorable judgments of competence.

Active Learning Strategies

The term active learning means different thing to different people, while for some the very concept is redundant since it is impossible to learn anything passively. There are four basis activities through which all students learn, and specific active learning strategies use one or more of these elements. They are talking and listening, writing, reading, and reflecting.

Learning Environment Stimulation

Learning environment refers to an environment or perceived by teachers that supports positive learning outcomes. Creating and implementing a learning environment means careful planning for the start of the school year. The learning environment must be envisioned in both a physical space and a cognitive space. The physical space of the classroom is managed as the

teacher prepares the classroom for the students. Teachers must also consider the cognitive space necessary for a learning environment. This cognitive space is based upon the expectations teachers set for students in the classroom and the process of creating a motivational climate (Evertson, 1985). Motivation is defined in social cognitive theory as an internal state that arouses, directs, and sustains goal-oriented behavior. Motivated students achieve academically by engaging in behavior such as studying, question asking, advice seeking, and participating in classes, labs, and study groups (Schunk et al., 2008).

Method

The main purpose of the study is to investigate middle school students' motivation towards science learning. In this chapter, sampling, research design and method, instrumentation, and data collection procedures are identified.

Sample of the Study

A total of 120 students participated in this study. Among the sample, 50% (60) of participants were males and 50% (60) were females. Detailed lists of participants were presented in the following table 1.

Table 1 Number of Participants in Each Selected School

School 1	Grade Seven	Male	15
		Female	15
	Grade Eight	Male	15
		Female	15
School 2	Grade Seven	Male	15
		Female	15
	Grade Eight	Male	15
		Female	15
Total			120

Research Design and Method

In this study, descriptive research design and quantitative survey method were used.

Instrumentation

In order to find out science learning motivation of middle school students, Students' Motivation Towards Science Learning Questionnaire (SMTSL) developed by Tuan, Chin and Shieh (2005) was used. It comprised 35 items assessing six variables such as self-efficacy, active learning strategies, science learning value, performance goal, achievement goal and learning environment stimulation. Each subscale of the instrument was coded by using a five-point Likert scale, with 1 = "strongly disagree" to 5 = "strongly agree".

Data Analysis and Results

By using the descriptive procedure with the data obtained from the Students' Motivation Towards Science Learning Questionnaire (SMTSLQ), self-efficacy, active learning strategies, science learning value, performance goal, achievement goal and learning environment stimulation of Grade Seven and Grade Eight students were examined at two basic education high schools. In addition, differences by gender, grade and school were investigated. Firstly, descriptive statistics for each scale was computed. Next, independent *t*-test was computed to determine statistically significant differences according to gender, grade and school. Finally, using the statistical analysis, findings and results were discussed in the following sessions.

Findings of Middle School Students' Motivation Towards Science Learning

To investigate Grade Seven and Grade Eight students' motivation towards science learning, descriptive statistics was carried out and the results were shown in table 2.

Table 2 Descriptive Statistics for Students' Motivation Towards Science Learning

Subscales of Science Learning Motivation	No. of items	N	Mean	SD
Self-efficacy	7	120	22.31	3.26
Active learning strategies	8	120	15.08	3.89
Science learning value	5	120	9.19	2.3
Performance goal	4	120	10.4	2.69
Achievement goal	5	120	11.47	3.8
Learning environment stimulation	6	120	10.36	2.98
Total	35	120	78.44	13.29

Note: SD = standard deviation

Since the numbers of items included in each subscales of students' motivation towards science learning were not the same, the mean scores were transferred to the corresponding mean percentages. According to the results shown in table 2, the mean score for the self-efficacy factor among the sub-scales of students' motivation towards science learning was the highest. The mean score for performance goal was the second highest. The mean score for learning environment stimulation was the lowest. The visual presentation was shown in figure 1.

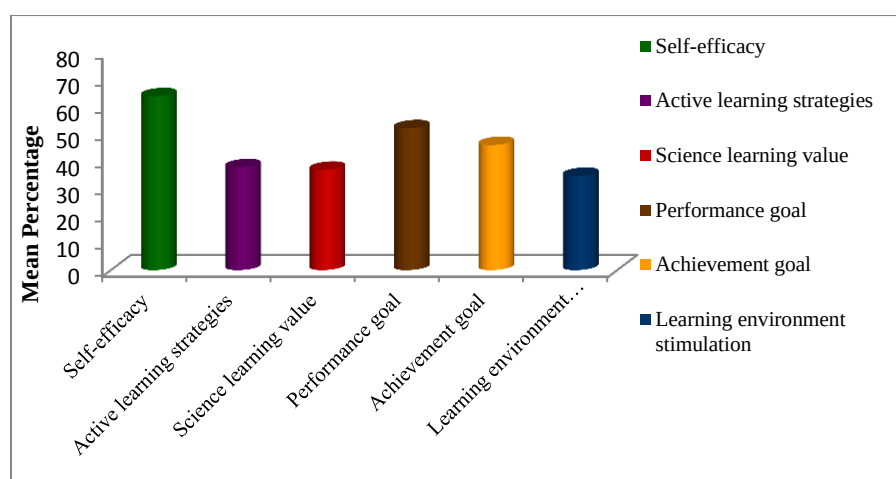


Figure 1 Comparisons of Mean Percentage for Middle School Students' Motivation Science Learning

Science Learning Motivation Level of Students

Based on descriptive analyses of science learning motivation, middle school students in this study were identified into three groups: 30.83% of students with scores one standard deviation above the sample mean were considered high group; 56.66% of students with scores between (+1) and (-1) standard deviation from the sample mean were grouped into moderate group; and the remaining students of 12.5% who scored one standard deviation lower than the sample mean were identified as low group.

Comparisons of Middle School Students' Motivation Towards Science Learning by Gender

To find out the differences in students' motivation towards science learning with regard to gender, descriptive statistics and *t* test were applied. The mean values of male and female students for students' motivation towards science learning were reported in Table 3.

Table 3 Results of Independent Sample *t* test for Middle School Students' Motivation Towards Science Learning by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
Science Learning Motivation	Male	60	79.03	12.01	-0.06	0.955
	Female	60	79.15	10.49		

To explore whether the mean differences were significant or not, independent *t*-test was calculated. The result of *t* test showed that there were no significant differences in students' motivation towards science learning by gender. Thus, it can be said that middle school students' motivation towards science learning was not influenced by gender. Visual presentation of the results was shown in Figure 2.

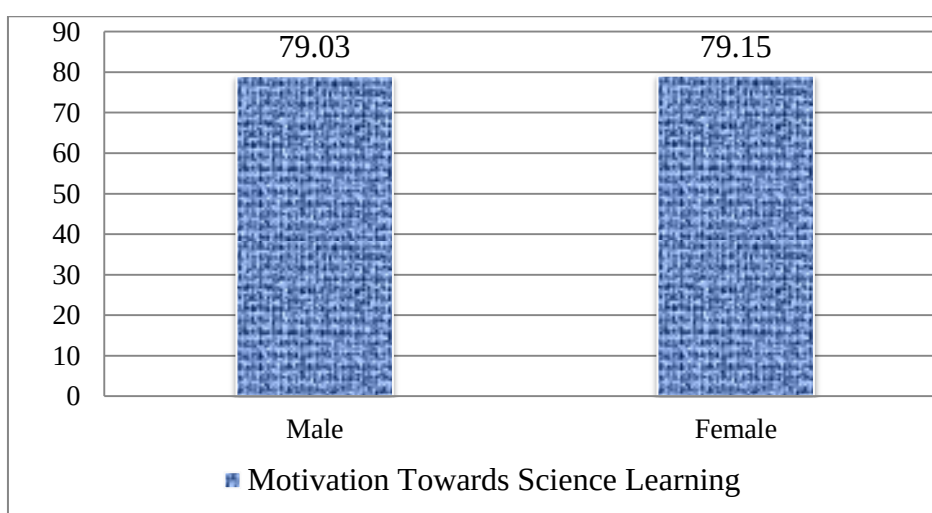


Figure 2 Mean Comparisons of Middle School Students' Motivation Towards Science Learning by Gender

Mean Comparisons for Each Subscale of Middle School Students' Motivation Towards Science Learning by Grade

The participants of this study were selected from Grade Seven and Grade Eight. Descriptive statistics were conducted in order to find out the mean differences between grades in students' learning motivation. The analyses revealed that there were slightly differences in mean scores by grade.

Table 4 Results of Independent Sample *t* test for Middle School Students' Motivation Towards Science Learning by Grade

Variable	Grade	N	Mean	SD	<i>t</i>	<i>p</i>
Science Learning Motivation	Grade Seven	60	76.53	11.13	-2.55*	0.012
	Grade Eight	60	81.65	10.82		

Note: * $p < 0.05$

According to the results of *t* test, it was found that there was significant difference between Grade Seven and Grade Eight students in science learning motivation at 0.05 level. It can reasonably be concluded that Grade Eight students possess higher science learning motivation than Grade Seven students. Visual presentation of the results was also shown in Figure 3.

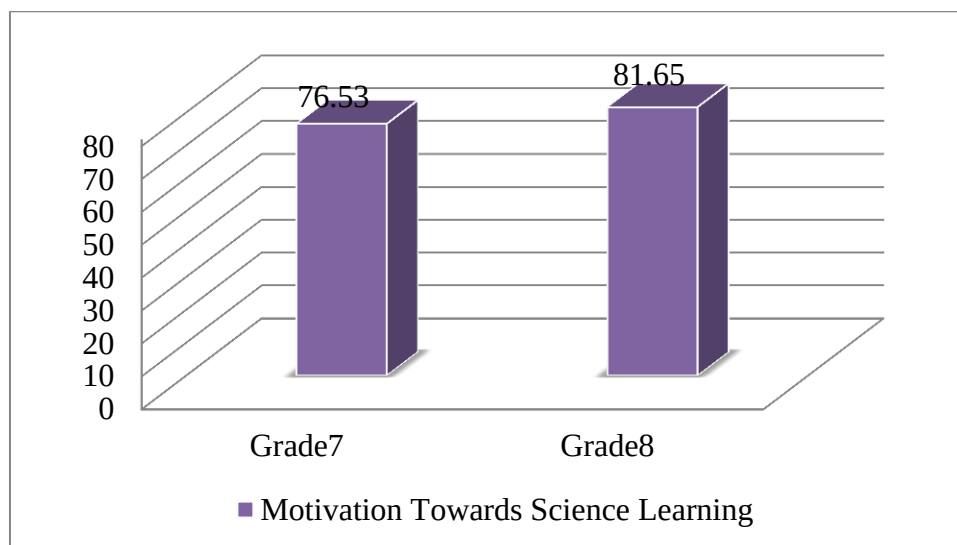


Figure 3 Mean Comparisons of Middle School Students' Motivation Towards Science Learning by Grade

Mean Comparisons for Each Subscale of Middle School Students' Motivation Towards Science Learning by School

The participants in this study were selected from two basic education high schools (School (1) and School (2)). Therefore, to find out the differences in science learning motivation with regard to schools, descriptive and *t* test were calculated. The results were mentioned in the following Table 5.

Table 5 Results of Independent Sample *t* test for Middle School Students' Motivation Towards Science Learning by School

Variable	School	N	Mean	SD	<i>t</i>	<i>p</i>
Science Learning Motivation	School(1)	60	78.67	10.36	-.413	0.68
	School(2)	60	79.52	12.10		

According to the results of Table 5, the mean scores of selected School (2) were higher than selected School (1). But, there was no significant difference in students' motivation towards science learning by school. Visual presentation of the results was also shown in Figure 4.

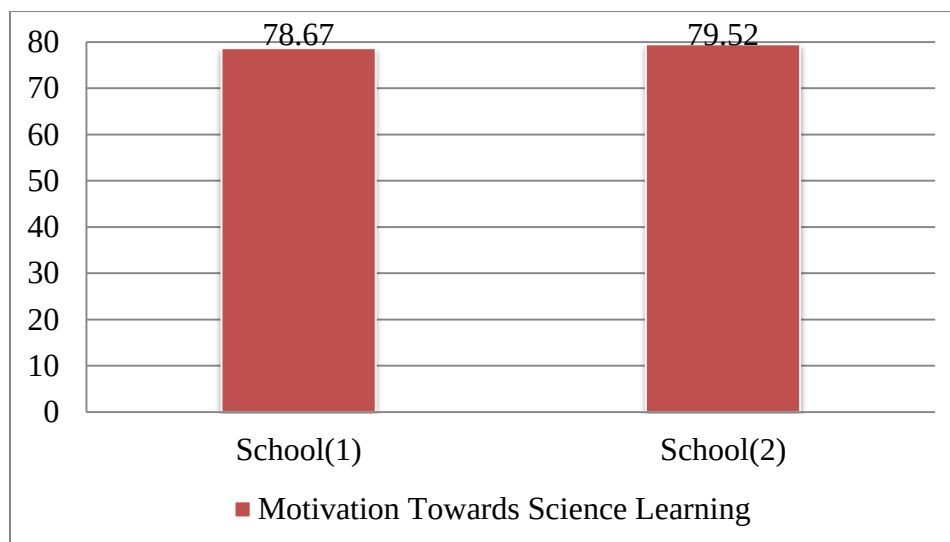


Figure 4 Mean Comparisons of Middle School Students' Motivation Towards Science Learning by School

Conclusion

Conclusion and Discussion

This study was an attempt to investigate middle school students' motivation towards science learning. Therefore, the researcher conducted an investigation by using the quantitative research methods. As a sample, a total of 120 Grade Seven and Grade Eight students from Yangon City Development Area were selected. Students' Motivation Towards Science Learning Questionnaire (SMTSL) developed by Tuan, Chin and Shieh (2005) was used. Students' science learning motivation inventory containing 35 items were adapted to make the respondents comfortable in responding to this inventory. The participants responded on a 5-point Likert scale by ticking each statement in the questionnaire.

Based on the responses from the Students' Motivation towards Science Learning Questionnaire, the mean and standard deviation for the whole sample were 78.44 and 44.82. When the mean score of six factors; self-efficacy, active learning strategies, science learning value, performance goal, achievement goal, learning environment stimulation were compared, the mean score for the self-efficacy factor was the highest among the other sub-scales of students' motivation towards science learning. The mean score for performance goal was the second highest. The mean score for learning environment stimulation was the lowest.

Based on the descriptive analyses, the participants in this study were identified into three groups according to their levels of science learning motivation. 30.83% of students contain in high level of science learning motivation. 56.66% of students were identified as moderate group. In the low group, there were 12.5% of students in this study. This finding may help educators to understand that the students were moderately motivated in learning science and educators may be persuaded to think of solutions to raise students' motivation.

Although the mean scores are slightly different, the result of *t* test showed that there were no significant differences in students' motivation towards science learning by gender. This result indicates no statistically significant effect on students' motivation towards science learning based on gender. This result is also consistent with Bawaneh, Zain and Salmiza (2011), Baz and Bawaneh (2008), Nawafleh (2008) and Obeidat (2000) and Bawaneh, Zain, Saleh and Abdullah (2012).

There was significant difference in students' motivation towards science learning by grade. It can reasonably be concluded that the higher the grade level of students, the higher motivation towards science learning they possess. This result is also inconsistent with that of Güvercin, Tekkaya and Sungur' study in which student "motivation towards science learning declined as the grade level increased.

According to the result, there was also no significant difference in students' motivation towards science learning by school. According to the findings of the study, it means both schools were equally contributed to the motivation towards science learning of middle school students.

Limitations of the Study

Despite the contribution of this study, there are some limitations that need further examination and investigation. The first limitation concerns with this study is that the researcher conducted a cross-sectional study using data at one point in time rather than longitudinal study due to the limited time. As such, conclusions cannot be drawn regarding the possible changes of students over time. Secondly, findings in this study can be replicated and generalized to only middle school student populations and in learning science subject. Finally, since the research area is restricted to Yangon City Development Areas, it may have limitation to the generalizability for the whole nation.

Suggestion for Future Research

One direction for future research is to examine ways to increase all students' motivation to learn science and interest in science-related careers. One way, consistent with social cognitive theory and its emphasis on role models, is to recruit women and men who are in science-related careers in the community to participate in school science activities and serve as science role models. These women and men should share their educational histories—particularly middle school histories—career responsibilities, and professional and personal challenges, focusing on science experiences that will increase students' intrinsic motivation, self-efficacy, and self-determination. The sharing of experiences and feelings about those experiences will foster the social-modeling process and the students' identities as science learners (Halpern et al., 2007; Pugh, Linnenbrink-Garcia, Koskey, Stewart, & Manzey, 2010).

Besides, in order to understand better about students' motivation towards science learning, the future research should be conducting future qualitative research. Qualitative methods should be considered when the research aim to assess the interaction of different environmental and social factors among the students. If the students with low motivation, to what extent can instructional methods foster their motivation? What are the ways to increase students' motivation towards science learning?

Future research should determine whether would be confirmed findings from this study would be confirmed in other academic subjects, and should consider others factors that may affect students' learning motivation. In addition, it is recommended that for future research it may involve more respondents. Moreover, it is necessary to collect the data by observing the teachers' instructional practices in the classroom. More research is required to assess which factors are motivation students in learning academic subjects.

Acknowledgement

I would like to convey deep and genuine thanks to Dr. Aye Aye Myint (Acting Rector, Yangon University of Education) and Dr. Pyone Pyone Aung (Pro-Rector, Yangon University of Education) for their official permission to do this research. Especially, I also wish to my very profound gratitude to Dr. Naing Naing Maw (Professor and Head of Department of Educational Psychology, Yangon University of Education) for her encouragement and valuable comments. Moreover, I am especially grateful to all principals and participants of this study.

References

- Akbas, A. & Kan, A. . (2007). Affective factors that influence chemistry achievement (motivation and anxiety) and the power of these factors to predict chemistry achievement. *Journal of Turkish Science Education*, 4 (1), 10-20.
- Albert Zeyer & Sarah Wolf. (2010). Is there a relationship between brain type, sex and motivation to learn science? *International Journal of Science Education*, 32 (16) , 2217-2233.
- Ames, C. (1992). Classroom: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84, 261-171.
- Bandura, A. (1997). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Bandura, A. (2006). Going global with social cognitive theory: From prospect to paydirt. In S. I. Donaldson, D. E. Berger, & K. Pezdek (Eds.), *The rise of applied psychology: New frontiers and rewarding careers* (pp. 53-70). Mahwah, NJ: Erlbaum.
- Bawaneh, A., Zain, A.N., & Salmiza, S. (2011). The Effect of Herrmann Whole Brain Teaching Method on Students' Understanding of Simple Electric Circuits. *European Journal of Physics Education*, 2(2), 1-23.
- Bawaneh, A., Zain, A. N., Saleh, S. & Abdullah, A. G. K. (2012). Using Herrmann whole brain teaching method to enhance students' motivation towards science learning. *Journal of Turkish Science Education*. 9(3), 3-22.
- Baz, T., & Bawaneh, A. (2008). The effect of using conflict maps as an instructional tool in changing alternative conceptions of eight grade students in science in the Hashemite Kingdom of Jordan. *The Educational Journal. University of Kuwait*, 87(22), 149–189. Brewster
- Bonwell, C. (1999). Using Active Learning to Enhance Lectures. *Applied Economic Perspectives and Policy*, 21(2), pp.542-550.
- Brewster, C., & Fager, J. (2000). *Increasing student engagement and motivation: From time-on-task to homework*, Northwest Regional Educational Laboratory.
- Bryan, R. B., Glynn, S. M. & Kittleson, J. M. (2011). *Motivation, achievement, and advanced placement intent of high school students learning science*, 95(6), 1049-1065.
- Cavas, P. (2011). Factors affecting the motivation of Turkish primary students for science learning. *Science Education International*, 22 (1), 31-42.
- Ecclees, J. S., & Wigfield, A. (2002). Motivation beliefs, values, and goals, *Annual Review of Psychology*, 53, 109-132.
- Eggen, P., & Kauchak, D. (1992). *Educational Psychology*, Merrill, an imprint of Macmillan Publishing Company.
- Evertson, Carolyn. (2015). Training Teachers in Classroom Management: An Experimental Study in Secondary School Classrooms. *The Journal of Educational Research*. 79. 51-58. 10.1080/00220671.1985.10885648.
- Güvercin, Ö., Tekkaya, C., & Sungur, S. (2010). *A cross age study of elementary students' motivation towards science learning*. Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 39, 233– 243.
- Halpern, D. F., Aronson, J., Reimer, N., Simpkins, S., Star, J. R., & Wentzel, K. (2007). *Encouraging girls in math and science* [IES Practice Guide]. Washington, DC: Institute of Education Sciences, U.S. Department of Education.
- Ikhwan, M., Saad, M., Tek, O. E. & Baharom, S. (2009). Self-regulated learning: Gender differences in motivation and learning strategies amongst Malaysian science students. In: *1st International Conference on Educational Research*.
- Karaarslan, G., & Sungur, S. (2011). Elementary Students' Self-Efficacy Beliefs in Science: Role of Grade Level, Gender, and SocioEconomic Status. *Science Education International*, 22(1), 72-79.
- Khin Thuza Saw, Daw. (2007). *Student motivation in basic science learning of grade four students at Myanmar primary schooling*. Unpublished doctoral theses, Yangon Institue of Education, Myanmar.
- Margolis, H., & McCabe, P. P. (2006). Resolving struggling readers' homework difficulties: How counselors can help. *Journal of Educational and Psychological Consultation*, 15, 79-110.

- McCombs, B. L., & Whisler, J. S. (1997). *The Learner-centered classroom*. San Francisco, Jossey-Bass Publishers.
- Mustafa, S. K. (2012). Adaptation study of motivation toward science learning questionnaire for academically advanced science students. Chemistry: *Bulgarian Journal of Science Education*, 2944.
- Obeidat, H. (2000). The effect of using the cooperative learning strategy and conceptual map to understand the concepts in ninth grade students in science. *Master Thesis (Unpublished)*, University of Jordan, Amman, Jordan.
- Organization for Economic Cooperation and Development [OECD]. (2007). *Assessing scientific, reading and mathematical literacy: A framework for PISA 2006*. Retrieved March 19, 2013, from <http://www.oecd.org/dataoecd/63/35/37464175.pdf>
- Pintrich, P. R., & Schunk, D. H. (1996). *Motivation in education: Theory, research, and applications*. Englewood Cliffs, NJ Prentice Hall.
- Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in Education theory, research, and application*, Englewood Cliffs, NJ; Prentice-Hall.
- Prince, M. (2004). Does active learning work? A review of the research. *Journal of engineering Education*, 93(3), 223-232.
- Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). *Motivation in education*. (3rd ed.). Upper Saddle River, NJ: Pearson.
- Pugh, K. J., Linnenbrink-Garcia, L., Koskey, K. L. K., Stewart, V. C., & Manzey, C. (2010). Motivation, learning, and transformative experience: A study of deep engagement in science. *Science Education*, 94, 1–28.
- Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). *Motivation in education*. (3rd ed.). Upper Saddle River, NJ: Pearson.
- Slavin, R. E. (2003). *Educational Psychology: Theory and Practice*. U.S.A, Pearson Education Inc.
- Sarwat Mubeen, Safia Saeed, Col (R). M. H. Arif. (2013). An investigation the gender difference into the status of intrinsic motivation towards science learning among intermediate science students. *Journal of Humanities and Social Science*, 81-85.
- Talib, O., Luan, W.s., Azhar, S. C. 7 Abdullah, N. (2009). Uncovering Malaysian students' motivation to learning science. *European Journal of Social Sciences*, 8(2), 266-276.
- Tuan, H. L., Chin, C. C., & Shieh, S.H. (2005). The development of questionnaire to Measure Students' Motivation Towards Science Learning. *International Journal of Science Education*, 27 (6), 639-654.
- Urdu, T., & Maehr, M. L. (1995). Beyond a two-goal theory of motivation and achievement: A case for social goals, *Review of Educational Research*, 65(3), 213-243.
- Zamrud, L. (2008). Exploring the motivation of female science students towards learning science at the secondary level (10th class)(*Unpublished master's dissertation*). Karachi, Pakistan: Aga Khan University.

A PRELIMINARY STUDY OF SOCIAL AND COGNITIVE FACTORS ON SECONDARY SCHOOL STUDENTS' ENGLISH LANGUAGE ACHIEVEMENT

Mai Myo Myo San¹, Nu Nu Khaing²

Abstract

To make secondary school students improve in English, an essential subject for them, it is needed to examine factors influencing English Language Achievement. Therefore, a preliminary study was conducted as an initial exploration of these factors influencing English Language Achievement of secondary school students. Socio-economic status, learning opportunities, parental involvement and student-teacher relationship were chosen as social factors that influence English Language Achievement. Linguistic intelligence and language learning strategies were selected as cognitive factors influencing English language achievement. As the sample of the study, a total of 1000 secondary school students (467 males and 533 females) from Minbu district were chosen. To examine which factors' influencing effects were direct or indirect, a path analysis was used. According to the result, it was found that linguistic intelligence and language learning strategies had significant direct effect on English language achievement, and learning opportunities, parental involvement and student-teacher relationship had significant indirect effect on English language achievement through language learning strategies.

Keywords: English Language Achievement, Linguistic Intelligence, Language Learning Strategies, Learning Opportunities, Parental Involvement

Introduction

In every society, to establish a balanced and adaptable living, communication is necessary. And, language is the essential tool to make any communication effective. According to Francis and Rivera (2007), language is the gateway for learning and the vehicle that facilitates acquisition of new knowledge through direct and indirect interaction with other humans, as well as through the reflective processes of introspection (cited in Thandar Soe, 2015).

Hamzah (2013) examines the effect of English language proficiency towards social capital and academic achievement among 81 undergraduate students enrolled in Economics courses from year two and three in University Utara Malaysia (UUM). The findings show that there is a positive relationship of English language proficiency towards academic achievements.

Gardner (1993) stated that language is not grammar specific; it is influenced by factors that are intelligence based. Also, Chamorro-Premuzic, 2007 and Primi et al., 2010, pointed out that intelligence variable has been found to be a strong predictor of learning (cited in Thandar Soe, 2015).

Gardner's multiple intelligence theory divides human intelligence into nine intelligences in which Linguistic Intelligence is one domain of those nine domains. Other previous studies also indicated that there was a positive relation between learners' linguistic intelligence and their vocabulary knowledge (Skourdi & Ragimi, 2010), successful writing (Marvi, 2008; Yeganehfer, 2005), speaking (Marvi, 2008) and listening (Marvi, 2008; Mahdavy, 2008) skills (cited in Thandar Soe, 2015)..

More recently, writers such as O'Malley (1987), Oxford (1990), Wenden (1991), Cohen (1998) and Chamot (2001) have suggested that learners might be able to learn language more effectively by the use of language learning strategies. Takeuchi (1993) conducted a survey on 78 Japanese first year students of English at a women's college in Kyoto and concluded, "This study confirmed that the self-reported frequency of some language learning strategies was positively

¹ Principle, BEHS(B) Yepoke, Minbu(Sagu)Township, Magway Region

² Dr, Professor, Department of Educational Psychology, Yangon University of Education

related to proficiency of English", (cited in Kato, 2005). Also, Kato (2005) indicated that language learning strategies have several important implications for teaching English to Japanese university students. Kyungsim and Leavell (2006) discovered that the more active strategy users in their study made faster progress than those who employed strategies less often. In other words, a number of studies have demonstrated a significant positive correlation between strategy use and successful language learning (cited in Kato, 2005).

Schumann (1978) argued in his acculturation model that the degree of social integration into the second language group determines the degree of language learning. Social factors are considered to influence second language learning indirectly in two ways. First they are involved in shaping the individual's attitudes towards, for example, the second language and its speakers and second, they can provide opportunities for language use (Spolsky, 1989).

According to Spolsky's (1989), there are several factors affecting students' second language learning outcomes. Those factors include students' social contexts, attitudes, motivation, age, personality, capabilities, previous knowledge, and learning opportunities in the form of formal and informal education.

The impact of students' socio-economic and surrounding environments on students' learning performance has long been discussed. Ross and Wu (1995) made a generalization that once the social status and their family's income are increasing, students tend to progress better in their academic performance. Academically, socioeconomic factors have a close link to the chances of what kind of schools students are attending. In other words, what and how they are educated in such schools depend on their socio-economic status (Olaitan, 2012).

Parents also play a major role in their children's second/foreign language process. Gardner (1977) identified two roles for the parents: active or passive. The first refers to the parents' conscious promotion of the children's language learning as they monitor their progress and praise their success. The latter may include encouraging and supervising the children's work but necessarily involves transmitting negative attitudes towards foreign language learning. This can be manifested openly through comments about speakers of the target language or the importance of language learning in the curriculum, or indirectly by showing apathy in the foreign language (cited in Yazigy, 1991).

Students' ability to connect with their teachers is also one attribute that can make a great difference in students' learning achievement (Da Luz, 2015). According to Da Luz (2015), students/teacher relationships, communicative language teaching and cooperative learning are essential elements of learning process full of opportunity, trust, confidence and motivation. Those elements, when well combined, are a guarantee of success while learning a second language and succeed.

Therefore, the present study is an attempt to examine both direct and indirect effects of the social and cognitive factors upon students' English language achievement such as linguistic intelligence, language learning strategies, socio-economic status, learning opportunity, parental involvement and student-teacher relationship of the students.

Aim and Objectives

The main aim of this study is to investigate social and cognitive factors influencing English language achievement.

The specific objectives were:

- (1) To examine whether students' learning opportunities, parental involvement, student-teacher relationship, socio-economic status, linguistic intelligence and language learning strategies are directly effects on their English language achievement;

- (2) To investigate whether students' parental involvement mediate the effect of their socio-economic status on students' English language achievement.

Hypotheses of the Study

Hypothesis 1: Linguistic Intelligence directly predicts English Language Achievement.

Hypothesis 2: Language Learning Strategies directly predicts English Language Achievement.

Hypothesis 3: Socio-economic Status directly predicts English Language Achievement.

Hypothesis 4: Learning Opportunities directly predicts English Language Achievement.

Hypothesis 5: Parental Involvement directly predicts English Language Achievement.

Hypothesis 6: Student-teacher Relationship directly predicts English Language Achievement.

Hypothesis 7: Socio-economic Status directly predicts Parental Involvement.

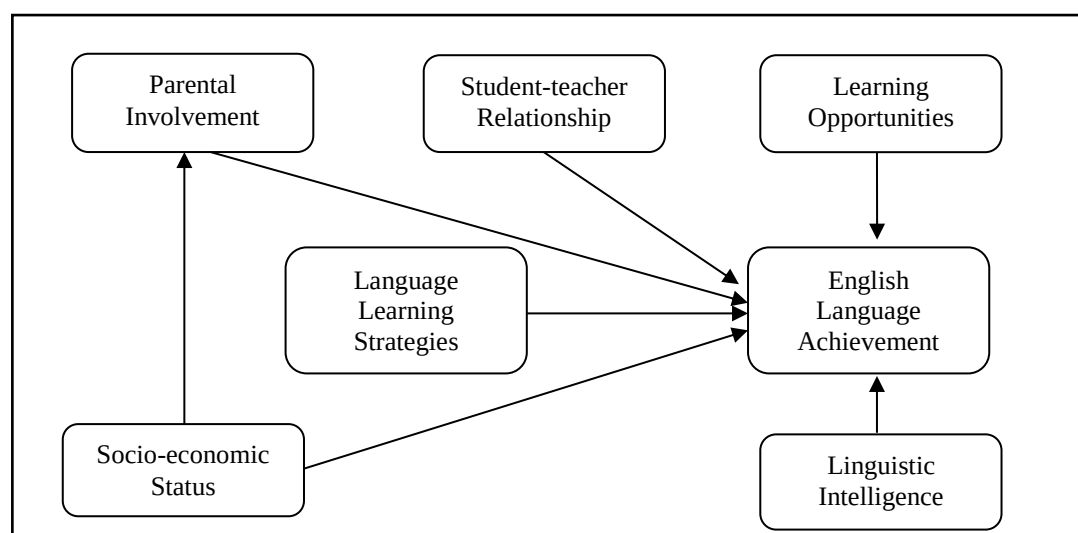


Figure 1 Proposed Model of Predicting English Language Achievement from Social and Cognitive Factors

Definition of Key Terms

Linguistic intelligence: Sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals (Gardner, 1993).

Language learning strategies: Specific actions taken by the learner to make learning faster, more enjoyable, more effective, and more transferrable to new situations (Oxford, 1990).

Learning opportunities: Students' opportunities to study a second language (Mitchell & Myles, 2001).

Parental involvement: Parental participation in the educational processes and experiences of their children (Jynes, 2007).

Method

Research Design

The design used in this study was quantitative research design. Descriptive survey method was utilized in the present study.

Sampling

By using cluster sampling technique, the schools and students were selected from Minbu District, Magway Region. The number of the students administered by schools was mentioned in Table 1.

Table 1 Distribution of Students from Each Selected School in Terms of Gender

No	District	Schools	Numbers of Participants		Total
			Male	Female	
1.	Minbu	No(1) BEHS,Minbu	129	114	243
2.	Minbu	BEHS (branch) Inn Daung	38	31	69
3.	Minbu	BEHS (branch) Kyaung Kone	65	57	122
4.	Minbu	BEHS, Sinphyugyun	93	98	191
5.	Minbu	BEHS, Padann	73	150	223
6.	Minbu	BEHS, Sitoktaya	34	49	83
7.	Minbu	No (1) BEMS(branch), Sitoktaya	17	19	36
8.	Minbu	BEMS, Out Pon	10	8	18
9.	Minbu	BEMS, Ka Pa Sa (20)	8	7	15
Total			467	533	1000

Instrumentation

The 28 items Questionnaire for Social Factors developed by Phon (2017), Yazigy (1991), and Da Luz (2015) was used to investigate students' social factors: Socioeconomic status, Learning Opportunities, Parental Involvement and Student-teacher Relationship. The internal consistency (Cronbach's Alpha) for this questionnaire was 0.81.

Linguistic Intelligence Test was developed by the researcher, based on Gardner's Multiple Intelligence Theory and other theoretical perspectives to examine students' linguistic intelligence. There are six subtests in this test: Puzzle Game, Word Search, Proverb, Spelling Checking, Rearrangement and Picture Story. The internal consistency (Cronbach's Alpha) for this test was 0.88.

To examine language learning strategies of the students, the present study used Oxford's (1990) Version 7.0 of the Strategies Inventory for Language Learning (SILL), designed for English as Foreign Language/English as Second Language learners. Cronbach's Alpha for this inventory was 0.95.

In the present study, English Language Achievement Test was used to examine students' English language achievement. The test was developed by the researcher by taking a reference from Grade 9 English text book and Grade 9 examination question format. The internal consistency (Cronbach's Alpha) for this test was 0.95.

Data Analysis

To investigate the direct and indirect effects between variables, a path analysis study was carried out. In R studio version (3.5.2), path analysis was conducted by using the lavaan package (Latent Variable Analysis). To measure the goodness of fit indexes of the model, many different

types of fit indexes including the Comparative Fit Index(CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR).

Result and Discussion

In model (1), it is proposed that students' socio-economic status, learning opportunities, parental involvement, student-teacher relationship, linguistic intelligence and language learning strategies are directly effects on their English language achievement; and students' parental involvement mediate the effect of their socio-economic status on students' English language achievement. In order to examine the consistency between the predicted and observed data matrix, many fit indexes were calculated. The result indicated that all the observed fit indexes values were not within the allowable range for these specific types of fit indexes. Therefore, according to some literature reviews (Miller, A (2016), Sung, K (2011), Dreyer and Oxford (1996), the model was decided to revise.

In revised model, it is assumed that students' linguistic intelligence and language learning strategies were directly effects on their English language achievement; and students' language learning strategies mediate the effect of their learning opportunities, parental involvement and student-teacher relationship on students' English language achievement.

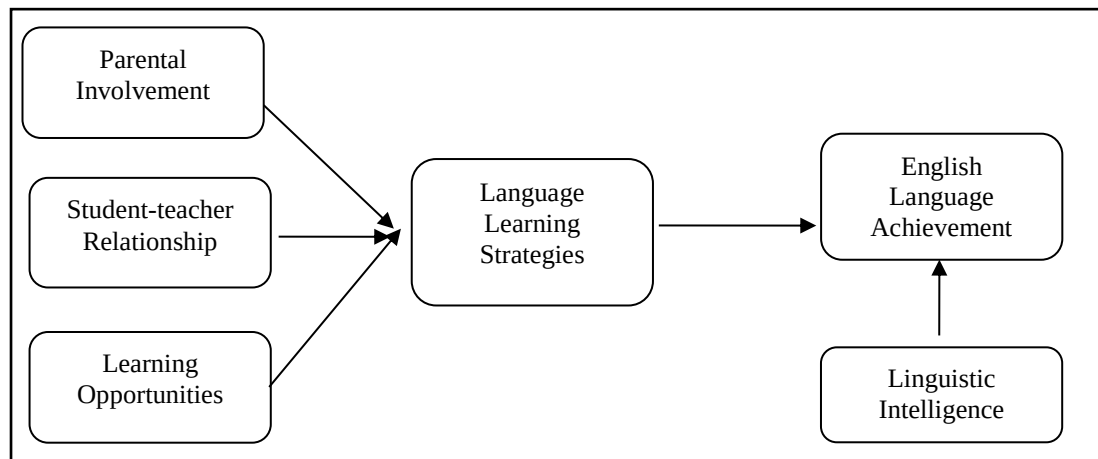


Figure 2 Revised Model of Predicting English Language Achievement from Social and Cognitive Factors.

In figure 2, the revised model of predicting students' English language achievement from their learning opportunities, parental involvement, student-teacher relationship, linguistic intelligence and language learning strategies was mentioned. In order to examine the consistency between the predicted and observed data matrix, many fit indexes were calculated. The result indicated that all the observed fit indexes values were within the allowable range for these specific types of fit indexes. Therefore, the observed data were well fitted with the revised model.

In Table 2, the fit indexes of proposed model and revised model were compared. And the direct and indirect effects between variables were presented in Table 3.

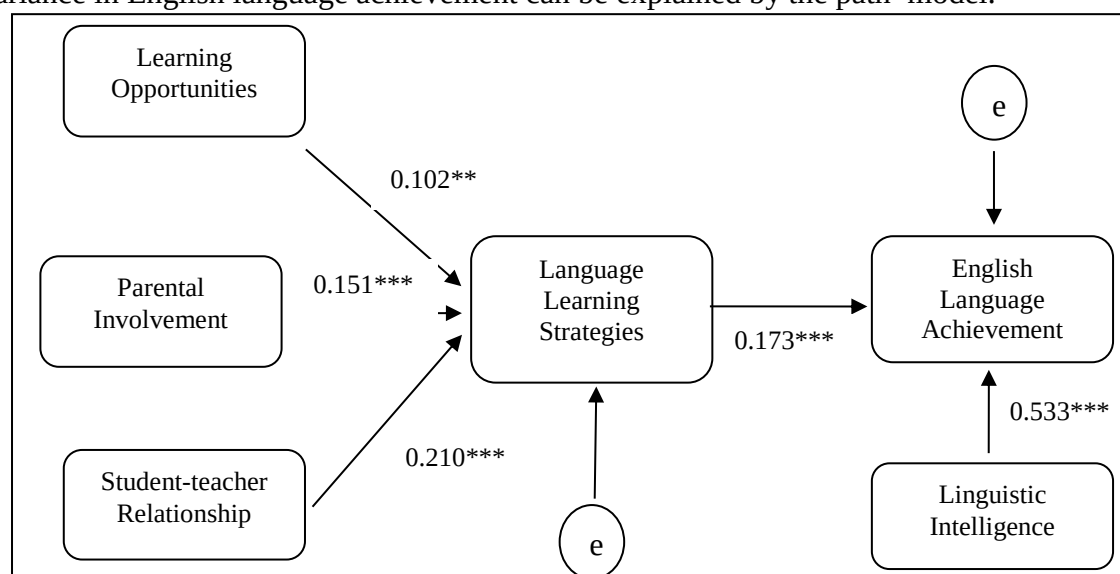
Table 2 Summary of All Fit Indexes for Proposed and Revised Path Model.

Fit Indexes	Ideal Standards	Observed Values	
		Proposed Model	Revised Model
RMSEA	< 0.1	0.255	0.051
TLI	> 0.9	0.208	0.957
CFI	> 0.9	0.712	0.981
SRMR	< 0.05	0.119	0.027

Table 3 Summary of Causal Effects for the Path Model

Outcomes	Determinant	Causal Effects		
		Direct	Indirect	Total
Language Learning Strategies ($R^2=0.127$)	Learning Opportunities	.102**	-	.102**
	Student-teacher Relationship	.210***	-	.210***
	Parental Involvement	.151***	-	.151***
English Language Achievement ($R^2=0.325$)	Linguistic Intelligence	.533***	-	.533***
	Language learning Strategies	.173***	-	.173***
	Learning Opportunities	-	.018**	.018**
	Parental Involvement	-	.026***	.026***
	Student-teacher Relationship	-	.036***	.036***

According to the result of path analysis, linguistic intelligence, language learning strategies had significant direct effect on English language achievement. Learning opportunities, parental involvement and student-teacher relationship had also significant indirect effect on English language achievement through language learning strategies. Totally, 58.9% of the variance in English language achievement can be explained by the path model.

**Figure 3** A Path Model for Predicting English Language Achievement from Social and Cognitive Factors.

According to Gardner (1993), linguistic intelligence is the ability to learn language, the capacity to use language to accomplish certain goals, the ability to effectively use language. Therefore, linguistic intelligence would be the factor that directly influences students' English language achievement.

Language Learning Strategies are specific actions taken by the learner to make learning faster, more enjoyable, more effective, and more transferrable to new situations (Oxford, 1990). So, it would be undoubtedly seen that language learning strategies directly affect students' English language achievement.

Harb and El-Shaarawi (2007) said that once students' learning preference was largely fulfilled; there would be more and more positive impacts on students' learning performance. Language learning strategies have played an influential role in language learners' learning process (Chamot, 2009; Cohen, 2014; Cohen & Macaro, 2007; Oxford, 1990, 2013; Rubin,

1975); also, explicit language learning strategies instruction enhances learners' academic success (Ehrman & Oxford, 1995; Oxford & Nyikos, 1989). Therefore, students' chance of learning opportunities may lead to their English language achievement through their use of language learning strategies.

Xuesong's (2006) said that upper-class students' parents use different strategies to support their language learning. That is why, parental involvement influence students' English language achievement through their use of language learning strategies.

According to Vilar Beltran (1995), the teacher may be able to help students to feel comfortable and motivated to learning a foreign language. Such a teacher would find different way of strategies to learn a language for his/her students. In such a way, student-teacher relationship would become a factor that influence students' English language achievement through language learning strategies.

However, in the present study, it was found that students' socio-economic status has no significant effect on students' English language achievement. Similar to a study on "Parental involvement and students' achievement in Cambodia" by Nguon (2012), the family social background had no relationship with students' academic achievement (cited in Phon, 2007).

Therefore, students who have high linguistic intelligence, more use of language learning strategies, more opportunities in their learning, higher parental involvement and better student-teacher relationship may have high English language achievement.

Conclusion

The ultimate goal of this research is to examine social and cognitive factors that influence English language achievement of secondary school students. Linguistic intelligence and language learning strategies were regarded as cognitive factors and socio-economic status, learning opportunities, parental involvement, student-teacher relationship were regarded as social factors in the present study.

According to the result of path analysis study, linguistic intelligence and language learning strategies want to be presented as positive significant predictors of students' English language achievement. Moreover, students' language learning strategies can serve as the mediator which can explain the relationship between students' learning opportunities, parental involvement and student-teacher relationship. However, students' socio-economic status was not shown as a significant factor that influences their English language achievement.

Therefore, it can be said that students who have high linguistic intelligence, more use of language learning strategies and more opportunities in learning, higher parental involvement and better student-teacher relationship may have high English language achievement.

It is undoubtedly significant that linguistic intelligence, language learning strategies, learning opportunities, parental involvement and student- teacher relationship are crucial factors that influence students' English language achievement. Therefore, the suggestions from the results of this study would be students' linguistic intelligence would be upgraded, their more use of language learning strategies would be encouraged, positive parental involvement and student-teacher relationship should be created for their English language achievement.

Acknowledgements

Firstly, I would like to offer our respectful gratitude to Dr. Aye AyeMyint (Retired Rector of Yangon University of Education), Dr Pyone Pyone Aung (Pro-Rector, Yangon University of Education) and Dr.Kay Thwe Hlaing (Pro-Rector, Yangon University of Education) for allowing us to do this study. And I would like to express my honorable appreciation to Dr. Naing Naing Maw (Professor and Head of Department, Department of Educational Psychology, Yangon University of Education) for her kindness, encouragement and valuable comments for this

study. Moreover, I am particularly grateful to all the teachers from the Department of Educational Psychology, Yangon University of Education for their kindly editing to research instruments, understanding, warm supports and valuable comments and suggestions. And I would like to pay special thanks to all the participants of this study.

References

- Chamot, A. U. (2009). *The calla handbook: Implementing the cognitive academic language learning approach* (2nd ed.). White Plains, us: Pearson-Longman.
- Cohen, A. D. (2014). *Strategies in learning and using a second language* (2nd ed.). London, uk: Routledge.
- Cohen, A. D., & Macaro, E. (Eds.). (2007). *Language learner strategies: Thirty years of research and practice*. Oxford, uk: Oxford University Press.
- Da Luz, Fredson Soares dos Reis. (2015). *The Relationship between Teachers and Students in the Classroom: Communicative Language Teaching Approach and Cooperative Learning Strategy to Improve Learning*. In BSU Master's Theses and Projects Item 22.
- Dreyer, C., & Oxford, R. (1996). Learning strategies and other predictors of ESL proficiency among Afrikaans-speakers in South Africa. In R. L. Oxford (Ed.), *Language learning strategies around the world: Cross: cultural perspectives* (pp. 17-18). Manoa: University of Hawaii Press.
- Ehrman, M. E., & Oxford, R. L. (1995). Cognitive plus: Correlations of language learning success. *The Modern Language Journal*, 79(1), 67-89. <http://doi.org/10.1111/j.1540-4781.1995.tb05417.x>.
- Gardner, H. (1993). *Multiple intelligences: The theory in practice*. New York: Basic Books.
- Hamzah, M.S. (2013) *Effect of English Proficiency on Social Capital and Academic Achievement Among Economic Students*, University Utara Press, Malaysia
- Harb, N.; El-Shaarawi, A. 2007, Factors Affecting Business Students' Performance: The Case of Students in United Arab Emirates, *Journal of Education for Business*, 82, 5, 282 – 290 Helm
- Jeynes, W.H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: Ameta-analysis. *Urban Education*, 42(1), 82-110.
- Kato, S. (2005). *How Language Learning Strategies affect English Proficiency in Japanese University Students*.
- Miller, A. (2016). *9 Factors that Influence Language Learning*. whitby school.org, 2016
- Mitchell, R. & Myles, F. (2001). Second language learning: key concepts and issues. In C. N. Candlin and N. Mercer (Ed.), *English language teaching in its social context* (pp. 11-27). London: Routledge.
- Mueller, C. W., & Parcel, T. L. (1981). Measures of socioeconomic status: Alternatives and recommendations. *Child Development*, 52(1), 13-30.
- Olaitan, A. W. (2012). The effects of background characteristics and school factors on college students' performance and satisfaction. *Journal of Education and Practice*, 3(8), 251- 257.
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Rowley, us: Newbury House Publishers.
- Oxford, R. L. (2013). *Teaching and researching: Language learning strategies*. London, uk: Routledge.
- Oxford, R., & Nyikos, M. (1989). Variables affecting choice of language learning strategies by university students. *The Modern Language Journal*, 73(3), 291-300. <http://doi.org/10.1111/j.1540-4781.1989.tb06367.x>.
- Pianta, R. C. (1999). *Enhancing relationships between children and teachers*. Washington, DC: American Psychological Association.
- Rubin, J. (1975). What the "good language learner" can teach us. *Tesol Quarterly*, 9(1), 41-51. <http://doi.org/10.2307/3586011>.

- Schumann, J. H. (1978). The acculturation model for second-language acquisition. In R. C. Gingras (Ed.), *Second-Language Acquisition & Foreign Language Teaching*, (pp. 27-50). Washington: Center for Applied Linguistics (CAL).
- Skourdi, S., & Rahimi, A. (2010). The relationship of emotional intelligence and linguistic intelligence in acquiring vocabulary. *XXXV No. 1*.
- Spolsky, B. (1989). *Conditions for Second Language Learning* Oxford: Oxford University Press
- Sung, Y. (2011), *"Factors Influencing Chinese Language Learners' Strategy Use"*. <http://doi.org/10.1080/14790718.2010.532555>.
- Thandar Soe. (2015). *A Study of Contemporary Trends and Challenges of English Language Teaching in Myanmar*.
- VilarBeltrán,E.(1995). *Roles of teachers. A case study based on: Diary of a language teacher* (Joachim in Appel 1995) [PDF Version]. Retrieved from <http://www.uji.es/bin/publ/edicions/jfi6/teachers.pdf>
- Wenden, Anita L. (1985) "Learner Strategies", TESOL Newsletter, 19(5), 1-7
- Yazigy, R.J. (1991). *Social and Psychosocial Factors in Learning English as a Foreign Language in Lebanon*. Published by ProQuest LLC 2015. Copyright in the Dissertation held by the Author. Microform Edition © ProQuest LLC.

AN ANALYTICAL STUDY OF IDENTITY STYLES AND PSYCHOLOGICAL WELL-BEING OF FIRST YEAR STUDENTS

Ei Mon Phyo¹, Khin Hnin Nwe²

Abstract

This study aims to investigate the psychological well-being of first year students by identity style. A total of 1200 first year students from universities of education, university of medicine, universities of technology, universities of economic, and arts and science universities. The required sample was chosen by stratified sampling method. In the present study, students' psychological well-being was measured with the 84 item version of Ryff's Psychological Well-Being Scale used by Moe in 2012. According to the result, 52% of students fall on medium level of psychological well-being and 48% of students on higher level. Students' identity styles were examined by using Berzonsky's identity style inventory (1992). There are 11 items in informational style, 9 items in normative style and 10 items in diffuse-avoidant style to be rated by five-point likert scale. The results showed that 31% of students have informational style, 29% of undergraduate students have normative style and 39.8% of students have diffuse/avoidance style. The results of correlational study revealed that students with normative style have higher level of psychological well-being and students with diffuse/avoidance style has lower psychological well-being.

Keywords: Identity, Identity Styles, Psychological Well-Being

Introduction

As a country in transition, Myanmar faces many **challenges** in economic, political and social affairs. The sustainable development of these affairs is closely related to education. Therefore, educated populace is vital in today's society. The only place that can produce highly skilled manpower is university. So the role of universities is very important for all sectors of development.

According to developmental stage, university students are in adolescence and the key developmental task of adolescents is identity formation. During the identity development process, adolescents strive to understand who they are, what values they should live by, what they believe, and what they desire to do and become (Erikson, 1959). Therefore, to examine how students construct and manipulate their identities during identity formation, classifying their identity styles is the primary aim of the researcher.

Entering university is one of the major life transitions for first year students. They have many challenges and faces social problems in their daily life. If they cannot manipulate these challenges, they will not fulfill their needs. This will lead to decrease their well-being. Thus, this study will also examine the students' psychological well-being level and how identity styles relate with students' psychological well-being.

Aims of the Study

The primary purpose of this study is to examine the relationship between identity styles and psychological well-being of first year students. The specific objectives are -

- (1) To identify the identity styles of first year students.
- (2) To examine the level of first year students' psychological well-being.
- (3) To differentiate the psychological well-being of first year students by identity styles.

¹ Tutor, Department of Educational Psychology, Yangon University of Education

² Dr, Professor, Department of Educational Psychology, Yangon University of Education

Definitions of Key Terms

Identity: Identities are the traits and characteristics, social relations, roles, and social group memberships that define who one is. (Leary & Tangney, 2012)

Identity Style: Identity style refers to the various processes that individuals can utilize to clarify and refine their identity--their goals, purpose, values, qualities, and interests (Berzonsky, 1990).

Psychological Well-Being: Psychological well-being refers to inter- and intra-individual levels of positive functioning that can include one's relatedness with others and self-referent attitudes that include one's sense of mastery and personal growth. (Burns, 2016)

Related Literature Review

What is Identity?

Identity is derived from the Latin “idem”, which means “being the same (person)”. Vignoles and his colleagues presented their view on identity that identity involves people’s explicit or implicit responses to the question: “Who are you?” The response to this question has considerable amount of complexity.

Identity comprises not only “who you think you are” (individually or collectively), but also “who you act as being” in interpersonal and intergroup interactions—and the social recognition or otherwise that these actions receive from other individuals or groups. Thus, the identity question, “Who are you?”, actually encompasses a range of diverse but related contents and processes, and these are emphasized in different fields of research, and different theoretical and metatheoretical perspectives (Vignoles et al., 2011).

Berzonsky had proposed that individuals within the various identity statuses differ in the social-cognitive processes they use to solve personal problems, make decisions, and process identity-relevant information. He referred to this orientation as identity styles. In 1989, Berzonsky introduced three identity styles (1) informational style (2) normative style and (3) diffuse/ avoidance style.

Individuals with an *informational style* deliberately seek out, process, and evaluate identity-relevant information. They are skeptical self-explorers who are open to new ideas and alternatives and are willing to suspend judgment in order to examine and evaluate their self-constructions (Berzonsky, 2011). Individuals with *normative style* internalize and adhere to goals, values, and prescriptions appropriated from significant others and referent groups in a relatively automatic or mindless manner, that is, they make premature commitments without critical evaluation and deliberation (Langer, 1989). *Diffuse/avoidant-oriented* individuals are reluctant to face up to and confront personal problems and decisions. In the current study, first year students' identity styles will be differentiated according to Berzonsky's identity styles.

Psychological Well-Being

Throughout history, psychologists have offered different descriptions of well-being, from the perspectives of *eudemonic* and *hedonic*. According to eudemonic perspective, psychological well-being is more than just happy feeling. From this perspective, Ryff (1989) proposed a multidimensional model composed of six different dimensions: Self-acceptance, Positive relations with others, Autonomy, Environmental mastery, Purpose in life and Personal growth. According to Ryff and Singer, **self-acceptance** is a kind of self-evaluation that involves awareness, and acceptance of, both personal strengths and weaknesses. Having **positive relations with others** is an essential component in the development of trusting and lasting relationships as well as belonging to a network of communication and support (Ryff, 1989; Ryff & Keyes, 1995).

Autonomy stands for the degree to which someone is, “self-determining and independent; able to resist social pressures to think and act in certain ways; regulate behavior from within; and evaluate self by personal standards” (Ryff, 1989). **Environmental mastery** refers to choosing and controlling the surrounding and imagined environment through physical and/or mental actions (Ryff, 1989; Ryff & Keyes, 1995). **Purpose in life** stands for the degree to which someone, “has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; and has aims and objectives for living” (Ryff, 1989). **Personal growth** is the ability to develop and expand the self, to become a fully functioning person, to self-actualize and accomplish goals (Ryff, 1989; Ryff & Keyes, 1995).

Methodology

Sampling

The total number of 1200 first year students (442 males and 758 females) attending in 12 universities (7 universities from Upper Myanmar and 5 universities from Lower Myanmar) were included in this study. As a field of study, arts and science, education, economic, medicine and technology were assigned. Then, stratified sampling method was used for data collection. The number of students in each university is shown in Table 1.

Table 1 Number of Students by University

	University Name	Region/State	Number of Students
1.	Taunggyi University	Shan State	106
2.	Sittway University	Rakhine State	118
3.	Mandalay University	Mandalay Region	90
4.	Yangon University	Yangon Region	93
5.	University of Medicine, Mandalay	Mandalay Region	95
6.	University of Technology, Monywa	Sagaing Region	60
7.	University of Technology, Hinthada	Ayeyarwaddy Region	83
8.	University of Economic, Monywa	Sagaing Region	100
9.	University of Economic, Yangon	Yangon Region	70
10.	Yangon University of Education	Yangon Region	114
11.	Sagaing University of Education	Sagaing Region	109
12.	University of Education (UDNR)	Sagaing Region	146
	Total		1200

Research Design

Quantitative research design was used in this study. Descriptive survey method as quantitative design was applied.

Research Instrumentation

To collect the required data, Ryff's psychological well-being scale revised by Moe (2012) and Berzonsky's identity style inventory (1992) were used. This Berzonsky's identity style inventory was also used by Wilson in 2011. After the questionnaires were adapted to Myanmar version, the expert review was conducted for content validity with the help of nine experts from the field of educational psychology. According to their suggestions, researcher modified the questionnaires and conducted the pilot study with 162 students from Taungup University for the test of reliability and validity.

Psychological Well-Being Scale: There are six dimensions in this questionnaire: (1) autonomy, (2) environmental mastery, (3) personal growth, (4) positive relations with others, (5) purpose in life, and (6) self-acceptance. In 2012, Moe used this 84 item version to assess the psychological well-being of women. In this version, each scale includes 14 items and participants were asked to rate their responses on a 6-point likert scale. In the current study, this 84 item version scale was used. Therefore, total scores per subscale can range from 14 to 84 and total scores for the entire instrument can range from 84 to 504. The higher mark indicates a better psychological well-being. Since the reliability coefficient of this questionnaire is .87, the internal consistency of psychological well-being scale is good.

Identity Style Inventory: This inventory provides continuous scores for each of the three styles: (1) informational style, (2) normative style, and (3) diffuse-avoidant style. There are 11 items in informational style, 9 items in normative style and 10 items in diffuse-avoidant style. Responses were reported on a five-point likert scale. The internal consistency of identity style inventory is .77 and it has the acceptable reliability.

Data Analysis and Research Findings

Descriptive Statistics for Identity Styles

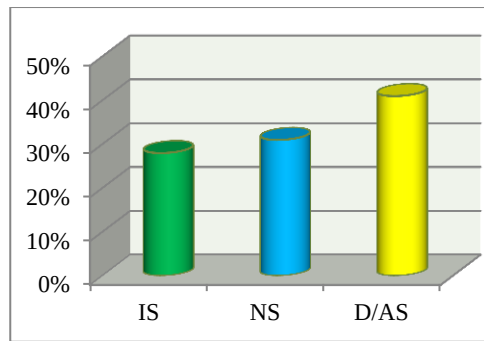
At first, the researcher classified three types of identity styles. The items of each subscale were summed and these raw scores were converted to z-scores. Based on the highest z-score, the identity style of each student was assigned. As a result, 341 students have informational style, 363 students have normative style and 496 students have diffuse/avoidance style. The frequency of identity styles by gender are as shown in table 2.

Table 2 Comparison of Identity Styles by Gender

		Identity Styles			Total
		Informational Style	Normative Style	Diffuse/Avoidance Style	
Male	count	124	141	177	442
	expected count	125.6	133.7	182.7	442
	% within gender	28%	32%	40%	100%
Female	count	217	222	319	758
	expected count	215.4	229.3	313.3	758
	% within gender	29%	29%	42%	100%

According to Berzonsky and Luyckx (2008), 28% of students with informational style tend to actively seek out information, apply an active problem solving approach and attempt to learn new things about themselves. Moreover, they can make adaptation to their university context.

31% of undergraduate students have normative style and they have the tendency to conform to norms expected by society and significant others, such as parents, teachers, friends etc. According to Berzonsky and Luyckx (2008), they adopt and internalize the expectations of others and have a low tolerance for ambiguity. The students of 41% have diffuse/avoidance style and have a tendency to avoid and delay decision making as long as possible.



IS = Informational Style
 NS = Normative Style
 D/AS = Diffuse/Avoidance Style

After that, to determine whether there is a significant difference in identity style by gender, independent sample t-test was run by using SPSS version 22. According to the result, identity styles of male students are not different from female students.

Descriptive Statistics for Psychological Well-Being

Before the data were analyzed, negatively scored items were recoded. Descriptive statistics revealed that the mean score of psychological well-being of first year students was 335.20 and standard deviation was 32.524 on an 84 to 504 point scale. To know the level of psychological well-being of university students, three levels were classified. Scores were considered high if scores fell in the top third, moderate if they fell in the middle third, and low if they fell in the bottom third of observed responses (Keyes et al., 2002 as cited in Moe, 2012). According to the results, 627 (52.25%) of students fell in moderate level and 573 (47.75%) students fell in higher level of psychological well-being.

Table 3 Descriptive Statistics for Psychological Well-Being Components of First Year Students

	Mean	Std. Deviation	N
Autonomy	52.4	7.6	1200
Environmental Mastery	51.8	6.1	1200
Personal Growth	61.7	6.4	1200
Positive Relations with others	54.9	8.4	1200
Purpose in Life	61.1	8.1	1200
Self-Acceptance	53.3	8.0	1200

According to the above results, the mean score for personal growth is highest and the mean score for environmental mastery is lowest among six components of psychological well-being. This result agrees with the study of Terezini (1984) that the students' personal growth increases during the first year of university. During their first year life, they may confront with many social and academic problems. They make self-governing in this difficult situations. Therefore, their personal growth increasingly developed during the first year.

After that, to know if there is significant difference in psychological well-being by gender, independent sample t-test was run. As a result, there is no significant difference in psychological well-being by gender. This contrasts to the previous research of Akhter (2015) that there is a significantly difference in the psychological well-being among male and female students. But, this result agrees with the study of Lopez et al., (2019) that no significant differences emerged according to gender.

Then, to examine if there is a significant difference in psychological well-being by identity styles, one-way ANOVA was run and the results are shown in table below.

Table 4 ANOVA of Psychological Well-Being by Identity Styles

	Sum of Squares	df	Mean Square	F	p
Between groups	26.5	2	13.25	104.4	.000
Within groups	151.8	1197	.127		
Total	175.3	1199			

The ANOVA result revealed that there is a significant difference in psychological well-being by identity styles. Therefore, to test which type of identity styles is significantly different from other types, Tukey HSD test was run and the result is shown in Table 5.

According to the Tukey HSD result, the psychological well-being of both informational style and normative style is significantly different from that of diffuse/avoidance style. But, there is no significant difference between informational and normative style. Students with diffuse/avoidance style have lowest level of psychological well-being. This finding is consistent with previous research documenting that individuals with a diffuse/avoidant orientation are characterized by decreased well-being (Philips & Pittman, 2007). But, one of the previous research indicated that an individual with diffuse/avoidance style has potential to get benefits from their training. So, although they procrastinate and delay in decision making during first year, this style may be changed after the university training.

Table 5 Tukey HSD for Psychological Well-Being by Identity Styles

(I) Identity Style	(J) Identity Style	Mean Difference (I-J)	Std. Error	p	95% confidence interval	
					Lower Bound	Upper Bound
Informational Style	Normative Style	-.08*	.03	.01	-.14	-.02
	Diffuse/Avoidance Style	.25***	.03	.00	.19	.31
Normative Style	Diffuse/Avoidance Style	.33***	.02	.00	.28	.39

* The mean difference is significant at 0.05 level (2-tailed).

*** The mean difference is significant at 0.001 level (2-tailed).

The Relationship between Identity Styles and Psychological Well-Being of First Year Students

To study the relationship between psychological well-being components and identity style, Pearson correlation coefficient was examined and shown in Table 6. From this correlational study, diffuse/avoidance style was negatively correlated with all components of psychological well-being but has very weak relationship with autonomy. Informational style has highest relationship with personal growth. Normative style has moderate relationship with all components of psychological well-being, except autonomy.

Table 6 Correlations among the Psychological Well-Being Components and Identity Styles

	Informational Style	Normative Style	Diffuse/Avoidance Style
Autonomy	.09**	-.01	-.08**
Environmental Mastery	.04	.25**	-.26**
Personal Growth	.21**	.22**	-.40**
Positive Relations	.06**	.23**	-.28**
Purpose in Life	.15**	.31**	-.43**
Self-Acceptance	.03	.20**	-.22**

** Correlation is significant at the 0.01 level (2-tailed).

Conclusion

The present study revealed that identifying students' primary identity processing style early on is very useful. According to the results, 28% of students have informational style, 31% have normative style and 41% have diffuse/avoidance style. Most of the students entering the university are more likely to have diffuse/avoidance style. Psychological well-being level of most of the students is in moderate level. As the result of correlational study, the diffuse/avoidance style is negatively correlated with all components of psychological well-being. In other words, students with diffuse/avoidance style are characterized by decreased psychological well-being. Thus, students' identity styles can be identified as early as possible, the programs and interventions designed to improve students' academic and non-academic performance can be targeted to students with diffuse/avoidance orientations who have a tendency to avoid and delay decision making as long as possible.

Students with normative style have higher psychological well-being than informational style. This is due to the fact that students with informational style tend to actively seek out information and attempt to learn new things about themselves. But, they may not have adequate satisfaction for their needs in university context and this may lead to decrease their psychological well-being. Another important factor is that their parents may not advocate their desires and goals. Therefore, in order to increase students' psychological well-being, what students want to learn and their academic needs should be investigated and considered by universities. To wrap it all, if students' identity processing styles can be identified, their psychological well-being level will be estimated and thus, effective educational policies and university practices for improving psychological well-being will be implemented.

Limitations

This study is limited because only the first year students from the selected field of study were examined. It is necessary to study various field of study and universities. The second limitation is that it is cross-sectional study. To know whether their identity styles are changed and their psychological well-being is improved year after year, longitudinal study is recommended.

Acknowledgements

First of all, we are deeply indebted to Dr. Pyone Pyone Aung (Pro-Rector, Yangon University of Education) and Dr. Kay Thwe Hlaing (Pro-Rector, Yangon University of Education) for allowing us to submit this paper. Then, we would like to express our sincere gratitude to Dr. Naing Naing Maw (Professor, Head of Department, Department of Educational Psychology, Yangon University of Education) for her valuable guidance, encouragement and suggestions for this study.

References

- Akhter, S. (2015). Psychological Well-Being in Student of Gender Difference. Retrieved from <https://www.semanticscholar.org>.
- Berzonsky, M. D. (1990). Self-construction over the life-span: A process perspective on identity formation.
- Berzonsky, M. & Luyckx, K. (2008). Identity styles, self-reflective cognition, and identity processes: A study of adaptive and maladaptive dimensions of self analysis. *Identity: An International Journal of Theory and Research*, 8, 205-219.
- Berzonsky, M. D., & Sullivan, C. (1992). Social-cognitive aspects of identity style: Need for cognition, experiential openness, and introspection. *Journal of Adolescent Research*, 7, 140–155.
- Burns, R. (2016). Psychosocial Well-Being. Retrieved from DOI 10.1007/978-981-287-080-3-251-1
- Erikson, E. (1959). Identity and the life cycle. *Psychological Issues*, 1, 1-171.
- Leary, M.R., & Tangney, J.P. (2012). Self, Self-Concept, and Identity. *Handbook of Self and Identity*. Newyork.

- Lopez, M.G., Viejo, C., & Ruiz, R. (2019). Psychological Well-Being during Adolescence: Stability and Association with Romantic Relationships. Retrieved from <https://doi.org/10.3389/fpsyg.2019.01772>.
- Moe, Krista. (2012) Factors Influencing Women's Psychological Well-Being within a Positive Functioning Framework. University of Kentucky.
- Phillips, T. M., & Pittman, F. J. (2007). Adolescent Psychological Well-Being by Identity Style. *Journal of adolescence*.
- Ryff, C. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*.
- Ryff, C. D., & Keyes, C. L. M. (1995). The Structure of Psychological Well-Being Revisited. *Journal of Personality and Social Psychology*, 69, 719-727.
- Terezini. (1984). Influences on Students' Perceptions of their Personal Development during the First Three Years of College. *Research in Higher Education*. Retrieved from <https://www.jstor.org/stable/40195618>
- Wilson, J.L. (2011). Using Identity Processing Styles to Better Understand a Comprehensive status model of identity development. Ph.D Thesis. The Graduate Faculty of the University of Akron. Retrieved from <https://etd.ohiolink.edu>get>inline>.
- Vignoles, V., Schwartz. S.J., & Luyckx, K. (2011). Introduction: Toward an Integrative View of Identity. *Handbook of Identity Theory and Research*. Springer New York Dordrecht Heidelberg London.

PERSONALITY STYLES OF GRADE 10 STUDENTS AND ITS CORRELATION WITH THEIR LEARNING GAINS

Lei Yin Win¹ and Tin Maung Win²

Abstract

The primary purpose of this study was to investigate the personality styles of Grade 10 students and its correlation with their learning gains. A total of 712 Grade 10 students from Yangon and Bago regions were selected by random sampling technique. The Personality Style Questionnaire and Students Learning Gain Questionnaire were used as the research instruments. According to the survey data, Grade 10 students in this study could be classified into three groups; extrovert personality style (17.84%), introvert personality style (16.43%) and ambivert personality style (65.73%). T-test results showed that there was no statistical difference between personality styles of students by gender. Students in Bago are more extrovert than those in Yangon. Comparing students' learning gains, male students gained better in science when comparing female students. Students in Yangon attained higher scores in science subjects than students in Bago. Concerning the relationship between the personality styles and learning gains, the statistically significant positive relationship between the variables was found. Finally, the regression analysis was conducted in order to predict the Grade 10 students' learning gains by their personality styles and socio-economic status. The results revealed that father's education level and mother's profession were the predictors of students' learning gains for extrovert personality style, mother's education level and father's profession were the predictors of students' learning gains for ambivert personality style while father's profession and mother's education level were the predictors of students' learning gains for introvert personality style.

Keywords: Personality, Personality Style, Extroversion, Introversion, Learning Gain

Introduction

Importance of the Study

Human fascination with the concept of personality reached its peak in the 21st first century. Personality, in the world of education can directly affect the attitudes, perspectives and behaviors of both educators and students in terms of success and effectiveness in the classroom. Education aims at the enhancement of the human personality. Understanding personality of the students is central to motivate them. As different students have different personality styles and differences in their acquisition of skills, they need differentiated strategies from their teachers. As students differ in their personal values, they receive and process information differently, their personality types are distinct and so is their gain from the learning process.

Understanding the personality styles of learners is helpful for appreciating that why students are significant, in one's value, specific qualities and strengths, and that everyone should be treated with care and respect. To promote the use of effective learning styles, teachers and educators can help students to learn by their own personal interests and gain knowledge of what they really want to know by understanding their personality and emotional intelligence. Müller (2006) stated that students with different personality show different motivational orientations. Therefore, it is worthwhile to see how students' personality styles are related to their learning and what is gained in the students' mind.

Incorporating with the various personalities of the students into the teaching-learning process, the instructor will be able to effectively teach the students and in return, the students will be able to effectively learn the content material. Cohesion of students' personalities is vital for the enhancement of the learning process, and so in this study, the relationship between different

¹ Assistant Lecturer, Department of Educational Psychology, Hpa-an Education Degree College

² Deputy Director General, Department of Basic Education

personality styles of Grade 10 students and their learning gains in science subjects were explored (Anthony & Kelly, 2012).

Purpose of the Study

The primary purpose of the study was to investigate the personality styles and learning gains of Grade 10 students and to explore the relationship between personality styles and learning gains of Grade 10 students.

Definitions of key terms

Personality: Personality is more or less stable and enduring organization of a person's character, temperament, intellect and physique, which determine his adjustment to the environment (Eysenck, 1971).

Personality Style: Personality Style is the way of an individual's distinguishing characteristics, attitudes or habits, including the individual's unique way of thinking, behaving, or experiencing the environment (Myers & McCaulley, 1985).

Extroversion: Extroversion is defined as the source and direction of energy expression primarily in the external world for a person (Carl Jung, 1921).

Introversion: Introversion is defined as the source and direction of energy expression mainly in the internal world for a person (Carl Jung, 1921).

Learning gain: Learning gain in this study means that what the students actually gain or perceive knowledge and concepts into their mind based on the courses that they had learned (Smail & Jafar, 2007).

Review of Related Literature

Ortega (2009) described personality as stable traits or qualities in a very person, as more dynamic moods that are associated with the cognitive processing of emotions, or may be as predispositions that have been learned through social experience. Style is a term that refers to consistent and rather enduring tendencies or preferences inside an individual. Styles characterize a general or a lot of dominant patterns in one's thought or feeling. So, styles vary across people (Brown, 2007). Personality style or vogue has been outlined as a human's relatively consistent inclinations and preferences across contexts. The origin of personality style is in some incorporation of genetic inheritance and environmental influence.

Personality Theories in Psychology

The study of personality has an expand and varied history in psychology, with an abundance of theoretical underpinnings. The main theories consist dispositional or trait perspective, psychodynamic, humanistic, biological, behaviorist and social learning perspective.

Trait Theories

Allport (1937) explained that a trait could be fusion of habit and endowment instead of a colligation or chain of habits alone. The transformation of habit to trait is solely once the motivation shifts from simple conditioned responses to a sheer feeling of the activity as motivation. Then, the trait has become autonomous. According to Allport, traits are classified into three levels: Cardinal Traits, Central Traits, Secondary Traits.

A model of personality by British psychologist, Hans Eysenck (1916) characterized the types and traits that the foremost fundamental personality characteristics are inherited. Eysenck developed a model of personality based upon just simply three universal traits: Introversion/ Extraversion, Neuroticism/Emotional Stability and Psychoticism.

Lewis Goldberg (1978) proposed a five-dimension personality model which is well known as the Big Five: Extraversion-introversion, Openness to experience, Emotional stability-neuroticism, Agreeableness-antagonism are dimensions of Big Five.

Psychoanalytic Theories

In accordance with psychoanalytic models of personality, human are born with psychic energy that is remodeled and redirected throughout their traditional course of development into complicated human behavior. Psychoanalytic theorists assumed that behavior is just a surface temperament and that to really perceive someone's personality, it needs to investigate the symbolic meanings of behavior and the deep inner workings of the mind (Feist & Feist, 2002, as cited in Pervin, 2001). Neurologist, Sigmund Freud (1917) categorized human personality into three significant components: the id, ego, and superego.

Carl Jung (1921) alluded psychic energy into two basic general attitude types: introversion and extraversion. According to Jung, extraversion and introversion are not mutually exclusive and will be self-balancing or compensating through the conscious and unconscious.

Alfred Adler (1937) argued that all humans are born with the innate potential for social interest. Each person is absolute to interpret life in any range of ways owing to our inherent power. The inventive-self acts on hereditary materials to mold a unique personality. Since, if an individual develops a personality in contrast to the one that is suggested to characterize his or her birth order, it can even be attributed to the person's distinctive perceptions of the matters.

Behaviorist Theories

Behavioral theories discussed that personality may be a result of association between the individual and the environment. Behavioral theorists studied observable and measurable behaviors, rejecting theories that take inner thoughts and feelings into consideration. According to B.F Skinner, all behavior is a consequence of reinforcement; reinforcement increases the chance of that behavior whether positively or negatively. Therefore, the particular behavior chosen in a specific condition will depend on the expected outcome.

Social Cognitive Theories

Social cognitive theory stressed the social origins of behavior additionally to the cognitive thought processes that determine human behavior and functioning. Social-cognitive theories of personality have three defining characteristics. The first is the principle of reciprocal interactionism, or reciprocal determinism (Bandura, 1978, as cited in Cervone and Shoda, 1997). Human and social settings are considered as inversely interacting systems. The second defining feature of social-cognitive theory is the units of analysis through which that conceptualizes personality functioning and variations among individuals. Personality is conceptualized by reference to fundamental cognitive and affective structures and processes. These personality variables have social foundations (Bandura, 1986, cited in Cervone and Shoda, 1997), that is, they develop through experiences with one's sociocultural setting.

A third feature of social-cognitive theory is that it reacts personality as a more complex, dynamic system (Cervone & Shoda, 1997). Personality can be assumed as a system of dynamically interacting social-cognitive and affective processes. According to Bandura, learning can occur just outside the limits of pleasure and pain. Thus, people learn a great deal simply by watching or observing others, by studying about what people do, and by creating general observations of the society.

Humanistic Theories

Humanistic psychology emphasized that people have free will and they act an active role in determining the way they behave. Humanistic psychologists thought that these theories unheeded the qualities that make humans unique among animals, such as striving for self-determination and self-realization.

Carl Roger (1977) believed that personality fashioned as a result of one's strivings to succeed in his full human potential. Rogers (1977, as cited in Dagmar Pescitelli, 1996) expressed the human being as: capable of evaluating the outer and inner state, understanding oneself in its context, creating constructive choices as to the consecutive steps in life, and performing on those choices. Although in Rogers' view, personality change is certainly possible and is further a necessary part of growth, self-acceptance is a prerequisite.

Biopsychological Theories

Biopsychological theories outlined personality as a set of characteristics or traits that drive individual uniqueness in human behavior. From a biological perspective, these traits can be traced back to brain structures and neural mechanisms. In addition to the effect of human behavioral characteristics, some biological factors in formative years have been known as important determinants for education outcomes at later age. Kohara and Ohtake (1994) as cited in Stoll (2002) have found that birth weight is positively associated with education performances. One of the psychologists has revealed that relatively older children of both sexes at the school entry than their younger cohorts obtain higher test scores and more educational success. Cattell and Eysenck (1970) have projected that a genetic have a powerful influence on personality. Among the personality factors, some are thought to be controlled more by the genes than by the environment and some are more environmentally controlled.

Jung's Psychological General Attitude Types - Introverted and Extraverted

Carl Gustav Jung (1995) divided psychic energy into two basic general attitude types: Introverted and Extraverted. According to Jung (1995) as cited in Oche (2011) submitted that extroverted person feels energized in the midst of other people, and is more prone to tedium when he is alone. People who are high in extroversion tend to find out social stimulation and opportunities to interact with others, also manifested in outgoing, talkative and energetic behavior. On the other hands, Introversion showed in more reserved and often takes pleasure in solitary activities such as reading, writing, using computers, hiking and fishing. Jung (1995) defined introversion as an attitude-type characterized by orientation in life through subjective psychic contents focus on one's inner psychic activity and extroversion as an attitude type characterized by concentration of interest on the external object (the outside world).

Personality is a distinctive behavior and human nature, rising as a response to the stimuli each coming from the environment and self. Each student has unique and distinctive characteristics in behaving as well as in the learning process. A good learning process will result in a better learning achievement as well. As an educator is required to understand the characteristics of student personality in order that as educators we can provide stimulation or treatment in accordance with the personality type of learners encountered (Ariga, Sari & Amelia, 2007).

Method

Participants of the Study

A total of 712 Grade 10 students were selected as the participants by using simple random sampling technique from six Basic Education High Schools in Yangon and Bago Regions. Among them, 261 (36.66%) were male students and 451 (63.34%) were female students.

Instrumentation

To evaluate the personality styles of Grade 10 students, personality style questionnaire (PSQ) developed by Jung-Myers-Briggs (2012) was applied in the study. PSQ comprises 55 items and it is a three-point Likert-type questionnaire. The internal consistency (Cronbach's Alpha) of the whole Personality Style Questionnaire is 0.74. Students Learning Gains Questionnaire (SLGQ) was developed by the researcher based on the course that Grade 10 students had learned in science subjects, (such as Chemistry, Physics and Biology) and was designed to examine what the students actually gain or receive knowledge and concepts in science subjects and how much they could apply them in their real-life situation. The SLGQ consists of 50 items and each item is in the form of multiple-choice question with three possible alternatives. The internal consistency (Cronbach's Alpha) of SLGQ is 0.88.

Data Analysis and Findings

After developing the instruments, the personality styles of Grade 10 students from selected schools and their learning gains in science subjects were investigated. In this study, the students' demographic data such as gender, location, employment status of parents, and education level of their parents were also explored.

Table 1 Descriptive Statistics

Variable	Mean	SD	Minimum	Maximum
Extrovert Personality Style	68.33	6.42	44	99
Ambivert Personality Style	76.92	5.66	56	87
Introvert Personality Style	52.11	6.02	33	89
Student Learning Gain	35.95	6.45	18	49
Socio-economic Status	26.23	4.56	11	49

Based on the Descriptive analysis, the Myanmar Grade 10 students personality styles were identified into three groups: extrovert (17.84%), introvert (16.43%) and ambivert (65.73%). On the same way, the results obtained for student learning Gains Questionnaire revealed that the mean and standard deviation for SLGQ are (M = 35.95, SD = 6.45). Grade 10 students' learning gains were also classified into three groups: high learning gain group (20.93%), low learning gain group (17.13%) and average learning gain group (61.94%).

T-test was conducted to examine whether there was any significant differences between mean scores of personality styles by gender and regions.

Table 2 Comparison of Students' Personality Styles by Gender

Variable	Gender	M	SD	t	df	P
Extrovert	Female	69.10	6.54	1.82	703	.069
	Male	68.04	6.35			
Ambivert	Female	71.20	6.24	2.54	703	.201
	Male	68.94	6.53			
Introvert	Female	52.50	6.53	0.83	703	.408
	Male	53.04	5.83			

According to Table 2, students' personality styles did not differ by gender ($p > 0.05$).

Table 3 Comparison of Students' Personality Styles by Regions

Variable	Gender	M	SD	t	df	P
Extrovert	Bago	68.93	6.48	2.86	709	.004
	Yangon	67.54	6.27			
Ambivert	Bago	71.20	6.24	2.54	703	.201
	Yangon	68.94	6.53			
Introvert	Bago	51.47	5.95	-3.27	709	.001
	Yangon	52.94	6.02			

In accordance with Table 3, T-test result showed that extrovert personality style was statistically different by regions at $p = .004$ level while introvert personality was significantly different at $p = 0.001$ level. There was no statistically significant difference between mean scores of ambivert personality style by regions.

In order to find out whether there was a statistically significant difference between mean scores of student learning gains by gender and regions, T-test was also conducted.

Table 4 Mean Comparison of Students' Learning Gains by Gender

Variable	M	SD	t	df	P
Learning Gain			1.99	710	0.047
Male	36.58	6.03			
Female	35.58	6.66			

It revealed that there was a statistically significant difference between male and female students' learning gains ($p = .047$). So, it can be concluded that male students gained more knowledge and concepts in science subjects than female students since the mean score of male students' learning gains was higher than that of female.

Table 5 Mean Comparison of Students' Learning Gains by Regions

Variable	M	SD	t	df	P
Learning Gain			-2.75	710	0.006
Bago	35.37	6.62			
Yangon	37.70	6.15			

Learning gains of Grade 10 students was statistically different by location at $p = .006$ level. Students in Yangon Region resulted superior learning gains than those in Bago Region.

Correlation of Personality Style and Learning Gain and Family Socioeconomic Status

The major theme of this study was to explore if there was a relationship between the personality styles and learning gains of students and so Bivariate correlation was computed.

Table 6 Correlation of Personality Style, Learning Gain and Socioeconomic Status

No	2	3	4	5	6	7	8	9
1	0.122**	.196*	0.296**	.172**	0.230*	.041**	-.032	.260**
2	1	-.192*	-0.110**	.168	.027*	-.196*	-.077	-.187*
3		1	0.12	-.192**	-.083	.219	.142	.196**
4			1	-.43	.383**	.082	.139	.059
5				1	.321*	.029	.179	.093
6					1	.002	.241	.112
7						1	.225*	.152
8							1	.332*
9								1

*Correlation is significant at 0.05 level.

** Correlation is significant at 0.01 level.

1= Learning Gain, 2= Extrovert Personality Style, 3= Ambivert Personality Style, 4= Introvert Personality Style, 5= Father's Education Level, 6= Father's Profession, 7= Mother's Education Level, 8= Mother's Profession, 9= Location

Table 6 revealed that all the students' personality styles; extrovert, ambivert and introvert are positively correlated with their learning gains in science subjects. However, among these the personality styles, introvert personality style was more positively correlated with learning gains when compared to ambivert and extrovert personality style. The correlation between parents' socioeconomic status and the students' personality styles and learning gains were also described in the Table. Furthermore, in order to predict the Grade 10 students' learning gains by their personality styles, the simultaneous multiple regression analysis using backward elimination method was also conducted.

Table 7 Regression Analysis Summary for Extrovert Personality Style Predicting Students' Learning Gains

Predictors	B	β	t	R	R ²	Adj R ²	F
Constant	49.712		8.332*	.171	.029	.273	10.665*
Father's Education Level	1.076	.114	3.989**				
Mother's Profession	2.341	.154	4.231**				
Extrovert	0.147	.146	1.335*				

P* < 0.05, P** < 0.01

According to the multiple regression analysis, the results were statistically significant at $F(5,705) = 10.665$, $p < 0.05$. The beta weights, presented in the Table 7, suggested that mother's profession contributed most in predicting Grade 10 students' learning gains for extrovert personality style. R² for the model was .273 and the adjusted R² value was .273. This indicated that 27.3% of variance was explained by this model. Then the model can be defined as in the following equation.

Students' Learning Gains = 49.712 + 1.076 Father's Education Level + 2.341 Mother's Profession + 0.147 Extrovert Personality Style

Table 8 Regression Analysis Summary for Ambivert Personality Style Predicting Students' Learning Gains

Predictors	B	β	t	R	R ²	Adj R ²	F
Constant	5.836		7.964**	.568	.322	.218	13.688**
Mother's Education Level	0.287	0.012	1.228**				
Father's Profession	3.243	0.192	1.432**				
Ambivert	0.231	0.151	1.765**				

P* < 0.05, P** < 0.01

According to the multiple regression analysis, the results were statistically significant at F (6,704) = 5.836, p < 0.01. The results revealed that father's profession also contributed most in predicting Grade 10 students' learning gains for ambivert personality style. Then the model can be defined as in the following equation.

Students' Learning Gains = 5.836 + 0.101 Mother's Education Level + 0.660 Father's Profession + 0.178 Ambivert Personality Style

R² for the model was .322 and the adjusted R² value was .218. This indicated that 21.8 % of variance was explained by this model.

Table 9 Regression Analysis Summary for Introvert Personality Style Predicting Students' Learning Gains

Predictors	B	β	t	R	R ²	Adj R ²	F
Constant	30.086		6.964**	.320	.103	.197	11.695**
Father's Education Level	0.101	0.012	1.308**				
Mother's Profession	0.660	0.192	1.002**				
Introvert	0.178	0.151	1.545**				

P* < 0.05, P** < 0.01

According to the multiple regression analysis by using backward elimination method, the results were statistically significant at F (6,704) = 11.695, p < 0.01. The results revealed that mother's profession also contributed most in predicting Grade 10 students' learning gains for introvert personality style. Then the model can be defined as in the following equation.

Students' Learning Gains = 30.086 + 0.101 Father's Profession + 0.660 Mother's Education Level + 0.178 Introvert Personality Style

R² for the model was .197 and the adjusted R² value was .197. This indicated that 19.7 % of variance was explained by this model.

Conclusion and Suggestion

When teachers are aware of students' differences, they can adopt strategies that address the needs and concerns of all students. By learning more about Students' personality types it become to a more complete understanding of students' strengths and weaknesses, improve their interpersonal relationships, and gain a better discernment that may facilitate them outline and succeed goals.

As Lawrence (1996) explicated that a sign of a good teacher is the ability to flex one's teaching style to better fit the needs of those being taught. The more the teacher understand about the personality style of students, the more teacher may know not only how to adjust the way to

react with his or her pupils but also how to communicate, provide information for effective learning.

It is strongly urged that students ought to be instructed and cultivated with the values of possessing intrinsic motivation in learning and developing self-regulated learning strategies for making meaningful learning experiences. It should not be neglected one's personality and emotional intelligence, as they are necessary antecedents to influence students' learning motivation and learning strategies. Teachers, educators and educational psychologists are encouraged to concentrate to the students' development in personality when promoting their motivation and techniques to learn.

Limitations of the Study

Despite the contribution of this study, there are some limitations that need further examination and investigation. Since all survey data in this research were collected mainly from two regions; Yangon and Bago, so it may have limitations to the generalizability for the rest of the nation. And then, this study investigated Grade 10 students' learning gains in science subjects. It enhances the need to study student' learning gains in others subject areas in various fields. Next, Student Learning gain Questionnaire was constructed in the form of multiple choice items. Although multiple choice items are versatile that they can measure higher cognitive outcomes and they can provide diagnostic information, there may have the limitation of student bluffing and guessing.

Acknowledgements

I would like to render my respectful gratitude to Dr. Aye Aye Myint (Retired Rector of Yangon University of Education), Dr. Pyone Pyone Aung (Pro-Rector, Yangon University of Education), Dr. Kay Thwe Hlaing (Pro-Rector, Yangon University of Education) and Dr. Naing Naing Maw (Professor and Head of the Department of Educational Psychology, Yangon University of Education) for their official permission to do this research. I also deeply like to thank Dr. Tin Maung Win (Deputy Director General, Department of Basic Education) for his tolerance, understanding, and precious guidance in amending textual material, generous advice, inspiration, kindly editing and reviewing of this research and most importantly, his encouragement throughout the study. I would like to extend my special thanks to Daw Myint Myint Mar (Retired Lecturer, Department of Educational Psychology, Yangon University of Education) for her critical assessments, invaluable suggestions, comments, guidance and the help for the statistical computing and programming needs in writing this research. Moreover, I am particularly grateful to all the teachers from the Department of Educational Psychology, Yangon University of Education for their kindly editing to research instrument, understanding, warm support and valuable comments and suggestions. And I would like to give special thanks to all the participants of this study.

References

- Allport, G.W. (1937) *Personality: A psychological interpretation*. New York: Henry Holt and Company.
- Anthony, J. P. & Kelly, L. M. (2012) "The Role of Personality in K-12 Education." *The Journal of Nursery Education*, vol. 19, pp. 13-15.
- Ariga, R. A., Sari, S., & Amelia, R. (2007) "Relationship of extrovert and introvert personality types against student achievement of secondary school students." *American Psychologist*, vol. 37, pp. 7-11.
- Brown, H. D. (2007) *Principles of language learning and teaching*. New York: Longman.
- Cervone, V., & Shoda, Y. (1997) *The coherence of personality: Social-cognitive bases of consistency, variability, and organization*. New York: Guilford.
- Eysenck, H. (1971). Reading in Extraversion- Introversion. *Bearings on Psychological Processes*. London, vol. 3, pp. 216-223.
- Freud, S. (1961) "The ego and the id." *Psychological Bulletin*, vol. 75, pp. 203-219.
- Jung, C.G. (1921) *Psychological Types*. New Jersey: Princeton University Press.
- Lawrence, G. (1996) "The Relationship between Personality Characteristics and Academic Success in high school." *Evaluation and Research in Education*. vol. 16, No. 2.

- McAdams, D. P. (1992) "Personality, modernity, and the storied self: A contemporary framework for studying persons." *Psychological Inquiry*, vol. 7, pp. 295–321.
- Mischel, W., & Shoda, Y. (1995) "A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure." *Psychological Review*, vol. 102, pp. 246–286.
- Müller, F.H., Palekčić, M., Beck, M., & Wanninger, S. (2006) Personality, motives and learning environment as predictors of self-determined learning motivation. *Review of Psychology*, vol. 13 (2), pp. 75-86.
- Myers, I. B., & McCaulley, M. H. (1985) *Manual: A guide to the development and use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologists Press.
- Myo Ko Aung (2012) The Relationship Between Personality and Learning Styles of Myanmar Students Teachers. PhD Thesis, Yangon University of Education (Unpublished).
- Ortega, L. (2009) *Understanding Second Language Acquisition*. London, Hodder Education.
- Pescitelli, D. (1996) An Analysis of Carl Rogers' Theory of Personality. Retrieved December 23, 2011 from <http://www.wynja.com/personality/rogersff.html>
- Richard, L. & Terence, M. (1997) "Differences in Extroversion, Neuroticism and Psychoticism in 37 Nations." *Journal of Social Psychology*, vol 137, pp. 369-374.
- Smail, L. & Jafar, R. (2007) "The relationship between students' personality types and their success." *Journal of Mathematics, Statistical and Allied Fields*, vol. 1, pp. 22-26.
- Stoll, L. (2002) School culture. *Research Information for Teachers*, vol. 3, pp. 9-14. Retrieved November 26, 2012 from <http://en.wikipedia.org/wiki/Academic-achievement>
- Wiley, J. (2009) "Personality and culture." *European Journal of Personality*, vol. 23 (3), pp. 149-152.

TEACHERS' ATTITUDES TOWARDS GRADE THREE CURRICULUM DEVELOPMENT

May Tharaphi Aung¹ and Myint Sann²

Abstract

The purpose of this study was to investigate the teachers' attitudes towards Grade Three curriculum development. The study group was composed of 210 Grade Three teachers from two regions. The research was conducted through quantitative approach. The questionnaire was mainly based on "Trend in International Mathematics and Science Study (TIMSS, 2015)". The modification process of attitude scale involved taking expert opinions and a pilot study on determining the structural validity and reliability. The scale as a result of analysis consisted of 32 items which were rated on 5-point Likert-scale. The questionnaire composed of six factors. These factors were called teacher's participation (8 items), cooperation (8 items), resources (4 items), inclusion (5 items), achievement (3 items) and assessment (4 items). In order to study, mean and standard deviation on teachers' attitudes, descriptive statistics was used. According to the obtained data, the mean percentage of teachers' attitudes towards Grade Three curriculum development was 76.17%. By using independent sample t-test and one way analysis of variance (ANOVA) with the help of the Statistical Package for Social Science (SPSS) version 22.0, there was no significant difference by gender, region, aged groups, curriculum training and teaching services. But, significant difference was found in types of degree and teacher training. It is found that teachers who got teacher training have higher attitude towards Grade Three curriculum development. The result of the study showed that most teachers have positive attitudes with respect to the new curriculum.

KeyTerms: attitude, curriculum, curriculum development

Introduction

Education provides a foundation for development, the groundwork on which much of our economic and social well-being is built. Education gives people the skills they need to help themselves out of poverty or, in other words, into prosperity. If one got quality education then he is able to a better job than a labor's work. Primary education is an out-and-out pre-requisite for continuous development. The role of primary education is to ensure the development of children. This means that all children are able to develop their social, cognitive, cultural, emotional and physical skills according to the best of their abilities. The curriculum is one of the dynamic indicators for the internal efficiency of an education system. The curriculum is more concerned with qualitative aspects of education, but quantitative aspects such as dropout and repetition rates, the number of few-teacher (understaffed) schools and examination results are closely related to the curriculum.

Moreover, factors influencing the curriculum are aim and objectives, organization, time allocation, subject content, methodologies, teacher competencies, testing and evaluation techniques, form of learning materials, variety of teaching-learning aids, teacher workload, management and supervision system. Curriculum study is primarily related to what is taught, why, how well and to what ends it is taught and what efforts are made to promote assess to education. The curriculum change usually takes place when the present curriculum is unsatisfactory.

Importance of the Study

A curriculum is important in an educational system. It helps one plan the education process or procedure for a given period of time (a term, session, lesson period, etc.). We are

¹ Senior Assistant Teacher, No (9) B.E.H.S (Branch), North Okkalapa Township, Yangon Region

² Associate Professor, Department of Educational Psychology, Yangon University of Education

living in an inquiring and innovation-oriented society. The demand of twenty first century is novelty, creativity, and integration of knowledge at global level, research, critical and analytical thoughts. Rapidly social changes are creating uncertainty and complexity in the society. To prepare the children and youth to cope with the present situation needs to develop analytical and critical thinking, skill and attitude that would make them more flexible and innovative to deal with uncertainty and crises at national and global level. Hence for a society to achieve its educational goals, it needs a curriculum that is functional and relevant to its needs. For the curriculum development process to be successful, site and district leadership need to be available and open to working with teachers and curriculum developers as well. The Ministry of Education, the curriculum is centrally managed.

The most important person in the curriculum implementation process is the teacher. With their knowledge, experiences and competencies, teachers are central to any curriculum development effort. Better teachers support better learning because they are most knowledgeable about the practice of teaching and are responsible for introducing the curriculum in the classroom. If another party has already developed the curriculum, the teachers have to make an effort to know and understand it. So, teachers should be involved in curriculum development. For example, teacher's opinions and ideas should be incorporated into the curriculum for development. On the other hand, the curriculum development team has to consider the teacher as part of the environment that affects curriculum (Carl, 2009). Hence, teacher involvement is important for successful and meaningful curriculum development. Teachers being the implementers are part of the last stage of the curriculum development process. Teachers are the key players in the education sector and it is important that they play a central role in the curriculum reforming. Any change in the curriculum and its practice is successful with the wholehearted cooperation and support of the teachers, who are supposed to implementing the changes at the grass root realities. The teachers are the instruments through which the curriculum is to be transacted and fulfilled. Hence, the attitude and perception of teachers with respect to curriculum and its implementation is very significant. Thus their attitudes on curriculum development are of important. Besides, teachers' positive attitudes led to success in implementing the new curriculum. By this study, the stakeholders and education officers can realize the teachers' attitudes on curriculum development.

Purpose of the Study

Main Purpose

The main purpose of the present study is to investigate the teachers' attitudes towards Grade Three curriculum development.

Specific Purposes

The specific purposes of this study are:

- (1) To find out the teachers' attitudes towards Grade Three curriculum development by gender and region,
- (2) To find out the teachers' attitudes towards Grade Three curriculum development by aged groups, and
- (3) To examine the teachers' attitudes towards Grade Three curriculum development by types of degree, teacher training, curriculum training and teaching service of the teachers

Definitions of Key Terms

Important terms are carefully defined in explaining the concepts underlying the development of the investigation.

- (1) **Attitude:** An attitude is a negative or positive evaluation of an object which influences human's behavior towards that object. (Michael Hogg)
- (2) **Curriculum:** Curriculum is all the experiences learners have under the guidance of the school. (Blond's encyclopedia, 1969)
- (3) **Curriculum development:** Curriculum development can be defined as the systematic planning of what is taught and learned in schools are reflected in courses of study and school programs.

Methodology

Research Design

Quantitative research design and questionnaire survey method were used to assess the study.

Participants of the Study

The participants in this study were selected from Grade Three teachers of basic education schools in North Okkalapa and Pandaung Townships. All the participants were selected randomly. The sample size consisted of 210 primary teachers from basic education sector in January 2020.

Research Instrument

The instrument is mainly based on "Trend in International Mathematics and Science Study" (TIMSS, 2015) and the researcher revised some parts of the questionnaire according to the nature of education in Myanmar. After preparing the instrument, expert review was conducted for face validity and content validity by eight experts from Yangon University of Education who have special knowledge and close relationship in the field of educational psychology, educational test and measurement. Then the wording and phrases of some items were modified since they were inappropriate with participants' understanding level. Some of the items were also modified according to the advice of the experts. Finally, the questionnaire consisted of 32 items was developed. The participants were asked to specify their level of agreement to a statement typically in five points: (1) Strongly Disagree; (2) Disagree; (3) Neither Agree nor Disagree; (4) Agree; (5) Strongly Agree. This 5-point Likert-scale questionnaire consists of six subscales, namely teachers' participation (8 items), cooperation with others (8 items), resources (4 items), inclusion (5 items), achievement (3 items) and assessment (4 items).

Data Analysis and Findings

To identify teachers' attitudes towards Grade Three curriculum development, descriptive statistics was carried out and the results were shown in Table 1. According to Table 1, these results showed that teachers' attitudes towards Grade Three curriculum development were beyond moderate level with 76.17%.

Table 1 Descriptive Statistics for Teachers' Attitudes towards Grade Three Curriculum Development

Variable	N	Mean	Mean%	SD	Min.	Max.
Teachers' Attitudes	210	121.87	76.17%	8.987	101	152

Note: Mean% = Mean Percentage, SD = Standard Deviation

The attitude questionnaire includes six subscales of teachers' attitudes namely: participation, cooperation, resources, inclusion, achievement and assessment. To explore teachers' attitudes towards Grade Three curriculum development with respect to these six subscales, descriptive statistics was carried out and the results were shown in Table 2. According to the results in Table 2, it may be interpreted that most of the teachers cooperate actively in new curriculum development but there is still a need for teachers to be able to link lessons to real life.

Table 2 Descriptive Statistics for Each Subscale of Teachers' Attitudes towards Grade Three Curriculum Development

Subscales	N	No. of Items	Mean	Mean%	SD	Min.	Max.
Participation	210	8	32.18	80.45%	2.451	25	39
Cooperation	210	8	33.63	84.08%	2.834	24	40
Resources	210	4	12.70	63.50%	1.841	8	19
Inclusion	210	5	16.73	66.92%	2.782	11	25
Achievement	210	3	12.57	83.80%	1.312	6	15
Assessment	210	4	14.05	70.25%	2.788	6	20

Note: Mean% = Mean Percentage, SD = Standard Deviation

Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Gender

To investigate whether there was any difference in teachers' attitudes towards Grade Three curriculum development based on gender; independent sample *t*-test was conducted. In this study, the number of male teachers is much less than that of the female teachers. For the attitudes towards Grade Three curriculum developments, the mean score of female teachers was higher than that of male teachers from selected schools but significant difference can't be observed by gender. It could be interpreted that the male and female teachers had similar general attitude on the new curriculum.

Table 3 Mean Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Gender

Variable	Gender	N	Mean	SD	df	t	p
Teachers' Attitudes	Male	25	119.80	6.513	208	-1.227	0.221
	Female	185	122.15	9.249			

Note: SD = Standard Deviation

Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Region

The study was carried out in two different townships: North Okkalapa Township from Yangon Region and Pandaung Township from Bago Region. In order to observe whether there were significant differences in the teachers' attitudes towards Grade Three curriculum development by region, the independent sample *t*-test was carried out. The mean scores of male and female teachers were shown in Table 4. From the results of Table 4, the mean score of Grade Three teachers from Region 2 was higher than that of Region 1 but there was no significant difference.

Table 4 Mean Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Region

Variable	Regions	N	Mean	SD	df	t	p
Teachers' Attitudes	Region 1	113	121.45	8.833	208	-0.722	0.471
	Region 2	97	122.35	9.186			

Note: SD = Standard Deviation

Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Aged Groups

In addition, it is necessary to observe whether there was significant difference in teachers' attitudes towards Grade Three curriculum development by the aged groups. The descriptive analysis was conducted and one way analysis of variance (ANOVA) was also conducted. From the Table 5, the mean score of aged 31-40 teachers is slightly higher than that of other aged groups teachers but there was no significant difference among aged groups in teachers' attitudes.

Table 5 Mean Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Aged Groups

Variable	Aged Groups	N	Mean	SD	df	F	p
Teachers' Attitudes	aged 21-30	85	121.88	9.061	206	0.256	0.857
	aged 31-40	48	122.75	8.881			
	aged 41-50	22	121.18	9.595			
	aged above 50	55	121.35	8.903			

Note: SD = Standard Deviation

Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Types of Degree

The descriptive statistics was carried out for the teachers' attitudes towards Grade Three curriculum development by types of degree. According to Table 6, the mean score of B.Sc teachers was higher than B.A teachers. And it was found that there was significant difference between types of degree at 0.01 level. It can be interpreted that science degree holder teachers have higher attitude on Grade Three curriculum development than art degree holder teachers.

Table 6 Mean Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Types of Degree

Variable	Types of Degree	N	Mean	SD	df	t	p
Teachers' Attitudes	B.A	96	119.83	7.585	208	-3.069**	0.002
	B.Sc	114	123.58	9.724			

**The mean difference is significant at the 0.01 level.

Table 7 Mean Comparisons for Each Subscale of Teachers' Attitudes towards Grade Three Curriculum Development by Types of Degree

Subscales	Types of Degree	N	Mean	SD	df	t	p
Participation	B.A	96	31.90	2.544	208	-1.552	0.122
	B.Sc	114	32.42	2.353			
Cooperation	B.A	96	33.23	2.503	208	-1.908	0.058
	B.Sc	114	33.97	3.055			
Resources	B.A	96	12.43	1.640	208	-1.986*	0.048
	B.Sc	114	12.93	1.972			
Inclusion	B.A	96	16.29	2.550	208	-2.129*	0.034
	B.Sc	114	17.11	2.922			
Achievement	B.A	96	12.34	1.034	208	-2.283*	0.023
	B.Sc	114	12.75	1.485			
Assessment	B.A	96	13.65	2.776	208	-1.952	0.052
	B.Sc	114	14.39	2.764			

*The mean difference is significant at the 0.05 level.

From the Table 7, there were significant differences in resources, inclusion and achievement subscales of teachers' attitudes between types of degree at the 0.05 level. It can be interpreted that science degree holders have high ability in facilitating students, self-improvement for career, effective teaching and encouraging students and caring for students' achievement.

Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Teacher Training

In order to examine whether there was significant difference in teachers' attitudes towards Grade Three curriculum development by teacher training, the independent sample t-test was conducted and the data were presented in Table 8. Based on the results from Table 8, the mean score of teachers who got the teacher training was higher than the teachers who didn't get the training. There was significant difference between with and without teacher training. To obtain more information, the independent sample t-test was carried out again to find out the significant differences in each subscale. The results can be seen in Table 9.

Table 8 Mean Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Teacher Training

Variable	Teacher Training	N	Mean	SD	df	t	p
Teachers' Attitudes	With Training	109	123.05	9.095	208	1.989*	0.048
	Without Training	101	120.59	8.736			

*The mean difference is significant at the 0.05 level.

From the Table 9, the mean score of teachers who got teacher training was higher than in each subscale than the teachers who didn't get the training. There were significant differences of teachers' attitudes towards Grade Three curriculum development in participation and inclusion subscales at 0.05 level. Thus, it can be interpreted that the teachers who got teacher training realized the aims and processes of the new curriculum. Then, they can become effective and successful teachers.

Table 9 Mean Comparisons for Each Subscale of Teachers' Attitudes towards Grade Three Curriculum Development by Teacher Training

Subscales	Teacher Training	N	Mean	SD	df	t	p
Participation	With Training	109	32.50	2.367	208	2.002*	0.047
	Without Training	101	31.83	2.502			
Cooperation	With Training	109	33.85	2.857	208	1.169	0.244
	Without Training	101	33.40	2.804			
Resources	With Training	109	12.77	1.980	208	0.577	0.565
	Without Training	101	12.62	1.684			
Inclusion	With Training	109	17.16	2.809	208	2.311*	0.022
	Without Training	101	16.28	2.691			
Achievement	With Training	109	12.62	1.373	208	0.655	0.513
	Without Training	101	12.50	1.246			
Assessment	With Training	109	14.14	2.920	208	0.459	0.646
	Without Training	101	13.96	2.649			

*The mean difference is significant at the 0.05 level.

Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Curriculum Training

To investigate the difference in teachers' attitudes towards Grade Three curriculum development by the number of curriculum training, the descriptive analysis was conducted and one way analysis of variance (ANOVA) was also conducted. Based on Table 10, the mean score of teachers who attended the curriculum training for four times was higher than the others. But there was no significant difference.

Table 10 Mean Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Curriculum Training

Variable	Curriculum Training	N	Mean	SD	df	F	p
Teachers' Attitudes	Once	10	122.20	7.627	206	1.170	0.322
	Twice	52	119.88	8.775			
	Thrice	82	122.30	8.761			
	Fourth	66	122.83	9.551			

Note: SD = Standard Deviation

Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Teaching Service

To find out whether there were significant difference in teachers' attitudes towards Grade Three curriculum development by teaching service, descriptive analysis and one way analysis of variance (ANOVA) were conducted. The results were given in Table 11. According to Table, there was no significant difference among service groups in teachers' attitudes towards Grade Three curriculum development.

Table 11 Mean Comparison of Teachers' Attitudes towards Grade Three Curriculum Development by Teaching Service

Variable	Teaching Service	N	Mean	SD	df	F	p
Teachers' Attitudes	1-10 yrs	117	121.87	9.013	206	1.374	0.252
	11-20 yrs	28	124.00	9.059			
	21-30 yrs	30	122.57	9.573			
	Above 30 yrs	35	119.54	8.140			

Note: SD = Standard Deviation

Discussion, Suggestions, and Recommendation

The findings in this study highlighted that the teachers have a positive attitude towards the new curriculum in Myanmar. The new curriculum is excellent as it is a combination of teaching and practices. Moreover, it instills a collaborative practice that allows students to participate themselves in the teaching-learning process. The new curriculum is completely suitable for students in Myanmar and has a positive impact on children's education. However, the curriculum will be less successful if the teachers are not qualified. The teachers themselves have to study hard and have discussions with each other to adapt to the changing education. The teachers can become skilled teachers by providing training courses. Thus, the new curriculum enhances not only children's education but also the ability of teachers.

The availability of specialized teachers in co-curricular subjects (music, art, physical education, domestic subject) is also an important factor in the implementation of the new curriculum. It will be difficult to develop a new curriculum without sufficient teachers, school buildings, teaching materials and efficient training. In remote schools, teaching materials may not be timely and can be difficult to teach the lessons effectively. By investigating the attitudes of teachers with six aspects, it reveals that most of the teachers have positive attitudes. The authorities has to give more mass orientation program to the teachers with respect to the new curriculum, its philosophical, psychological and educational background and thereby create an atmosphere to accept positive changes in the field. Another factor noticed by the researcher while interacting with the teachers is that majority of them is not aware of the philosophy behind the new curriculum and the trend of curriculum reforms occurring in Myanmar. Therefore, the curriculum training needs to be organized and implemented more effectively. The main reason for changing the curriculum is to steer the students from learning by-heart to a state in gaining the ability to be able to memorize the lesson in a way of critical thinking. The updated curriculum will discourage the practice of rote-learning and will ensure that students grow as independent thinkers with their own sense of creativity. However, it is also important to look at when the relationship between plan and reality is not always in harmony.

The research was conducted with the use of small sample size that cannot represent the whole teachers in Myanmar. Only the attitudes of government school teachers were surveyed. Only the survey questionnaire was used. The targeted population was chosen from only two regions. The future researchers should conduct the study with large sample sizes. Attitudes of monastic and private school teachers should also be considered. This research was conducted with quantitative only. Therefore, further study should be conducted qualitative study, observations, and in-depth interviews with teachers' attitudes in order to support the finding of the study. In the case of a study of teachers' attitudes, target population should be more representative.

Conclusion

The main purpose of the study was to investigate teachers' attitudes towards Grade Three curriculum development. Thus, the researcher conducted an investigation by using the

quantitative survey method. The total of 210 primary teachers was chosen as a sample from Yangon and Bago regions. The questionnaire was adapted from “Trend in International Mathematics and Science Study (TIMSS, 2015)”. By using the descriptive procedure with the data obtained from the self-reported questionnaire, teachers’ attitudes can be estimated. Descriptive analyses revealed that the mean and standard deviation of teachers’ attitudes of the whole sample is 121.87 and 8.987. This finding showed that teachers in this study had high attitudes towards Grade Three curriculum development. When the mean scores of six subscales (teachers’ participation, cooperation, resources, inclusion, achievement, and assessment) were compared, it was found that the mean score of teachers’ attitudes was highest in cooperation and lowest in achievement. It may be interpreted that most of the teachers cooperate actively in new curriculum development but there is still a need for teachers to be able to link lessons to real life.

The independent sample t-test was conducted to investigate gender differences on attitudes of Grade Three teachers. It was found that there was no significant difference in teachers’ attitudes by gender. But, the mean score of female teachers was higher than that of male teachers from selected schools. And it was also found that there was no significant difference in attitudes of Grade Three teachers by region. But the mean score of Grade Three teachers from region 2 was higher than that of region 1. Then, ANOVA was conducted to examine if there was significant difference in aged groups, curriculum training and teaching service. The results showed that there were no significant differences among aged groups, curriculum training and teaching service in teachers’ attitudes towards Grade 3 curriculum development.

After conducting the independent sample t-test, it was found that there was significant difference in teachers’ attitudes towards Grade Three curriculum development between types of degree at 0.01 level. It can be interpreted that science degree holder teachers have higher attitude on Grade Three curriculum development than art degree holder teachers. In order to examine there was significant difference in teachers’ attitudes towards Grade Three curriculum development by teacher training, the independent sample t-test was conducted. Then, it was found that there was significant difference in teachers’ attitudes by teacher training. The mean score of teachers who got the training was higher than the teachers who didn’t get the training. To obtain more information, the independent sample t-test was carried out again. By studying the results, the mean score of teachers who got training was higher in each subscale than the teachers who didn’t get the training. Thus, the teachers who got teacher training realized the aims and processes of the new curriculum. Then, they can become effective and successful teachers.

Acknowledgement

Firstly, I would like to thank all of the teachers I have had throughout my life that have inspired me and encouraged me to always put forth my best effort. Their support, encouragement, and passion have shaped who I am today. I would like to express profound and sincere thanks to Dr. Pyone Pyone Aung (Pro-Rector, Yangon University of Education) and Dr. Kay Thwe Hlaing (Pro-Rector, Yangon University of Education) for their administrative supports and their official helps in this study. I would like to express my special gratitude to Dr. Naing Naing Maw (Professor/ Head, Department of Educational Psychology, Yangon University of Education) for her previous guidance and suggestions. I also wish to convey my acknowledgement to Dr. Daw Sann Win (Professor, Department of Educational Psychology, Yangon University of Education) for her valuable suggestions and critical remarks on this study.

I am most grateful to my academic supervisor, Daw Myint Sann (Associate Professor, Department of Educational Psychology, Yangon University of Education) for her valuable academic guidance, great support and encouragement, painstaking help and overall supervision throughout the entire course of this paper. Besides, her great help in amending textual material, editing and reviewing is essential in carrying out this research. I would like to express my heartfelt gratitude to all my teachers from Department of Educational Psychology, Yangon University of Education, for their expert judgments, valuable comments and kind help for this study. I am deeply grateful to the Township Education Officers in North Okkalapa and Pandaung Townships for their permissions to conduct the research. I wish to thank all the headmasters and headmistress and all the participants teachers from North Okkalapa and Pandaung Townships for their support and participation in the survey. Thank you my dear friends for always

sticking by me and working side-by-side with me throughout this degree. I could not have done it without you. Thank you to my family for the encouragement and support throughout my education. You have been a great source of strength for me. Finally, I would like to extend my thanks to the librarian and staff members of the library of Yangon University of Education

References

- Aggarwal, J. C. (2010). Blond's Encyclopedia of Education (1969). Theory & Principles of Education, 13th Edition. VIKAS Publishing House PVT Ltd.
- Carl, A. E. (2009). Teacher empowerment through curriculum development: Theory into practice (3rd ed.). Cape Town: Juta and Company Ltd.
- Curriculum Development – Learning Resource Center – Google Sites. <https://sites.google.com/ub.edu.ph>
- Study and Exam (2018). Attitude – Definition, Components & Characteristics – StudyandExam. <https://www.studyandexam.com>
- Timss (Trends in International Mathematics and Science Study (2015). Teacher Questionnaire Mathematics. TIMSS & PIRLS International Study Center: Lynch School of Education, Boston College.

AN INVESTIGATION INTO LEARNING STYLES OF GRADE NINE STUDENTS

Ei Cho Phyo¹ and Myint Sann²

Abstract

The main purpose of the study was to find out the learning styles of Grade 9 students. A total of 240 Grade 9 students (2019-2020 Academic Year) from four selected high schools in Yangon Region participated in this study. The participants were chosen through simple random sampling method. Students' learning styles were measured by Barsch Learning Style Inventory (BLSI) developed by Jeffery Barsch, EdD (2007). The instrument had a reliability of (Cronbach alpha= 0.714). Data were collected by using a questionnaire survey method and quantitative research design. Data were analyzed by descriptive analysis technique, using Chi-square test with the help of the Statistical Package for Social Science (SPSS) version 22.0. Based on the descriptive analyses, this study revealed that majority of Grade 9 students 175 (72.92%) were unimodal learning style (one strong dimension), 57 (23.75%) of the students were bimodal learning style (two strong dimension), and 8 (3.33%) of the students were trimodal learning style (three strong dimension). Result of Chi-square test showed that there was no significant association between learning styles and gender ($\chi^2=.581$, $df= 2$, $N= 240$) in this study. Based on the result, there was no significant association between learning styles and age groups of Grade 9 students ($\chi^2=3.112$, $df= 4$, $N= 240$). Based on the Chi-square test, the result also revealed that there was a significant association between learning styles and schools of Grade 9 students ($\chi^2=14.302$, $df= 6$, $N=240$, $p<0.05$). Most of the students prefer unimodal learning styles such as visual, auditory, tactile, and kinesthetic learning style than bimodal and trimodal styles in this study.

Keywords: learning style, visual learning, auditory learning, kinesthetic learning

Introduction

A student's ability in the classroom depends not only on his prior preparation but more on his characteristic approach to learning. As Felder and Henriques (1995), "Students learn in many ways, by seeing and hearing; reflecting and acting; reasoning logically and intuitively; memorizing and visualizing". According to Sternberg (1997), learning styles are the general approaches to learning a particular item. This message is; "no learner can be the same because of different individual characteristics". Utilizing awareness of learning styles within the educational background promotes more effective learning and hence improved academic achievement. The instructors can respond to individual's strengths and weaknesses, then retention and achievement rates in formal programs are like to rise and learning to learn skills provide a foundation for lifelong learning.

Based on Yaakub and Hashim (2004), gave a different view, stating that learning is a mental, physical, and spiritual activity. It is a process that changes one's manner and behaviors, which develops continuously and consistently, thus enabling the individual to use those knowledge and skills for their own progress and also for the society. Theorists agree that students possess different learning styles, which are characteristic strengths and preferences in this way they take in and process information. Although most people can learn in a variety of ways, each has their own preferred way, i.e. the way that is easiest (Dunn, 1996). Some students like to focus on facts and algorithms, but others are better suited to math and theories. There are students who respond better to visual information, such as pictures, charts, and diagrams. Others learn more linguistically-written and spoken explanations. Some students learn actively and do well in a cooperative group, and others prefer to work individually (Felder, 1996).

¹ Junior Teacher, B.E.H.S (6) South Dagon Township, Yangon Region

² Associate Professor, Department of Educational Psychology, Yangon University of Education

Importance of the Study

Learning styles are the mental processes and instrumental settings a student uses most effectively while learning (More, 1993). Students are characterized by different learning styles, preferentially focusing on different types of information and tending to operate on perceived information in different ways. According to Jantan and Razali (2002), psychologically, learning style is the way the student concentrate, and their method in processing and obtaining information, knowledge, or experience. Whereas Mok (2003), defines learning style as learning approaches as preferred by student. On the other hand, from the cognitive aspect, learning style can be referred to various methods in perception creation and information processing to form concepts and principles (Fleming & Baume, 2006).

Learning is a life-long process and is a continuous and never-ending improvement. Learning as a description of attitudes, behaviors that influence ones preferred way of learning (Honey & Mumford, 1992). The awareness of a student's own reasons and perceptions on learning is essential for a teacher to help students attain learning (Sincero, 2011). A teacher should be creating an environment to fulfill the demand of students' various learning styles, as well as knowing the importance of teaching by using various learning styles (Drago & Wagner 2004). It can be summarized that learning styles are styles or individual learning technique that act with its environment, to process, interpret and obtain information, experiences or desirable skills. Teachers should be creative in diversifying education techniques in class by being sensitive with students' learning needs.

Purpose of the Study

The main purpose of this research is to investigate learning styles of Grade 9 students from selected high schools in Yangon Region.

Specific Objectives

- To find out the learning styles of Grade 9 students by gender
- To assess the learning styles of Grade 9 students by age, and by school

Definitions of Key Terms

Learning Styles	:	Learning styles are the composite of cognitive characteristics, affective and psychological factors that influence individual interact and respond to learning environments (Duff and Duffy's 2002).
Visual Learning	:	The visual learning style means that people need to see information to learn it, and this "seeing" takes many forms from spatial awareness, photographic memory, color/tone, brightness/contrast, and other visual information (Neil Fleming 1995).
Auditory Learning	:	Auditory learning is a learning style in which an individual learns through listening (Neil Fleming 1995).
Kinesthetic Learning	:	Kinesthetic learning is a learning style in which learning takes by the student actually carrying out a physical activity, rather than listening to a lecture or merely watching a demonstration (Neil Fleming 1995).

Literature Review

Learning is a lifelong process and is a continuous improvement. Learning has been defined as the change due to experience by Jonassen and Grabowski in 1993. Learning style as a preferred approach of learning was accepted by an individual student. Dunn and Dunn (1978) referred learning style as an individual's way to concentrate his attention so as to understand and remember a certain information or new skill. Every individual is born with his own learning style. According to Coffield (2004), family inheritance and the environment play an important role in formulating an individual's learning style. Students who lack the confidence about their learning it can be motivating to find out new ways to describe and explore their behavior for improving their learning. Moreover, physiological learning styles have to do with visual, auditory, tactile, and kinesthetic preferences of the learner.

Fleming's Learning Style Theory

One of the most common used theories in learning style field is Neil D Fleming VAK model. VAK constructs for Visual, Auditory, and Kinesthetic (Tactile). The theory is that one prefers to learn through one of these sense channels. According to Fleming, as a teacher, ones' best option is to use a variety of teaching techniques to provide all students the best chance to succeed. Further, most people dominate a dominant or preferred learning style, however some people have a mixed and evenly balanced blend of the three types: visual, auditory, and kinesthetic (Fleming, 1995). Based on Fleming (2006), aural mode students tend to attain information by discussion and listening. For reading mode, these students have the ability to accept and interpret printed information. For visual mode, the students are more upright to accept learning through interpreting charts, graph figures, and pictures, while kinesthetic mode learns more towards accepting learning based on behavior such as touch, feel, see, and listen. Fleming and Baume (2006) shows the teacher's teaching method would reflect the tendency of their own learning style compared to the students' learning style. Some people learn by seeing (Visual); some people learn by hearing (Auditory); some people learn by doing (Tactile/Kinesthetic). During childhood, each person advances through various stages of each style. Young children are all kinesthetic learners. Visual and auditory preferences appear later. Each person is born with tendencies toward one main style. The dominant style may not always be the same, across different settings.

Visual Learning: They learn through vision. They think in pictures and learn best from visual displays – body language, facial expressions, written information, charts and diagrams, illustrations in books and videos. Viewing and reading are described to be important for visual learners. Pictures, tables, demonstrations, handouts, and mind maps are very beneficial for these kinds of learners. They profit from reading, visual, writing or drawing concepts, and like written instructions.

Auditory Learning: An auditory learner depends on hearing and speaking as the primary style of learning. They have the ability to follow verbal instructions readily and prefer to hear information rather than read it. An auditory learner remembers tasks well and benefits from traditional styles of teaching /lectures/ question and answer sessions. Auditory learners are good at writing responses to lectures they have heard. They are also good at oral exams and learn effectively by listening to information delivered orally, in lectures, speeches, and oral sessions.

Kinesthetic Learning: Kinesthetic learning is a learning style in which learning takes by the student actually carrying out a physical activity, rather than listening to a lecture or merely watching a demonstration. They will often remember things by going back in their minds and visualizing their own body's movements. It is also referred to as tactile learning. People with a kinesthetic learning style are also commonly known as doers.

Methodology

Research Design

Quantitative research design and questionnaire survey method were used to assess the study.

Participants of the Study

The sample for this study was chosen from four high schools among four districts in Yangon Region by using random sampling method. 60 sample of Grade 9 students from each high school of B.E.H.S (1) North Dagon (East), B.E.H.S (1) Kyimyindaing (West), B.E.H.S (2) Dala (South), and B.E.H.S (1) Hlaingthaya (North). Therefore, 240 students (120 male students and 120 female students) consisted in this study.

Instrumentation

The Barsch Learning Style Inventory (BLSI) developed by Jeffery Barsch, EdD (2007) was used to investigate preferred learning style of Grade 9 students. The Barsch Learning Style Inventory (BLSI), 2007, concludes a set of 32 items and four subscales consisting 8 items for each subscale respectively. For scoring, each of the statements has been assigned scores by point system- 5 points for often, 3 points for sometimes, and 1 point for rarely preferred. Higher points indicate greater emphasis on preferred learning style particularly.

Data Collection Procedure

After the detailed review of literature, the measuring instrument was prepared. The instrument of the study was adapted. It was translated into Myanmar Version with the help of supervisor and expert review was conducted for content validity by 8 experts who are well experienced in educational psychology from Department of Educational Psychology in Yangon University of Education. Pilot study was conducted in the third week of January, 2020 with a sample of 30 Grade 9 students from No (4), Basic Education High School, Dagon Myothit (South) in Yangon Region. After the pilot study, the reliability analysis of the instrument was done by calculating the Cronbach Alpha value. The reliability analysis of the instrument is (Cronbach alpha = 0.714). The required data was collected during the last week of January, 2020.

Data Analysis and Result

Learning Styles Preferences of Grade 9 Students

In order to investigate learning styles of Grade 9 students, descriptive statistics was carried out and the results were shown in Table 1.

Table 1 Numbers and Percentages of Students' Learning Styles Preferences

Learning Styles		Number	Total	Percentages
Unimodal Learning Style	V(Visual)	54	175	72.92%
	A(Auditory)	56		
	T(Tactile)	24		
	K(Kinesthetic)	41		
Bimodal Learning Style	VA(Visual, Auditory)	14	57	23.75%
	VT(Visual, Tactile)	5		
	VK(Visual, Kinesthetic)	7		
	AT(Auditory, Tactile)	14		
	AK(Auditory, Kinesthetic)	11		
	TK(Tactile, Kinesthetic)	6		

Learning Styles		Number	Total	Percentages
Trimodal Learning Style	VAT(Visual, Auditory, Tactile)	2	8	3.33%
	VAK(Visual, Auditory, Kinesthetic)	3		
	VTK(Visual, Tactile, Kinesthetic)	1		
	ATK(Auditory, Tactile, Kinesthetic)	2		
Total		240	240	100%

Based on the descriptive statistics, Table 1 showed the numbers and percentages of three learning styles such as unimodal learning style (one strong dimension) (V, A, T, K), bimodal learning style (two strong dimension) (VA, VT, VK, AT, AK, TK) and trimodal learning style (three strong dimension) (VAT, VAK, VTK, ATK). This study revealed that the majority of Grade 9 students 175 (72.92%) were unimodal learning style, the students 57 (23.75%) were bimodal learning style and 8 (3.33%) of the students were trimodal learning style.

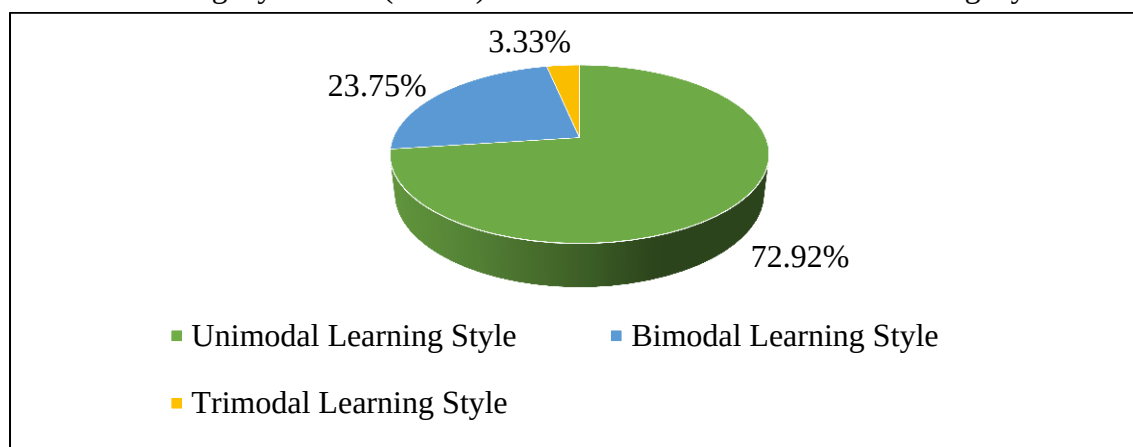


Figure 1 Percentage of Students' Learning Styles Preferences

Comparison of Learning Styles among Grade 9 Students by Gender

A Chi-square test was conducted to explore whether there is an association between learning styles and students' gender. The result was presented in Table 2. Visual presentation of this finding was shown in Figure 2.

Table 2 Result of Chi-Squares Test for Association between Learning Styles and Gender

Learning Styles	Gender		Total	χ^2	p
	Male	Female			
Unimodal Learning Style	85	90	175	.581	.748
	35.4%	37.5%	72.9%		
Bimodal Learning Style	31	26	57		
	12.9%	10.9%	23.8%		
Trimodal Learning Style	4	4	8		
	1.6%	1.6%	3.3%		

According to the Table 2, there were 85 male students (35.4%) and 90 female students (37.5%) in unimodal learning style. And there were 31 male students (12.9%) and 26 female students (10.9%) in bimodal learning style. There were 4 male students (1.6%) and 4 female students (1.6%) in trimodal learning style. Based on the finding, there was no significant association between learning styles and gender of the students ($\chi^2=.581$, $df=2$, $N=240$). It means that, gender effect was not found in learning styles.

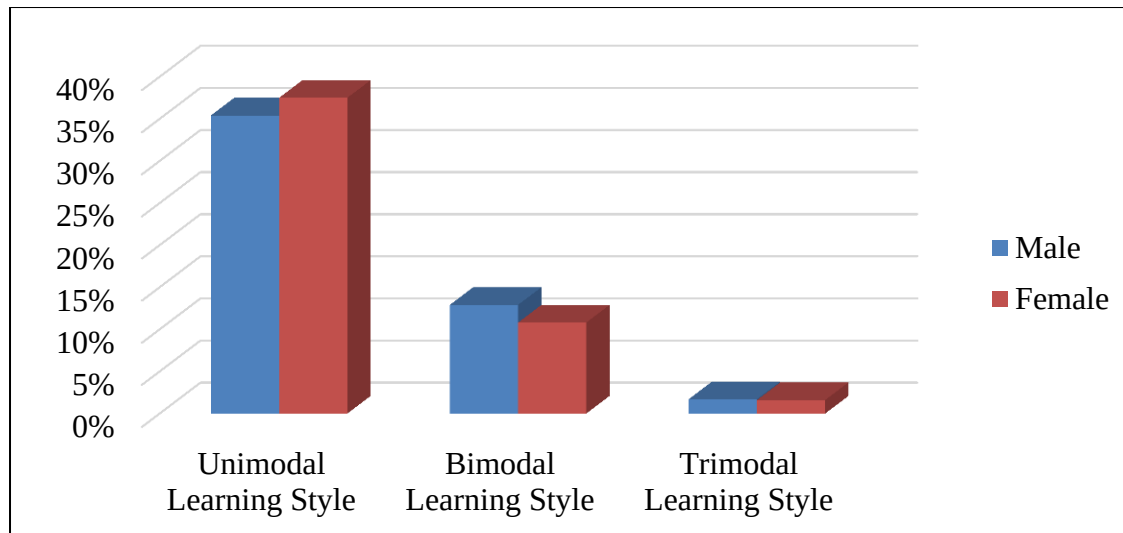


Figure 2 Comparisons of Learning Styles among Grade 9 Students by Gender

Result of Chi-Squares Test for Association between Learning Styles and Age

To determine the association between learning styles and age of Grade 9 students, the Chi-square analysis was conducted and the results were shown in Table 3. The ages of students are distinguished into three levels: age of 13 years, 14 years and 15 years according to their date of birth. Visual presentation of this finding was shown in Figure 3.

Table 3 Result of Chi-Squares Test for Association between Learning Styles and Age

Learning Styles	Age			Total	χ^2	<i>p</i>
	13Years	14Years	15Years			
Unimodal Learning Style	14 5.8%	133 55.4%	28 11.7%	175 72.9%	3.112	.539
Bimodal Learning Style	2 0.8%	48 20.0%	7 2.9%	57 23.8%		
Trimodal Learning Style	0 0.0%	6 2.5%	2 0.8%	8 3.3%		

According to the Table 3, in unimodal learning style, there were 14 students of aged 13 years (5.8%), 133 students of aged 14 years (55.4%) and 28 students of aged 15 years (11.7%). And, there were 2 students of aged 13 years (0.8%), 48 students of aged 14 years (20%) and 7 students of aged 15 years (2.9%) in bimodal learning style. In trimodal learning style there were no student of aged 13 years (0.0%), 6 students of aged 14 years (2.5%) and 8 students of aged 15 years (3.3%). Based on the result, there was no significant association between learning styles and age ($\chi^2=3.112$, $df=4$, $N=240$). It might be said that there was no age effect on different learning styles. But the percentage of unimodal learning style among ages is the highest. It can be said that all the age groups of Grade 9 students in selected schools more prefer unimodal learning style.

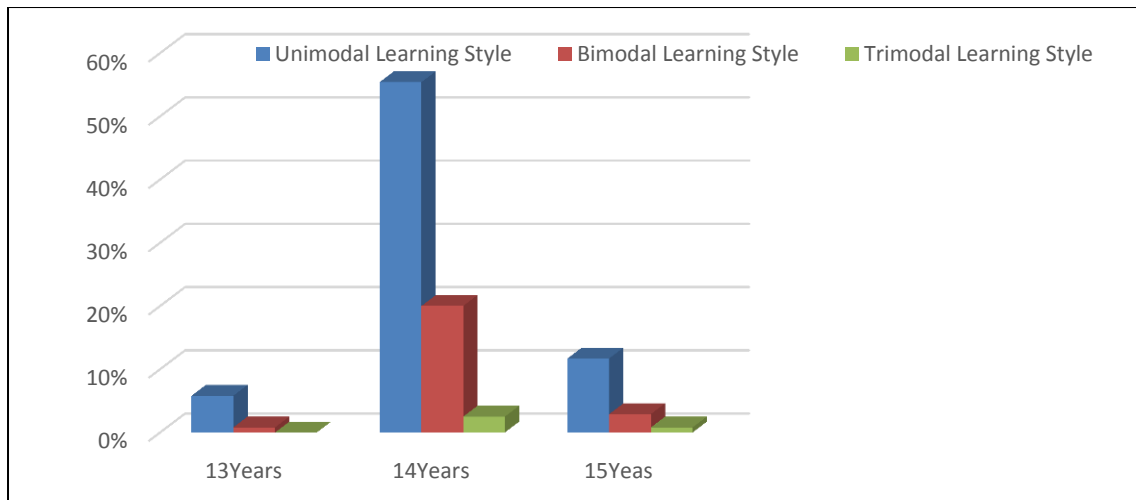


Figure 3 Comparisons of Learning Styles among Grade 9 Students by Age

Result of Chi-Squares Test for Association between Learning Styles and School

The Chi-square analysis was conducted to determine the association between learning styles and school of Grade 9 students and the results were presented in Table 4. Participants were chosen from different four schools in Yangon Region. The result was shown in the following Table 4.

Table 4 Result of Chi-Squares Test for Association between Learning Styles and School

Learning Styles	School	Percentage	Total	χ^2	p
Unimodal Learning Style	School (1)	20.8%	72.9%	14.302	.026
	School (2)	17.9%			
	School (3)	19.6%			
	School (4)	14.6%			
Bimodal Learning Style	School (1)	3.8%	23.8%		
	School (2)	6.3%			
	School (3)	5.4%			
	School (4)	8.3%			
Trimodal Learning Style	School (1)	0.4%	3.3%		
	School (2)	0.8%			
	School (3)	0.0%			
	School (4)	2.1%			

By studying Table 4, the results revealed that there was a significant association between learning styles and schools of grade 9 students ($\chi^2=14.302$, $df=6$, $N=240$, $p < 0.05$). The 20.8 percent of School (1) students more prefer unimodal learning style than the students from other schools. It might be said that students of School (1) more prefer unimodal dimension such as (V, A, T, K) learning style than the students from other schools. The 8.3 percent of School (4) students more prefer bimodal learning style than the students from other schools. It might be said that students of School (4) more prefer bimodal dimension such as (VA, VT, VK, AT, AK, TK) learning style than other schools. Moreover, the 2.1 percent of School (4) students also more prefer trimodal learning style than the students from other schools. It might be said that students of School (4) also more prefer trimodal dimension such as (VAT, VAK, VTK, ATK) learning style than the students from other schools.

Discussion

Although the results represented the objectives of the study, there were some limitations in this study. A major limitation is that the sample size was insufficient to represent the whole Grade 9 students since there were many other students in Yangon Region. Moreover, target population should be selected from other high schools in Yangon Region to confirm the finding. Another limitation is that participants of this study are Grade 9 students. There is no doubt to take additional research on learning styles of Grade 9 students. To be more representative, more students from other high schools in other regions should participate and other grades should be considered to explore learning styles as this type of study. Future research should be conducted to other grades and schools to assess the generality of these findings in other regions of Myanmar.

Conclusion

The main objective of the study was to investigate learning styles of Grade 9 students. Based on the descriptive analyses, this study revealed that majority of Grade 9 students **175 (72.92%)** had unimodal learning style (one strong dimension), **57 (23.75%)** of the students had bimodal learning style (two strong dimension), and **8 (3.33%)** of the students had trimodal learning style (three strong dimension). The Chi-square test result showed that there was no significant association between learning styles and gender ($\chi^2=.581$, $df= 2$, $N=240$). In this study, it was also found that there was no significant association between learning styles and age groups of Grade 9 students ($\chi^2=3.112$, $df=4$, $N=240$). Based on the Chi-square test, the results revealed that there was a significant association between learning styles and school of Grade 9 students ($\chi^2=14.302$, $df= 6$, $N= 240$, $p<0.05$). Most of the students prefer unimodal (one strong dimension) learning style (V, A, T, K). But few students prefer bimodal (two strong dimension) learning style (VA, VT, VK, AT, AK, TK) and trimodal (three strong dimension) learning style (VAT, VAK, VTK, ATK). A teacher should create learning environment to fulfill the demand of students' various learning styles by using various teaching strategies.

Acknowledgement

I would like to express profound and sincere thanks to Dr. Pyone Pyone Aung (Pro-Rector, Yangon University of Education) and Dr. Kay Thwe Hlaing (Pro-Rector, Yangon University of Education) for their administrative supports and their official helps in this study. I would like to express my special gratitude to Dr. Naing Naing Maw (Professor/Head, Department of Educational Psychology, Yangon University of Education) for her previous guidance and suggestions. I also wish to convey my acknowledgement to Dr. Daw Sann Win (Associate Professor, Department of Educational Psychology, Yangon University of Education) for his valuable suggestions and critical remarks on this study. Especially, I am most grateful to my academic supervisor, Daw Myint Sann (Lecturer, Department of Educational Psychology, Yangon University of Education) for her valuable academic guidance, great support and encouragement, painstaking help and overall supervision, proper guidance, great guidance throughout the entire course of this thesis. Besides, her great help in amending textual material, editing and reviewing is essential in carrying out this research.

References

- Coffield, F., Moseley, D., Hall, E. & Ecclestone, K. (Ed.). (2004). *Learning Styles and Pedagogy in post-16 Learning: A Systematic and Critical Review*. Wiltshire: Learning and Skills Research Centre.
- Drago, W. A., & Wagner, R. J. (2004). VARK preferred learning styles and online education. *Management Research News*, 27(7), 1-13.
- Duff, A. & Duffy, T. (2002). Psychometric Properties of Honey 6 Mumford's Learning Style Questionnaire (LSQ). *Personality and Individual Differences*, 22, 147-163.
- Dunn, R. (1996). *How to implement and supervise a learning style program*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Felder, R.M. & Henriques, E. R. (1995). Learning and Teaching Style in Foreign and Second Language Acquisition. *Foreign Language Annals* 28 (1), 21-31.

- Felder, R.M., (1996). Matters of style. *ASEE Prism*, (4), 18-23.
- Fleming, N., & Baume, D. (2006). Learning styles again: varking up the right tree! *Educational Developments*. SEDA Ltd, issue 7.4 Nov, 4-7.
- Fleming, N. D. (1995). I'm different; not dumb modes of presentation (vark) in the tertiary classroom, In Zelmer,A , (ed.) *Research and Development in Higher Education. Proceedings of the 1995 Annual Conference of the Higher Education and Research Development Society of Australia (HERDSA)*, pp. 308-313.
- Fleming, N. D. (2006). V.A.R.K Visual, Aural/Auditory, Read/Write, Kinesthetic. New Zealand: Bonwell Green Mountain Falls. Fleming, N., & Baume, D. (2006). Learning styles again: varking up the right tre, *Educational Developments*. SEDA Ltd, issue 7.4 Nov, 4-7.
- Jantan, R., & Razali, M. (2002). *Psikologi Pendidikan Pendekatan Kontemporari*. Kuala Lumpur: McGraw Hill Education.
- Jonassen, D. H., & Grabowski, B. L. (1993). *Handbook of Individual Differences, learning and Instruction*. Mahwah, NJ: Erlbaum.
- Kay Khaing Kyaw (2017), *The Correlation Study between Learning Styles and Academic Achievement Among Lower Secondary Students in Bago Region*. M.Ed. Educational Psychology Department, Yangon University of Education.
- Mok S. S. (2003). *Ilmu Pendidikan Untuk KPLI: Psikologi Pendidikan & Pedagogi*. Jaya Subang. Kumpulan Budiman Sdn. Bhd.
- More, A., & Btitish Columbia Univ., V (1993). Learning Styles and the Classroom. Retrieved from ERIC database.
- Sincero, S. M. (2011). Behaviourist Theories of Personality. Retrieved February 06, 2015 from Explorable.com: <http://explorable.com/behaviourist-theories-of-personality>.
- Sternberg, R. J. (1997). *Thinking Styles*. Cambridge, UK: Cambridge University Press.
- Yaakub, R., & Hashim, S. (2004). *Psikologi Pembelajaran & Personaliti*. Bentong: PTS Publications & Distributors Sdn. Bhd.

FAMILY FUNCTIONING AND ADOLESCENT DELINQUENCY OF STUDENTS IN UNIVERSITIES FROM MONYWA DISTRICT

Lwin Moe Aung¹, Yar Zar Chit²

Abstract

The main aim of this study was to investigate family functioning and adolescent delinquency of students in universities from Monywa District (2019-2020 AY). A total of university students (Male=390, Female=410) from three selected Universities in Monywa District were randomly selected in this study. Descriptive research design and survey method were used in this study. Family Assessment Device consisting of 60 items developed by Epstein et al., (1983) (Cronbach's alpha = 0.866) was used to measure the family functioning of university students. The *t* test result revealed that there was significant difference in family functioning by gender. The family functioning of female students was more effective than that of male students. However, there was no significant difference in family functioning by education level. According to ANOVA result, there was no significant difference in family functioning by university. And, Self-Report Delinquency Scale consisting of 22 items developed by Mattem and Nakagawa (2003) (Cronbach's alpha = 0.862) was used to measure the adolescent delinquency of university students. The results of *t* test showed that there were significant differences in adolescent delinquency by gender and university. Male students were more delinquent than female students and the university students in University 2 more involve in delinquency than the students in University. However, the results of ANOVA showed that there was no significant difference in adolescent delinquency by education level. There was moderately negative correlation between family functioning and adolescent delinquency.

Keywords: Family functioning, delinquency, adolescent, affective responsiveness

Introduction

In building a modern developed nation, the essential primary source is the human resource of that nation. Among them, adolescents are the most powerful human resource of that nation for the development of every field because they are the back-bone of the nation. However, they are in a period of emotional and social storm in facing with a problem. As one of the most critical periods in human life, adolescence is associated with various changes in different areas. In this condition, they may be on the wrong way and become delinquents when they do not get advice and support. The involvement of adolescents in delinquency is an act of risky behaviours that threatens the well-being of families and communities.

Since adolescents are part of society, a comprehensive understanding of an adolescent's delinquency is pivotal in light of the social context in which family is a key system (Steinberg, 1990). The quality of the family functioning is paramount to the development of all children in a family (Leonard, 1991). Family functioning refers to the activities that the members of a family perform to satisfy their needs and maintain their status (Hadi, 1990). Misbehaviour of an adolescent as a family member can be explained in relation to the behaviours of other family members and the interactions among family subsystems (Cox & Paley, 1997). Therefore, the physical and mental conditions of adolescents are influenced by the quality of family functioning.

Purpose of the Study

The primary aim of this study is to investigate family functioning and adolescent delinquency of students in universities from Monywa District (2019-2020 AY). The specific objectives will be as follows:

1. To examine the family functioning and delinquency of adolescents from universities in Monywa District

¹ Senior Teacher, B.E.H.S, Nat Kyee, Kani Township, Sagaing Region

² Dr, Lecturer, Department of Educational Psychology, Sagaing University of Education

2. To explore the family functioning of adolescents in universities from Monywa District by gender, education level and university
3. To explore adolescent delinquency in universities from Monywa District by gender, education level and university
4. To find out the relationship between family functioning and adolescent delinquency of students in universities from Monywa District
5. To find out the extent to which the impact of family functioning on adolescent delinquency of students in universities from Monywa District.

Review of Related Literature

All families perform many functions for its members essential to healthy development and well-being. Family functioning encompasses the ways that family members interact with and relate to each other including the pursuit of goals, activities the family engages in together, and acceptance of family routines (Preechawong et al., 2007).

There are six dimensions in the McMaster model of family functioning. The first dimension, problem solving, refers to a family's ability to resolve problems to a level that maintains effective family functioning. Family problems are divided into two types—instrumental and affective.

The second dimension, communication, is the second dimension in the McMaster Model and refers only to the verbal exchange of information within the family. The model classifies information exchange into four styles: Clear and direct, Clear and indirect, Masked and direct and Masked and indirect.

The third dimension, roles, is the repetitive patterns of behavior by which family members fulfill family functions. The model stresses the importance of considering role allocation and role accountability. Role allocation incorporates the family's pattern in assigning roles. Role accountability focuses on the ways the family ensures that functions are completed.

The fourth dimension, effective responsiveness, refers to the ability of family members to respond to the stimuli with a reasonable level and appropriate type of emotions. The model identifies two categories of emotional responses: emergency (e.g. fear, anger, and depression) and welfare (e.g. affection, warmth, love, and joy).

The fifth dimension, effective involvement, is the extent to which the family shows interest in and value for particular activities of individual family members. The model identified six types of involvement with the family members: (1) lack of involvement, (2) involvement devoid of feelings, (3) narcissistic involvement, (4) Empathic involvement, (5) Over-involvement and (6) Symbiotic involvement.

The last dimension, behavioral control, defines the pattern a family adopts for handling behavior in three specific situations: (1) physically dangerous situations, (2) situations involving meeting and expressing psychobiological needs and drives, (3) situations involving socializing behavior both between family members and with people outside the family system. Families develop standards of acceptable behavior for each of these three situations. The four styles of behavior control are: (1) rigid behavior control, (2) flexible behavior control, (3) laissez-faire behavior control and (4) chaotic behavior control.

Some adolescents have the ineffective family functioning in their families and they did not meet their frustrations in physical, mental and biological conditions. Therefore, they become delinquent as the outburst of deficiency of family support. There are two types of adolescent delinquents: early onset adolescent delinquents and late onset adolescent delinquents. There are

three sources of delinquency data to measure the level of delinquency: official data, self-reported data, and victim data.

Most of threats effecting adolescent delinquency are known to be stemming from psychosocial and risky behaviours rather than biological reasons. Risk factors are individual or environmental vulnerability that increase youth's disadvantage to negative developmental outcomes (Werner, 2000). Protective factors are the opposite of risk factors. When protection is low, the higher the risk and the greater the involvement in problem behaviour, but when protection is high, that relationship is attenuated. Therefore, it is needed to make family functionings effective in order to make adolescents as good citizens and not to be delinquent.

Method

Participants

The participants of this study were first year, second year and third year students attending in (2019-2020) Academic Year from Monywa University, Technology University and Economics University in Monywa District. The number of participants was 800 students (395males, 405 females). The sample was chosen by using simple random sampling technique.

Research Method

Design of this study is quantitative research design and descriptive survey method.

Instrumentation

Family Assessment Device: The key instrument used to measure family functioning was Family Assessment Device developed by Epstein et al. (1983). The scale for family functioning was composed of seven subscales: (a) problem solving (b) communication (c) roles (d) affective responsiveness (e) affective involvement (f) behavioral control and (g) general functioning. There were 60 items for the whole scale. It was scored with four-point Likert scales. The reliability coefficient for family functioning was .903.

Self-Report Delinquency Scale: The key instrument used to measure delinquency was Self-Report Delinquency Scale developed by Mattem & Nakagawa (2003). It was composed of four subscales: (a) substance abuse (b) property violation (c) school disciplinary action and (d) force. There were 22 items for the whole scale. The reliability coefficient of adolescent delinquency was .870.

Data Collection Procedure

For collecting data for this study, the researcher requested permission from the Head of Department of Educational Psychology. Second, permission to collect data was acceded from the respective rectors of the universities in Monywa District. All of the participants' responses were gathered by survey method. As the establishment of the rapport with the participants, it took a few seconds to explain the purpose and importance of their participation and assurance of confidentiality of their responses which would be used only for this research purpose. Then, the questionnaires were distributed and the participants were asked to complete all items in the questionnaires. On average, the participants spent about twenty-five minutes to complete all items. According to the above procedures, the collection of the required data was conducted in each selected school by survey procedure.

Findings

In this study, university students' family functioning and adolescent delinquency were investigated among the selected universities from Monywa district. With the aim to answer the research questions, differences between gender, education level and university were further

investigated. Moreover, in order to explore predictor of adolescent delinquency, family functioning was examined.

Table 1 Descriptive Statistics for Students' Family Functioning

Variable	Mean	SD	Mean Percentage
Problem solving	17.86	2.31	74.41%
Communication	25.74	3.12	71.50%
Roles	29.47	3.01	66.98%
Affective Responsiveness	17.01	2.41	70.88%
Affective Involvement	20.76	2.76	74.14%
Behavior Control	24.95	2.88	69.31%
General Functioning	35.39	4.47	73.73%
Total Family Functioning	171.18	16.28	

As shown in Table 1, the mean and standard deviation of the students' overall family functioning were 171.18 and 16.28 respectively. Since the sample mean (171.18) is greater than the theoretical mean (150) in overall family functioning, it can be assumed that the students' family functioning is satisfactory and effective for all family members.

Next, among the seven subscales, mean score of problem solving (74.41) is the highest and that of roles (66.98) is the lowest. Hence, it can be interpreted that the students' problem solving skill is effective because students and their family members can resolve most everyday problems around the house and discuss whether it worked or not (problem solving). Although their family functioning is effective, they do not make sure meet their family responsibilities because family tasks are not spread around enough (roles). This may be due to the fact that students in this study do not get exact role allocation and role responsibility in the family activities. Hence, it can be interpreted that parents worried that their children become delinquent.

Table 2 The Result of Independent Samples *t* Test for Family Functioning by Gender

Variable	Gender	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Family Functioning	Male	167.31	16.428	6.824***	798	0.000	-7.639
	Female	174.95	15.223				

Note: *** The mean difference is significant at 0.001 level.

Table 2 showed that there was significant difference between male and female students in family functioning. According to this result, family functioning of female students is better than that of male students. This may be because of the fact that female students are more obedient and communicate more closely with the family members than male students. Therefore, the family functioning of female students is better than that of male students.

Table 3 The Results of ANOVA for Family Functioning by Education Level

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>P</i>
Family Functioning	Between Groups	60.531	2	30.265	0.114	0.892
	Within Groups	211565.618	797	265.452		
	Total	211626.149	799			

The result indicated that there was no significant difference in students' family functioning in terms of education level. It may be due to the fact that every person (children, adolescents and adults) expresses their feeling to each other and makes decisions about how to solve problems although children were greatly restricted to talk among adults and make decisions by themselves. Thus it can be concluded that family functioning does not depend on the education level and every university students may have the same level of family functioning.

Table 4 The Results of ANOVA for Students' Family Functioning by University

Variable		Sum of Squares	df	Mean Square	F	P
Family Functioning	Between Groups	1559.697	2	779.849	2.959	0.052
	Within Groups	210066.451	797	263.571		
	Total	211626.149	799			

Table 4 indicated that there was no statistically significant difference in family functioning among three universities. It may be due to the fact that adolescents got the individual family functioning in their home and had the habit practiced in home although they went to the universities according to the marks and their choices. It showed that there was no effect on students' family functioning by university. Thus, it can be concluded that the quality of students' family functioning do not differ by the type of university.

Table 5 Descriptive Statistics for Adolescent Delinquency of University Students

Subscales	Mean	SD	Mean Percentage
Substance Abuse	9.15	2.51	38.12%
Property Violation	10.24	2.62	32.00%
School Disciplinary Action	3.93	1.42	42.66%
Force	5.12	1.97	33.85%
Adolescent Delinquency	31.29	7.63	

Table 5 indicated that the mean score and standard deviation of total delinquency were 31.29 and 7.63 respectively. Since the total mean score (31.29) was lower than the theoretical mean (55) in total delinquency, it can be said that the frequency of university students' delinquency is little. According to the result, the mean score of the delinquency in school disciplinary action subscale was the highest (42.66). Therefore, it can be interpreted that students did not attend and run away from the class without permission of parents and authorities or consistent reason. And, the students had the lowest mean score in the property violation subscale among the four subscales of delinquency. Thus, it showed that students did not damage or destroy public or private property and throw objects at cats, dogs, cows or people and paint or write graffiti on public property although they are uncomfortable in the present situation with their peers or family members in either emotional or physical conditions. This may be because of the fact that there are few social and academic activities in their university and students have low interest in their subjects and they can easily get away from classrooms without permission from authorities or teachers.

Table 6 The Result of Independent Samples *t* Test for Adolescent Delinquency of University Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Adolescent Delinquency	Male	395	35.50	7.649	18.331***	798	0.000	8.306
	Female	405	27.19	4.902				

Note: ***The mean difference is significant at 0.001 level.

Table 6 indicated that there was significant difference between male and female students in adolescent delinquency. According to this result, the delinquency of male students is higher than that of female students. It may be due to the factor that the male students have little control in participating in the anti-social behaviour. Thus, it can be concluded that male students show more delinquent behaviours than female students and may have more problem in controlling themselves than female students.

Table 7 ANOVA Results for Adolescent Delinquency of University Students by Education Level

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>P</i>
Adolescent Delinquency	Between Groups	201.613	2	100.807	1.733	0.177
	Within Groups	46358.356	797	58.166		
	Total	46559.969	799			

Table 7 indicated that a statistically significant difference was not found among three education levels in total adolescent delinquency. It showed that adolescent delinquency of university students does not depend on education level. This may be due to the fact that the university students behave delinquent behaviours in any education level. Therefore, the university students can involve in delinquency in any education level.

Table 8 The Results of ANOVA for University Students' Adolescent Delinquency by University

Variable		Sum of Squares	<i>Df</i>	Mean Square	<i>F</i>	<i>P</i>
Adolescent Delinquency	Between Groups	388.410	2	194.205	3.352*	.035
	Within Groups	46171.559	797	57.932		
	Total	46559.969	799			

Note: *The mean difference is significant at 0.05 level.

As above mentioned ANOVA result in Table 8, it was found that there was significant difference in adolescent delinquency of students among university.

To investigate more specifically how students' delinquency differed in relation to respective university, Post Hoc Test was carried out by Tukey HSD method. The results were shown in Table 9.

Table 9 The Result of Tukey (HSD) Test of Multiple Comparison for Adolescent Delinquency of University Students

Variance	University(I)	University(J)	MD (I-J)	p
Adolescent Delinquency	University 2	University 1	1.626*	.035
		University 3	1.237	.148

Note: *The mean difference is significant at 0.05 level.

Post Hoc Tukey (HST) Test revealed that the mean difference between University 2 and University 1 was 1.626 and it was significantly different at $\alpha=0.05$ level. According to the result, students from University 2 expressed more delinquency than students from University 1. According to teachers from University 2 said, this may be due to the fact that there are few social and academic activities in their university. Moreover, University 2 students have low interest in their subjects and they can easily get away from classrooms without permission from authorities or teachers.

Table 10 Correlation Between Family Functioning and Adolescent Delinquency of University Students

Variables		Adolescent Delinquency
Family Functioning	Pearson Correlation	-.314**
	Sig. (2-tailed)	.000
	N	800

Note: *Correlation is significant at 0.001 level.

According to the results, there was a moderate correlation between family functioning and adolescent delinquency ($r = -.314$, $p < 0.001$). Therefore, it was believed that family functioning of university students was negatively correlated with adolescent delinquency. This means that if the students' family functioning is higher, their delinquency would be lower.

Table 11 Model Summary for Family Functioning and Adolescent Delinquency

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.314 ^a	.099	.098	7.251

a. Dependent Variable: Adolescent Delinquency

According to Table 11, the simple linear regression correlation coefficient (R) = .314 and adjusted R square was 0.098. Therefore, it can be conducted that 9.8% (nearly 10 %) of adolescent delinquency can be explained by family functioning. To get more exact information, the results can be seen in the following Table 12.

Table 12 Results of Simple Linear Regression on Family Functioning and Adolescent Delinquency

Model	Unstandardized Coefficient		Standardized Coefficient	t	p
	B	Std. Error	Beta		
1(constant)	56.541	2.710		20.862*	.000
Family Functioning	-0.147	0.016	-0.314	-9.358*	.000

Note: *The probability value is significant at 0.001 level.

From this Table 12, it was found that the predictor, family functioning, significantly predicted adolescent delinquency of university students. It can be interpreted that adolescent delinquency of university students depends on their family functioning. Adolescent delinquency

of university students can be negatively predicted by whether the effective family functioning is or not.

Table 13 Multiple Regression Analysis for Subscales of Family Functioning on Adolescent Delinquency

Variable	Unstandardized Coefficient		Standardized Coefficient	<i>t</i>	<i>p</i>
	B	Std. Error	Beta		
Adolescent Delinquency (AD)	56.029	2.967		18.882***	.000
Predictor Variables					
Problem Solving (PS)	-.065	.155	-.020	-.418	.676
Communication (C)	.020	.123	.008	.164	.870
Roles (R)	-.186	.109	-.073	-1.711	.087
Affective Responsiveness (AR)	-.137	.140	-.043	-.977	.329
Affective Involvement (AI)	-.288	.127	-.104	-2.268*	.024
Behaviour Control (BC)	-.082	.112	-.031	-.734	.463
General Functioning(GF)	-.234	.103	-.137	-2.272*	.023

Note: * The probability value is significant at 0.05 level.

*** The probability value is significant at 0.001 level.

Among all subscales of family functioning, affective involvement and general functioning were significant predictors of students' adolescent delinquency. However, others dimensions like problem solving, communication, roles, affective responsiveness and behaviour control were not significant predictors of students' adolescent delinquency. Therefore, it can be interpreted that if family members of students did not show any degree of interest in them or if they could not show their sadness to their family members or if they could not turn to each other for support in the crisis time or if they feel a lot of bad thought in their family, university students' adolescent delinquency will be increased.

Conclusion

It was observed that there was significant difference between males and females with regard to their overall family functioning. Female students had higher mean scores than male students in overall family functioning ($p < 0.001$). This result was consistent with the research of Mariadel Carmen Perez-Fuente et al., (2019). They also found that female students have more effective family functioning than male students. In addition, there was significant difference between males and females with regard to their overall delinquency. Male students had higher mean scores than female students in overall family functioning ($p < 0.001$). This result was consistent with the research of Yunjiao Gao, Yanping and Ting Kin Ng (2013). They also found that male students more participate in delinquency than female students. Moreover, significant difference was found in delinquency of students among the universities ($p < 0.05$). According to this result, university 2 possessed the highest delinquency. University 1 and university 3 can be found in order from low to high delinquency. Moreover, Post Hoc test results specifically described that students from university 2 are more delinquent than the students from university 1. This result was consistent with the research of Julie Savignac (2009) found that there is difference in delinquency according to university (location).

There was a negative correlation between family functioning and adolescent delinquency. It was consistent with the studies of Fauziah Hanim Abdul Jalal (2005), Yunjiao Gao, Yanping Yu and Ting Kin Ng (2013) and Trio Saputra (2017). They found that there was direct relation between family functioning and adolescent delinquency. Since there is negatively relationship

between family functioning and adolescent delinquency, it can be said that the more they have effective family functioning, the lower their adolescent delinquency is.

Family functioning was highlighted for nurturing and preparing of children's physical and mental abilities than other factors such as school, environment and peer since two decades ago. It was commonly accepted that the effective family functioning can improve the peaceful relation not only with family members but also with others. When the children are happy in their families, they love the other family members and obey their words with the positive perspective if even they are less free. They are also ready for their activities both in family activities and in school activities.

However, they have barriers in some of the family functioning dimensions, they may be nervous in a buffed situation. And then, they will not discuss and take suggestions about their problems with their family members. Even their family members give advice about their problems; they will not follow their advice. As the free-way, they involve in the antisocial activities (smoking, running away from home and school without permission and drinking). Finally, they think their life is zero and they do not need to care and try to pass their difficulties. Therefore, they run away with the problem whenever they face and make delinquent behaviour for their frustrations.

To sum up, results of this study highlight a better understanding of the resources needed to solve the problems between family functioning and adolescent delinquency of university students. With a better understanding of university students' family functioning and adolescent delinquency, parents, family members and teachers may have to take consideration to set acceptable disciplines about them. Moreover, they also need to consider types of students' life styles and their peers that can enhance their personality and guide them to be good citizens.

Acknowledgements

We would like to offer respectful appreciation to Dr. Saw Pyone Naing (Rector), Dr. Myat Myat Thaw (Pro-Rector) and Dr. Khin Hnin New (Head of Department, Department of Educational Psychology) from Sagaing University of Education for their encouragement, administrative supports, official permission, and providing facilities throughout the research. We would like to express our indebtedness to Rectors from selected universities from Monya District for their permission to conduct this study.

References

- Cox, M. J., & Paley, B. (1997). Families as systems. *Annual Review of Psychology*, 48, 243-267.
- Fauziah Hanim Abdul Jalal (2015). *Family functioning and adolescent delinquency in Malaysia* (pp. 13). New York: The Guilford Press.
- Hadi, Z. A. (1990). *Juvenile delinquency: Its relationship to the family social support*. Paper presented at the First National Conference on the Caring Society, Kuala Lumpur, Malaysia.
- Leonard, B. J. (1991). Siblings of chronically ill children: A question of vulnerability versus resilience. *Pediatric Annals*, 20(9), 501-2, 505-6.
- Preechawong, S., Zauszniewski, J. A., Heinzer, M. M. V., Musil, C. M., Kercsmar, C., & Aswinanong, R. (2007). Relationships of family functioning, self-esteem, and resourceful coping of Thai adolescents with asthma. *Issues in Mental Health Nursing*. Special Issue: *Adolescent Mental Health*, 28(1), 21-36.
- Steinberg, L. (1990). Autonomy, conflict, and harmony in the family relationship. In S. S. Feldman & G. R. Elliot (Eds.). *At the threshold: the developing adolescent* (pp. 259-276). Cambridge, MA: Harvard University Press.
- Werner, E. (2000). Protective factors and individual resilience. In J. P. Shonkoff, & S. J. Meisels. (Eds.), *Handbook of early childhood intervention* (pp. 115-132). New York: Cambridge University Press.
- World Health Organization (2018). Retrieved June 19, 2019, from <http://www.britannica.com/science/adolescence>

A STUDY ON NEED FOR COGNITION AND CURIOSITY OF HIGH SCHOOL STUDENTS

Htet Htet Wai¹, Pa Pa Oo²

Abstract

The main purpose of this study was to investigate high school students' need for cognition (NFC) and curiosity in Wundwin Township. The descriptive research design and quantitative survey method were taken in the present study. The total of 1600 (male=775, female=825) Grade 10 and Grade 11 students were selected as participants from four high schools by using simple random sampling technique. As the instruments, Need for Cognition Scale developed by Cacioppo, Petty and Kao (1984) with 18 items and Curiosity and Exploratory Inventory I and II developed by Kashdan, T. B. et al., (2004, 2009) with 15 items were applied. The internal consistency reliability coefficient was 0.801 for NFC and 0.756 for curiosity. The results revealed that there were significant differences in comparison of Gender, Grade and Schools in NFC. The female students had higher NFC than the male students. And, Grade 10 students had better NFC than Grade 11 students. According to schools, the students from school 1 had the highest both in NFC and in curiosity. And, the findings also showed that there were significant differences by Grade, Subject Combination, Schools and NFC Groups in students' curiosity. The results showed that Grade 10 students had better curiosity than Grade 11 students and also showed that Combination 7 students were more curious than Combination 1 students. When comparing between NFC groups, high NFC students were more curious than low NFC students. Then, the findings revealed that there was significant positive relationship between need for cognition and curiosity ($r = .598, p < 0.01$). According to Simple Linear Regression analyses, need for cognition was key predictor on curiosity. Adjusted R^2 result showed that 35.8% of variance in curiosity which was explained by need for cognition.

Keywords: Cognition, Need for Cognition, and Curiosity.

Introduction

Importance of the Study

In today's controversy-rich society, children and adolescents are faced with many challenges. They must make their own decisions and learn the skill to form their own opinions. Critical thinking is an important skill in these cognitive processes and can be used in many areas of children's and adolescents lives. If they enjoy engaging in critical thinking, they will be better equipped to make their own decisions and to form their own opinions (as cited in Porter., 2010).

Need for cognition is the understanding of how much individuals enjoy and engage in thinking (Cacioppo & Petty, 1982). NFC is one step to helping students inside and outside the classroom to become more interested in proactively solving academic problems as well as thinking about societal problems. Individuals with high need for cognition enjoy deeper critical thinking skills, which can benefit these individuals in different areas of their life such as academic learning at school, new training challenges at work, and diverse and ever-changing extracurricular activities (as cited in Porter., 2010).

Need for cognition is important for academic learning because it fosters students' interest in critical thinking and problem solving. It can also help the individuals form their own understanding about important concepts, such as historical events or scientific equations and ill-structured problems. Non-academic or outside of the classroom, students' need for cognition is important for their everyday lives.

Education is not the learning of facts but training the mind to think (Albert Einstein). From the educational process to problem solving in the work place, thinking is an essential skill.

¹ Senior Teacher, B.E.H.S Sat Khin, Wundwin Township, Mandalay Region

² Assistant Lecturer, Department of Educational Psychology, Sagaing University of Education

Discoveries are made through critical thinking. The development of critical thinking can help a child's natural curiosity. Curiosity motivates interests that allow one to jump into new activities or unfamiliar circumstances.

Curiosity and wonder is the mother of all science (Dewey, 1910). Piaget (1952) considered curiosity a requirement for the expansion of knowledge. Bruner (1966) theorized that curiosity is so important that it is essential to the survival not only of the individual but also of the species.

Curiosity, or the desire to seek information and knowledge, has been often thought of as one of the important motivators of human behaviors throughout the lifespan (Loewenstein, 1994). Indeed, Berlyne (1963, 1978) and others (e.g., Freemantle, 1995; Grolitz, 1987) declared that curiosity and the acquisition of knowledge has helped to fuel the 21st century's dizzying array of scientific and technological advances. So, a better understanding of curiosity may help us remain on the forefront of advancement and competitiveness in our ever changing world. Curiosity is a fundamental characteristic of young children and adults with active, intelligent minds. Few doubt the importance of curiosity. Living without curiosity makes life boring. Therefore, the study of need for cognition and curiosity of high school students is essential to improve educational systems.

Aims of the Study

The main aim of the study is to study need for cognition and curiosity of High School Students from Wundwin Township. (2019-2020 AY)

The specific objectives of the study are;

1. To find out whether there is a difference in need for cognition of high school students according to gender, grade, subject combination, and schools.
2. To explore whether there is a difference in curiosity of high school students according to gender, grade, subject combination, schools and need for cognition groups.
3. To examine whether there is a relationship between need for cognition and curiosity of high school students.

Scope of the Study

A total of 1600 Grade 10 and Grade 11 (2019-2020) students were selected from four high schools in Wundwin Township by simple random sampling technique.

Definitions of Key Terms

Cognition: Cognition refers to the mental process by which external or internal input is transformed, reduced, elaborated, stored, recovered, and used (Neisser, 1967).

Need for Cognition: The need for cognition is a stable personality trait that describes individuals' tendency to engage in and enjoy effortful cognitive activity (Cacioppo & Petty, 1982).

Curiosity: Curiosity is a state of increased arousal response, promoted by a stimulus high in uncertainty and lacking in information, resulting in exploratory behavior and the search for information (Berlyne, 1960).

Review of Related Literature

This research was studied based on Cognitive-Experiential Self-Theory for students' need for cognition and Self-Determination Theory for students' curiosity.

Cognitive-Experiential Self-Theory (CEST)

CEST is a dual-process model of perception developed by Seymour Epstein. CEST is based around the idea that people operate using two separate systems for information processing: analytical-rational and intuitive-experiential. The analytical rational system is deliberate, slow, and logical. The intuitive-experiential system is fast, automatic, and emotionally driven (as cited in Epstein, S. 1990).

Individual difference in preference for analytical or experiential processing can be measured using the Rational Experiential Inventory (REI). The REI measures the two independent processing modes with two factors: need for cognition (rational measure) and faith in intuition (experiential measure). Rational and experiential styles of thinking are quite different. While humans may utilize both styles, they are independent (Epstein & Pacini, 1999). The rational style is characterized by concrete rules, reasoning, and conscientiousness. In contrast, experiential processing is characterized by intuitive, holistic thinking (big picture as opposed to the individual elements) that is fast, primitive, and is associated with interpersonal relationships, emotionality, and the ability to think abstractly (as cited in Epstein, S. 1990).

The rational system is superior in planning and considering long-term consequences (Epstein, 2008). The rational process develops through actively seeking knowledge, especially through formalized education, whereas the experiential process develops through life experiences (as cited in Epstein, S. 1990).

Self-Determination Theory

As put forth by Deci and Ryan (2000), SDT can be used to explain curious exploration and investigatory manipulation. SDT rooted in the human need for autonomy, competence, and relatedness. Autonomy is the need for independence. Competence is the need to feel capable. Relatedness is the need to feel like one belongs and is connected with others.

Preceding the introduction of SDT, drive theory was of particular interest. Based on physiological needs, this theory essentially stated that behaviors were a response to needs such as food, water, and sex. What drive theory could not explain, however, is the “curious exploration, investigatory manipulation, vigorous play, and other spontaneous activities that had no apparent ties to the dynamics of drive reduction” (Deci & Ryan, 2000). According to Deci and Ryan (2000), SDT essentially explained why individuals engage in activities that they find rewarding or interesting. Unlike drive theory, SDT posited that there does not have to be a desire for equilibrium. In other words, behaviors are not always the result of a deficit. In this sense, behaviors are exhibited not to satisfy a deficiency in basic physiological needs, but to meet the psychological needs of competence, autonomy, and relatedness.

Individuals engage in autonomous exploration based on curiosities in order to feel a sense of competence. The ability to answer a puzzling question or find a solution to a problem increases feelings of competence within oneself (Litman, 2005). Kashdan and Steger (2007) observed that individuals feel extremely curious when a situation satisfies the need for novelty and challenge. However, those factors alone were not enough. Without competence or the ability to understand the novelty or challenge and the freedom to approach the problem as one chooses, the feelings of curiosity were likely not acted upon, as there was no real motivation to do so. The theory asserts that curiosity is optimized when the psychological need for competence, autonomy, and relatedness is met.

Methodology

In this study, descriptive research design and quantitative survey method were used.

Sample

The total of 1600 (male=775, female=825) Grade 10 and Grade 11 students were selected as participants from four high schools by using simple random sampling technique.

Instrumentation

The instruments used in this study were Need for Cognition Scale developed by Cacioppo, Petty and Kao (1984) to measure students' need for cognition and Curiosity and Exploratory Inventory I and II developed by Kashdan, T. B., (2004, 2009) to measure students' curiosity.

Need for Cognition Scale was developed by by Cacioppo, Petty and Kao (1984). The short form of the NCS (Cacioppo et al., 1984) consists of 18 items, assessing a single factor. Curiosity and Exploration Inventory 1 and 2 developed by Kashdan, T. B. (2004, 2009) was used. It is 15 items instrument measuring curiosity with two factors, the motivation to seek out knowledge and challenging, new experiences (stretching), and a willingness to embrace the novel, uncertain, and unpredictable nature of everyday life and be deeply engaged in activities (embracing). There are seven items in stretching and eight items in embracing.

After making the pilot study, the reliability analysis of the instruments was conducted by using the Statistical Package for the Social Science (SPSS) 20.00 Version. The internal consistency reliability (Cronbach's alpha coefficient) of pilot test was 0.801 for students' need for cognition and 0.756 for curiosity of students. So, the instruments can be said to be reliable to use for this study.

Procedure

Firstly, researcher reviewed the related literature from several available books, thesis, journals, dissertation, reports, handouts and internet sources. And then, Need for Cognition Scale and Curiosity and Exploratory Inventory I and II Questionnaires were adapted and also translated to Myanmar version. In order to validate these instruments, experts' review was requested. Next, pilot study was conducted. And, the instruments were taken reliability according to pilot study results by using SPSS (20.00). After taking the validity and reliability of the instruments, the real study was implemented at selected schools in Wundwin Township. After performing real study, the collected data were analyzed and interpreted. In interpreting the real study, the internal consistency reliability (Cronbach's alpha coefficient) was 0.828 for need for cognition of students and 0.758 for students' curiosity. Finally, the necessary suggestions and recommendations for this study were discussed.

Data Analysis and Findings

The main aim of this study was to study need for cognition and curiosity of high school students in Wundwin Township and to investigate the need for cognition of students by gender, by grade, by subject combination and by school and to explore curiosity of students by gender, by grade, by subject combination, by school and by their need for cognition level. By using the Statistical Package for Social Science (SPSS, version 20), the descriptive statistics, independent samples *t* Test and One-way ANOVA were conducted in this section. Finally, Pearson's Product Movement Correlation was also used to find out the relation between need for cognition and curiosity of high school students.

Table 4.1 Descriptive Statistics for Students' Need for Cognition

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Need for Cognition	1600	36	72	60.93	6.351

Grouping Students' Need for Cognition**Table 4.2 Two Groups of Students with Respect to Need for Cognition**

Need for Cognition	Number of Participants	Percent (%)
Low NFC	722	45.1
High NFC	878	54.9
Total	1600	100.0

Where,

NFC = Need for Cognition

Comparison of Students' Need for Cognition by Gender**Table 4.3 Comparison of Mean and Standard Deviation and Results of Independent Samples *t* Test for Students' Need for Cognition by Gender**

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Need for Cognition	Male	775	60.16	6.213	-4.719***	1598	.000	-1.490
	Female	825	61.65	6.399				

Note: *** The mean difference is significant at 0.001 level.

According to the Table 4.3, the result showed that female students had higher need for cognition than male students.

Comparison of Students' Need for Cognition by Grade**Table 4.4 Comparison of Mean and Standard Deviation and Results of Independent Samples *t* Test for Students' Need for Cognition by Grade**

Variable	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Need for Cognition	Grade 10	800	61.35	6.299	2.622**	1598	.009	.831
	Grade 11	800	60.52	6.380				

Note: ** The mean difference is significant at 0.01 level.

The analysis of the result pointed out that the mean scores of Grade 10 students were slightly higher than that of Grade 11 students. It meant that Grade 10 students had better need for cognition than Grade 11 students.

Comparison of Students' Need for Cognition by School**Table 4.5 Descriptive Statistics for Students' Need for Cognition by School**

Variable	Schools	N	Mean	Standard Deviation
Need for Cognition	School 1	400	63.57	5.374
	School 2	400	59.05	6.304
	School 3	400	61.33	6.091
	School 4	400	59.78	6.624

Table 4.5 showed that the mean scores of school 1 students were the highest among other schools.

Table 4.6 Results of One-way ANOVA for Students' Need for Cognition by School

Variable		Sum of Square	df	Mean Square	F	p
Need for Cognition	Between Groups	4808.917	3	1602.972	42.862	.000
	Within Groups	59688.382	1596	37.399		
	Total	64497.299	1599			

Note: *** The mean difference is significant at 0.001 level.

To get more information about which school had higher need for cognition than others, the post-hoc analysis was applied. The results of Games-Howell test were shown in Table 4.7.

Table 4.7 Results of Games-Howell test for Students' Need for Cognition by Schools

(I) School	(J) School	Mean difference (I-J)	Sig.
School 1	School 2	4.527***	.000
	School 3	2.245***	.000
	School 4	3.795***	.000
School 3	School 2	2.282***	.000
	School 4	1.550**	.003

Note: ** The mean difference is significant at the 0.01 level.

***The mean difference is significant at the 0.001 level.

Descriptive Statistics for Students' Curiosity

Table 4.8 Descriptive Statistics for High School Students' Curiosity

Components	N	No. of Items	Minimum	Maximum	Mean	Mean %	Standard Deviation
Embracing	1600	8	14	32	26.28	82.13	3.107
Stretching	1600	7	11	28	23.19	82.82	2.642
Curiosity	1600	15	27	60	49.46	82.43	5.056

Comparison of Students' Curiosity by Grade

Table 4.9 Comparison of Mean and Standard Deviation and Results of Independent Samples t Test for Students' Curiosity by Grade

Variable	Grade	N	Mean	SD	t	df	p	MD
Curiosity	Grade 10	800	49.73	4.880	2.119*	1598	.034	.535
	Grade 11	800	49.20	5.215				

Note: * The mean difference is significant at 0.05 level.

The analysis of the results pointed out that grade 10 students were more curious than grade 11 students.

Comparison of Students' Curiosity by Grade in Each Dimension

Table 4.10 Comparison of Mean and Standard Deviation and Results of Independent Samples *t* Test for Students' Curiosity by Grade in Each Dimensions

Variable	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Embracing	Grade 10	800	26.47	2.980	2.442*	1598	.015	.379
	Grade 11	800	26.09	3.220				

Note: *The mean difference is significant at 0.05 level.

According to the Table 4.10, the result showed that there was a significant difference in embracing at 0.05 level.

Comparison of Students' Curiosity by Subject Combination

Table 4.11 Comparison of Mean and Standard Deviation and Results of Independent Samples *t* Test for Students Curiosity by Subject Combination

Variable	Subject	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Curiosity	Combination 1	800	49.10	4.954	-	1598	.004	-.733
	Combination 7	800	49.83	5.132	2.905**			

Note: **The mean difference is significant at 0.01 level.

The analysis of the results pointed out that combination 7 students were more curious than that of combination 1 students.

Comparison of Students' Curiosity by Subject Combination in Each Dimension

Table 4.12 Comparison of Mean and Standard Deviation and Results of Independent Samples *t* Test for Students Curiosity by Subject Combination in Each Dimensions

Variable	Subject	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Stretching	Combination 1	800	22.93	2.610	-3.830***	1598	.000	-.504
	Combination 7	800	23.44	2.651				

Note: ***The mean difference is significant at 0.001 level.

According to the Table 4.12, in stretching, the analysis of the results pointed out those combination 7 students had better stretching curiosity than combination 1 students.

Comparison of Students' Curiosity by School

Table 4.13 Descriptive Statistics for Students' Curiosity by School

Variable	School	N	Mean	Standard Deviation
Curiosity	School 1	400	51.08	4.676
	School 2	400	48.38	5.026
	School 3	400	49.97	4.569
	School 4	400	48.42	5.410

Table 4.13 showed that the mean scores of school 1 students were the highest among other schools.

Table 4.14 Results of One-way ANOVA for Students' Curiosity by School

Variable		Sum of Square	df	Mean Square	F	p
Curiosity	Between Groups	2056.265	3	685.422	28.186***	.000
	Within Groups	38811.485	1596	24.318		
	Total	40867.750	1599			

Note: ***The mean difference is significant at 0.001 level.

To get more information about which school had higher curiosity than others, the post-hoc analysis was applied. The results of Games-Howell test were shown in Table 4.15.

Table 4.15 Results of Games-Howell test for Students' Curiosity by School

(I) School	(J) School	Mean difference (I-J)	Sig.
School 1	School 2	2.705***	.000
	School 3	1.108**	.004
	School 4	2.657***	.000
School 3	School 2	1.597***	.000
	School 4	1.550***	.000

Note: ** The mean difference is significant at the 0.01 level.

*** The mean difference is significant at the 0.001 level.

Comparison of Students' Curiosity by School in Each Dimension

Table 4.16 Descriptive Statistics for Students' Curiosity Dimensions by School

Dimensions	Schools	N	Mean	Standard Deviation
Embracing	School 1	400	26.88	3.013
	School 2	400	25.67	3.174
	School 3	400	26.75	2.737
	School 4	400	25.82	3.298
Stretching	School 1	400	24.20	2.379
	School 2	400	22.71	2.626
	School 3	400	23.23	2.475
	School 4	400	22.61	2.772

Table 4.16 showed that the mean scores of school 1 students were the highest among other schools.

Table 4.17 The Results of One-way ANOVA for Students' Curiosity Dimensions by School

Dimensions		Sum of Squares	df	Mean Square	F	p
Embracing	Between Groups	464.607	3	154.869	16.509***	.000
	Within Groups	14971.738	1596	9.381		
	Total	15436.344	1599			
Stretching	Between Groups	640.407	3	213.469	32.387***	.000
	Within Groups	10519.462	1596	6.591		
	Total	11159.869	1599			

Note: *** The mean difference is significant at the 0.001 level.

To get more information about which school had higher curiosity than others, the post-hoc analysis was applied. The results of Games-Howell test were shown in Table 4.18.

Table 4.18 Results of Games-Howell test for Students' Curiosity Dimensions by School

Variable	(I) School	(J) School	Mean difference (I-J)	Sig.
Embracing	School 1	School 2	1.207***	.000
		School 4	1.063***	.000
	School 3	School 2	1.075***	.000
		School 4	.930***	.000
Stretching	School 1	School 2	1.498***	.000
		School 3	.975***	.000
		School 4	1.595***	.000
	School 3	School 2	.523*	.020
		School 4	.620**	.005

Note: * The mean difference is significant at the 0.05 level.
 ** The mean difference is significant at the 0.01 level.
 *** The mean difference is significant at the 0.001 level.

Comparison of Students' Curiosity by Their Need for Cognition Group

Table 4.19 Comparison of Mean and Standard Deviation and Results of Independent Samples *t* Test for Students' Curiosity by NFC Group

Variable	Group	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Curiosity	Low NFC	722	46.78	4.664	-21.968***	1598	.000	-4.891
	High NFC	878	51.67	4.232				

Note: *** The mean difference is significant at 0.001 level.

The analysis of the results pointed out that the students from high NFC group had better curiosity than the students from low NFC group.

Comparison of Students' Curiosity by Their NFC Group in Each Dimension

Table 4.20 Comparison of Mean and Standard Deviation and Results of Independent Samples *t* Test for Students Curiosity by Subject Combination

Variable	Group	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Embracing	Low NFC	722	24.84	2.919	-18.549***	1598	.000	-2.627
	High NFC	878	27.46	2.734				
Stretching	Low NFC	722	21.94	2.493	-18.855***	1598	.000	-2.264
	High NFC	878	24.21	2.302				

Note: ***The mean difference is significant at 0.001 level.

The analysis of the results pointed out those High NFC group students had better embracing curiosity and stretching curiosity than Low NFC group students.

Correlation between Need for Cognition and Curiosity of High School Students

In order to explore the relationship between need for cognition and curiosity of high school students, Pearson Product-Moment coefficient was calculated. The result was calculated.

Table 4.21 Relationship between Need for Cognition and Curiosity of High School Students

Variables	Need for Cognition	Curiosity
Need for Cognition	1	.598**
Curiosity	.598**	1

Note: ** Correlation is significant at the 0.01 level (2-tailed).

According to the Table 4.21, the result showed that need for cognition of students was positively moderate correlated with curiosity ($r=.598$, $p<0.01$). It can be said that need for cognition and curiosity had significant positive relationship.

Impact of Need for Cognition on Curiosity

Table 4.22 Model Summary for Need for Cognition and Curiosity of Students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.598 ^a	.358	.358	4.052

a. Predictors: (Constant), nfc total

The result indicates that the adjusted R^2 was .358. This indicates that 35.8% of the variance in curiosity was explained by need for cognition of students.

Table 4.23 The Results of Simple Linear Regression Coefficient for Need for Cognition and Curiosity of High School Students

Model	Unstandardized Coefficient		Standardized Coefficient	<i>t</i>	<i>p</i>
	B	Std. Error	Beta		
1(constant)	20.446	.977		20.917	.000
nfc total	.476	.016	.598	29.846	.000

a. Dependent Variable: Total (curiosity)

According to the result, the identified equation to understand the relationship was;

$$Cu = 20.446 + 0.476 \text{ NFC}$$

Where, Cu = Curiosity

NFC = Need for Cognition

It can be interpreted that the more need for cognition the students, the more curious they become.

Conclusion

First, based on the finding in this research, the result described that most students were high in need for cognition as well as the minimum number of students were low in need for cognition.

The result of independent samples *t* test showed that there was a significant difference for students' need for cognition according to gender at 0.001 level. The result indicated that female students were higher than that of male students in need for cognition. This may be because females have naturally intrinsic motivation to seek out knowledge about places or facts or about people. But, in students' curiosity, there was no significant difference according to gender. This may be because in today's, both male and female have equal opportunities to do work together. And, no one can say that which one is better than others.

In grade, the result indicated that there was a significant grade difference in need for cognition of students at 0.01 level. And, it can be interpreted that Grade 10 students had better need for cognition than Grade 11 students. This may be because Grade 10 students are the students who transform from middle to higher grade. They must face many new experiences and challenges. They have active and exploring minds, tend to seek out information from their surroundings, and habitually spend time coping with predicaments in their daily lives (Cacioppo, Petty, Feinstein, & Jarvis, 1996). Besides, in students' curiosity, there was a significant grade difference at 0.05 level. The result showed that Grade 10 students had higher curiosity than Grade 11 students. This may be because, according to our Myanmar Education System, Grade 10 students had more chance to discover new things and experiences than Grade 11 students. And, there is a shift in the target of the Grade 11 students' curiosity. Grade 11 students become more focused on social factors. For each dimension, there was a significant difference on embracing at 0.05 level but there was no significant difference in stretching.

Moreover, according to the result of independent samples *t* test, there was no significant difference in need for cognition of combination 1 and combination 7 students. This may be because the students choose their specialized subjects according to their interests and therefore, their need for cognition for the respective subjects is the same. But, in students' curiosity, the result indicated that there was a significant difference according to subject combination at 0.001 level. Therefore, it can be interpreted that combination 7 students had better curiosity than combination 1 students. This may be because combination 7 students have more practical activities than combination 1 students and they might have many things to discover because science itself is ever new and update thing. Every school has laboratory room and materials for combination 7 students and biology which is one of combination 7 subjects is so practical and extremely correlates with natural environment. For each dimensions, there was a significant difference on stretching at 0.001 level but no significant in embracing.

According to the result of ANOVA, there was a significant difference in students' need for cognition by schools at 0.001 level. Then, to obtain more information, Post Hoc test was executed by Games Howell's method. The result indicated that the mean score of students' for school 1 was the highest in need for cognition among the other schools. This may be due to their geological backgrounds and classroom environments. Besides, this may be because the school 1 creates a learning environment that can be more actively engage in effortful cognitive activities for students. For curiosity, there was significant difference both in embracing and in stretching at 0.001 level. For more specific information, Post Hoc test was carried out. According to the result, in embracing, students from school 1 were highest among other schools' students. Moreover, in stretching, students from school 1 were also highest among other schools' students. This may be because the teachers from school 1 can help to develop their students' curiosity by fulfilling their basic needs: competence, relatedness and autonomy and the school 1 can produce students who are intrinsically motivated to learn and explore.

According to the result of independent samples *t* test, there was a significant difference in curiosity of students by their NFC groups at 0.001 level. So, it may be said that the students from High NFC group have higher curiosity than that of the students from Low NFC group. This may be because the students who are high in need for cognition have better intrinsic motivation to do things themselves. They have a natural tendency to seek, acquire, think about, and reflect back on information to make sense of stimuli and life experiences. They are more likely to be based on effortful thought. But, students low in need for cognition is more likely to rely on others such as instructors, experts, etc.

In order to assess whether there is significant relationship between need for cognition and curiosity of students or not, Pearson-Product Moment correlation was conducted. And, the result

showed that need for cognition and curiosity of students was positively correlated ($r = .6, p < 0.01$). As the correlation was positive, it can be interpreted that with the increase in need for cognition, there will be increase in curiosity and vice versa. And, simple linear regression was used to predict curiosity from need for cognition. The result indicated that the adjusted R square was .358 and therefore 35.8% of variance in curiosity was predicted by need for cognition of students.

Students' enjoyment and engagement in effortful thinking can improve the level of education they wish to achieve (Cacioppo & Petty, 1982). Need for cognition is important for teachers and educators for several reasons. If they can generate a learning environment that encourages critical thinking, then students' attitude towards need for cognition might increase as well. This could have a positive influence on their grade achievements. If the students are high need for cognition, they may participate more in the classroom and will actively seek new information and knowledge (Ormrod, 2011).

Besides, maintaining high levels of student curiosity is worthy of addressing in regard to education because it is considered beneficial to well-being and because it is the motivation to think and interpret, which is the first step to learning (Kashdan & Steger, 2007; Tamdogon, 2006). Berlyne (1978) also viewed curiosity as a virtue and an important component of any sound child's educational program. Berlyne believed that children's natural, innate curiosity should be nurtured by encouraging them to raise questions and seek answers and to wonder about the things around them, i.e., to have inquiring minds.

In conclusion, as teachers and educators in the whole country, first they must understand their students' differences in interests and ability levels. After that, they must create the learning contents and the classroom environments that are consistent with the students' levels. By doing so, students' NFC and curiosity levels will become higher and can benefit not only in educational societies but also in modern industrial societies. Finally, our education system will become more active and developed.

Acknowledgements

First of all, I would like to expand my thankfulness to Dr. Saw Pyone Naing (Rector) and Dr. Myat Myat Thaw (Pro-rector) in Sagaing University of Education for their excellent arrangements and permissions to do this research. And, I would like to offer my special gratitude to Dr. Khin Hnin Nwe (Professor & Head, Department of Educational Psychology, Sagaing University of Education) for her precious advice and kind support on this paper. Besides, I would like to specially thank to my supervisor, Daw Pa Pa Oo (Assistant Lecturer, Department of Educational Psychology, Sagaing University of Education) for always offering genuine kindness and support. Finally, I would like to include a special thanks to Dr. Minn Than (Professor & Head, Department of English, Sagaing University of Education) and I really appreciate her insightful comments and valuable editing towards this paper.

References

- Berlyne, D. E. (1965). Curiosity and education. In J. B. Krumboltz (Ed.), *Learning and the Educational Process* (pp. 67-89).
- Berlyne, D. E. (1966). Curiosity and exploration. *Science*, 153, 25-33.
- Berlyne, D. E. (1978). Curiosity and learning. *Motivation and Emotion*, 2 (2), 97-175
- Berlyne, D. E. (1950). Novelty and Curiosity as determinants of exploratory behavior1. *British Journal of Psychology*. General Section, 41(1-2), 68-80.
- Berlyne, D. E. (1954). A theory of human curiosity. *British Journal of Psychology*, 45, 180-191.
- Cacioppo, J. T, Petty, R. E., & Morris, K. J. (1983). Effects of need for cognition on message evaluation, recall, and persuasion. *Journal of Personality and Social Psychology*, 45. 805-818.

- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality And Social Psychology*, 42(1), 116-131. doi:10.1037/0022-3514.42.1.116.
- Cacioppo, J. T., Petty, R. E., & Kao C. F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment*. 48. 306-307.
- Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. B. G. (1996). *Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition*. Psychological Bulletin, 119, 197–253. <http://dx.doi.org/10.1037/0033-2909.119.2.197>
- Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227.
- Deci, E. L., & Ryan, R. M. (2008a). *Facilitating optimal motivation and psychological well being across life's domains*. Canadian Psychology, 49(1), 14-23.
- Epstein, S. (1990). *Cognitive-experiential self-theory*. In L. Pervin (Ed.), *Handbook of personality theory and research* (pp. 165-192). New York: Guilford Press.
- Epstein, S. (1994). *Integration of the cognitive and the psychodynamic unconscious*. American Psychologist, 49, 709-724.
- Epstein, S., & Meier, P. (1989). Constructive thinking: A broad coping variable with specific components. *Journal of Personality and Social Psychology*, 57, 332-349.
- Epstein, S., Pacini, R., Denes-Raj, V., & Heier, H. (1996). Individual differences in intuitive-experiential and analytical-rational thinking styles. *Journal of Personality and Social Psychology*, 71, 390-405.
- Kashdan, T. B., & Steger, M. F. (2007). Curiosity and pathways to well-being and meaning in life: Traits, states, and everyday behaviors. *Motivation & Emotion*, 31(3), 159-173. doi:10.1007/s11031-007-9068-7.
- Kashdan, T. B., Gallagher, M. W., Silvia, P. J., Winterstein, B. P., Breen, W. E., Terhar, D., & Steger, M. F. (2009). The Curiosity and Exploration Inventory-II: Development, factor structure and psychometrics. *Journal of Research in Personality*, Retrived July 20,2018 from <https://www.sciencedirect.com/science/journal/00926566>.
- Kashdan, T. B., Rose, P., & Fincham, F. D. (2004). Curiosity and exploration: Facilitating positive subjective experiences and personal growth opportunities. *Journal of Personality Assessment*, 82(3), 291-305.
- Kashdan, T., & Yuen, M., (2007). Whether highly curious students thrive academically depends on perceptions about the school learning environment: A study of Hong Kong adolescents. *Motivation and Emotion*, 31(4), 260-270. Doi:10.1007/s11031-007-9074-9.
- Loewenstein, G. (1994). The psychology of curiosity: A review and reinterpretation. *Psychological Bulletin*, 116(1), 75-98.
- Ormord, J. E. (2011). *Educational Psychology Developing Learners*. (7th Edition). U. S.: Pearson.
- Piaget, J. (1952). The language and thought of a child. New York: World.
- Piaget, J. (1936/1952). The origins of intelligence in children, New York: International.
- Pluck, G & Johnson, H.L. (2011), Stimulating curiosity to enhance learning. *GESJ: Educational Science and Psychology* Retieved August 13, 2019 from <http://eprints.whiterose.ac.uk/74470/>.
- Porter, K. M., (2010). *An exploratory study of the need for cognition in children and adoloscents*. Theses and Dissertatons. 942.[http:// utdr.utoledo.edu/ theses-dissertations/942](http://utdr.utoledo.edu/theses-dissertations/942).

THE MEDIATION EFFECT OF SELF-TALK ON THE RELATION BETWEEN PARENTAL AUTONOMY SUPPORT AND EMOTION REGULATION OF UNDERGRADUATE STUDENTS FROM SAGAING UNIVERSITY OF EDUCATION

Ei Yadanar Oo¹, Wai Wai Than²

Abstract

The main purpose of this study was to study the mediation effect of self-talk on the relation between parental autonomy support and emotion regulation of undergraduate students from Sagaing University of Education. The quantitative research approach and correlational design were used in this study. A total of 1037 undergraduate students from Sagaing University of Education were selected as participants by using simple random sampling technique. In this study, Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004) with 36 items, Perceived Parental Autonomy Support Scale (Bureau & Mageau, 2014) with 24 items, and Self-Talk Scale (Brinthaup, Hein, & Kramer, 2005) with 22 items were used to measure undergraduate students' emotion regulation, parental autonomy support, and self-talk. The result revealed that undergraduate students had high emotion regulation, and perceived high parental autonomy support, and used highly self-talk. In this study, the result of Simple Mediation Path Analysis indicated that self-talk had significant direct effect on emotion regulation and parental autonomy support had both significant direct and indirect effect on emotion regulation. In this research, 33.18% of the variance in Emotion Regulation can be explained by the path model.

Keywords: Emotion Regulation, Parental Autonomy Support, Self-Talk

Introduction

A large number of students move away from their families and go to University. Going to University, they encounter the three stages of Rite of Passage such as Separation from home and parents, Transition to live on their own, and Incorporation into college life (Tinto, 1975). Only if the students pass through these stages successfully, they can stand at University Life smoothly.

In trying for Incorporation into University Life, many university students can face stressors such as academic demands, peer group pressure, financial strains, relationship with friends, and anxiety regarding future employment (Iliades, 2011). When they cannot solve these stressors, they may experience higher levels of psychological distress than the general population, which consequently identifies this population as high-risk for mental health. Therefore, it is expected that undergraduate students from Sagaing University of Education may experience stressors and psychological distress.

Moreover, when the growing number of students separate from parents and go to University, they may feel various emotional problems such as hidden learning problems, sleep deprivation and insomnia, anxiety disorders, eating disorders, substance abuse, and eventually, from depression to suicide risk because they may face some stressors in University (Iliades, 2011). University students have to solve these emotional problems. As the students who can't handle their emotional problems, there come common educational problems including inattentiveness, distraction, inappropriateness, lack of social skills, helplessness, impulsivity, and extreme anxiety (Isazaegan, Jemaabadi, & Saadatmand, 2010; cited in Hesampour, 2016). If they can solve these problems, they can have good psychological well-being (Hesampour, 2016). In order for students to be able to solve these emotional problems, they must have emotion regulation ability (Hesampour, 2016).

¹ Senior Assistant Teacher, Basic Education High School Sin Inn, Shwebo Township, Sagaing Region

² Lecturer, Department of Educational Psychology, Sagaing University of Education

Also students from Sagaing University of Education, pre-service teachers, may experience emotional problems and educational problems. Therefore, to experience happy and successful university life, emotion regulation skill is necessary for these students to solve undeniable emotional problems. Therefore, it should be examined whether undergraduate students have emotion regulation skill.

Moreover, if people regulate their emotions successfully, they can have many advantages such as improving health outcomes, relationship, and academic work performance (Brackett & Salovey, 2004). On the other hand, difficulties in emotion regulation may have many disadvantages such as depression, social anxiety, borderline personality disorder, bipolar disorder, eating disorder, and substance use disorder (Gross & Munoz, 1995). Besides, weak emotion regulation leads to mental disorders such as depression and anxiety (Isazadegan et al., 2010; cited in Hesampour, 2016). Therefore, university students should good emotion regulation skills to avoid psychological distress and emotional problems.

This leads to many questions on which factors can contribute to emotion regulation of university students. Generally, there are the two types of factors which can contribute to emotion regulation skill, namely, Intrinsic factors and Extrinsic factors (Calkins & Fox, 2003).

Therefore, it was firstly studied extrinsic factors. Then, it was found that extrinsic factors which can contribute to emotion regulation include sibling and peer relationships (Thompson, Mayer, 2007; cited in Shelleby, 2010), and caregivers (parents) and teachers (Greenberg, Kusche, Cook, & Quamma, 1995; cited in Shelleby, 2010). Among these factors, young children are most reliant on primary caregivers. Thus, parents are typically the most influential extrinsic factor that can influence and guide their children's development of emotion regulation within their cultural context, especially for young children (Calkins & Johnson, 1998; Denham, Zoller, & Couchoud, 1994; Kopp, 1989). Therefore, parental component is the most influential extrinsic factor for development of emotion regulation.

In addition to extrinsic factors, important examples of the intrinsic factors which can influence on emotion regulation are the child temperament (Fox, 1998; cited in Shelleby, 2010), effortful control (Kochanska, Murray, & Harlan, 2000; cited in Shelleby, 2010), language abilities (Greenberg, Kusche, & Speltz, 1991; Domitrovich, Cortes, & Greenberg, 2007; cited in Shelleby, 2010), and psychological factors such as vagal tone (Santucci et al., 2008; cited in Shelleby, 2010). Among these factors, Language abilities involve writing and speaking skills and so on. In addition, Language has inner speech (self-talk) and private speech. Gradually, children's own language becomes their principal tool of intellectual growth, first as speech-for-self emitted aloud (private speech) to guide and control their own actions and eventually as silent self-talk (inner speech) (Vygotsky, 1962). Therefore, self-talk (children's own language), one of the intrinsic factors, may facilitate for the development of emotion regulation.

Furthermore, it was found that parental autonomy support as extrinsic factor can influence on not only students' emotion regulation but also students' self-talk as intrinsic factor. In an autonomy supportive environment, individuals' self-talk included more expressions of positive emotions and fewer expressions of negative emotions. Then, swearing is used to express negative emotions (Rassin and Muris 2005; cited in Oliver, Markland, Hardy, & Petherick, 2008). Therefore, individuals in the controlling condition used more swear words and individuals in the autonomy-supportive condition reported greater interest and enjoyment of the task, less pressure and tension, and greater perceived choice. Therefore, individuals in the autonomy-supportive condition used more informational (e.g., feedback and strategic), more positive emotional, less controlling (e.g., instructional and self-critical) and less negative emotional self-talk than individuals in the controlling condition (Oliver, et al., 2008).

Then, under autonomy-supportive conditions, individuals feel more able to express and endorse their own perspective in their self-talk (Oliver, et al., 2008). However, individuals in the controlling condition more frequently verbalised negative emotions and self-criticism (Oliver, et al., 2008). Therefore, it seems likely that individuals' negative emotional reaction to being controlled resulted in the production of more self-talk relating to their feelings (Oliver, et al., 2008). Therefore, it should be examined whether self-talk as intrinsic factor mediates the relationship between parental autonomy support and emotion regulation of undergraduate students from Sagaing University of Education.

For the above reasons, this study aims to study effect of parental autonomy support and self-talk on emotion regulation of undergraduate students from Sagaing University of Education. Therefore, it can be expected that this study will contribute to the students to have good emotion regulation skill for avoiding emotional problems, and will guide readers by focusing efforts on nurturing parental autonomy support, in addition to increasing acceptance and preventing controlling parenting. Then, this study will guide to use widely self-talk to have good emotion regulation skill.

Aim and Objectives

The main aim of this study was to study the mediation effect of self-talk on the relation between parental autonomy support and emotion regulation of undergraduate students from Sagaing University of Education.

The specific objectives of this study were;

- i. to investigate parental autonomy support, self-talk, and emotion regulation of undergraduate students from Sagaing University of Education, and
- ii. to examine whether parental autonomy support predicts emotion regulation of undergraduate students directly and indirectly through the mediator of self-talk.

Hypotheses for Mediation Path Analysis

Hypothesis (1): Parental Autonomy Support directly predicts Emotion Regulation. (Brenning, et al., 2015)

Hypothesis (2): Parental Autonomy Support directly predicts Self-Talk. (Oliver, et al., 2008)

Hypothesis (3): Self-Talk directly predicts Emotion Regulation. (Salas, et al., 2018)

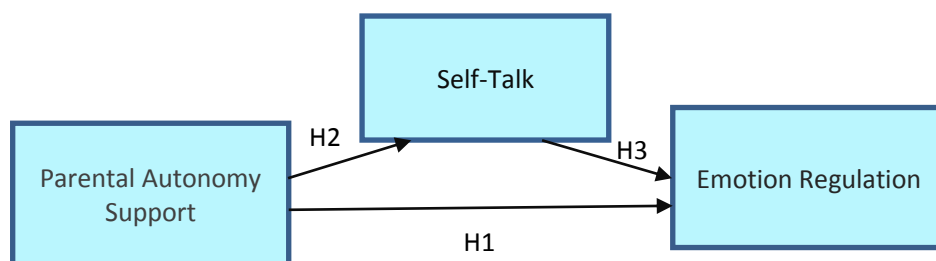


Figure 1 Proposed Model for Predicting Emotion Regulation from Parental Autonomy Support and Self-Talk

Definitions of Key Terms

Emotion Regulation: Emotion regulation is defined as a multidimensional construct involving the (a) awareness and understanding of emotions, (b) acceptance of emotions, (c) ability to control impulsive behaviors and behave in accordance with desired goals when experiencing negative emotions, and (d) ability to use situationally appropriate emotion

regulation strategies flexibly to modulate emotional responses as desired in order to meet individual goals and situational demands (Gratz, & Roemer, 2003).

Parental Autonomy Support: Parental autonomy support can be defined as parental encouragement of the students' problem-solving, selection and decision-making (Grolnick, 1989).

Parental Autonomy Support can be described by dividing two components in the following;

(i) Controlling parenting behavior refers to three specific types of controlling behaviors toward late adolescents and young adults: (a) threats to punish, (b) guilt-inducing criticisms, and (c) performance pressures (Mageau et al., 2015).

(ii) Autonomy-supportive parenting refers to (a) acknowledging the child's feelings, (b) giving a rationale for rules and demands, and (c) providing choice and opportunities for initiative taking (Joussemet, Landry, & Koestner, 2008).

Self-Talk: Self-talk has been defined as an internal dialogue in which individuals interpret feelings and perceptions, regulate and change evaluations and convictions and give themselves instructions and reinforcement (Hackfort & Schwenkmezger, 1993).

Method

Research Design

In this study, correlational design and quantitative research approach were used.

Sample of the Study

Participants in this study were selected from Sagaing University of Education by using simple random sampling technique in order to collect the data. The undergraduate students (first year to fifth year) during the academic year of 2019-2020 were selected from Sagaing University of Education. The total number of participants was 1037 students (517 males, 520 females).

Instrumentation

Perceived Parental Autonomy Support Scale (P-PASS) with 24-item version validated and revised by Bureau and Mageau (2014) was adapted and used to examine parental autonomy support of undergraduate students. This instrument (P-PASS) with 24-item version measured perceptions of three autonomy-supportive behaviors (i.e., choice, four items; rationale, four items; acknowledgement of feelings, four items) and three controlling ones (i.e., threats to punish, four items; guilt-inducing criticisms, four items; performance pressures, four items).

And, Self-Talk Scale (STS) developed and validated by Brinthaup, Hein, & Kramer (2005) includes 22 items. The STS included four subscales: Social Assessment with 8 items (the tendency to ruminate), Self-Reinforcement with 5 items (praise given to oneself), Self-Management with 5 items (instruction given to guide one's speech or behaviour), and Self-Criticism with 4 items (criticism given to oneself).

Furthermore, Difficulties in Emotion Regulation Scale (DERS) validated by Gratz and Roemer in (2004) included 36 items. It consists of six subscales: Acceptance of Emotional Responses (6 items), Engaging in Goal-directed behavior (5 items), Impulse Control (6 items), Emotional Awareness (6 items), Access to Emotion Regulation Strategies (8 items), and Emotional Clarity (5 items).

Then, the whole scales of Parental Autonomy Support, Self-Talk, and Emotion Regulation of University students indicated satisfactory internal consistency with Cronbach's

alpha values of (0.871), (0.776) and (0.922). Therefore, these three instruments can be considered as reliable and valid instruments for this study.

Data Analysis

The data collected from the participants were analyzed by using Statistical Package for Social Science (SPSS 23.0) and R studio (version 3.5.2). The data were analyzed by using Descriptive Statistics, and Simple mediation path analysis.

Descriptive analyses were used to know the mean and standard deviation, maximum and minimum scores for parental autonomy support, self-talk and emotion regulation of University students.

Finally, Simple mediation path analysis was used to examine whether self-talk mediates the relationship between parental autonomy support and emotion regulation of undergraduate students from Sagaing University of Education.

Results

The aim of the present study was to investigate effect of parental autonomy support and self-talk on emotion regulation of students from Sagaing University of Education. The collected data were analyzed by using the Statistical Package for the Social Science (SPSS) 23 version and R studio (version 3.5.2).

Emotion Regulation (ER) of Undergraduate Students

The participants' level of emotion regulation was investigated by the use of Difficulties in Emotion Regulation Scale. The maximum score, minimum score, mean and standard deviation related to emotion regulation were presented in Table 1.

Table 1 Descriptive Statistics for Emotion Regulation of Undergraduate Students from Sagaing University of Education

Variable	No. of items	Minimum	Maximum	Mean	Mean %	SD
Acceptance	6	6	30	21.01	70.03	4.561
Goal-directed behavior	5	5	25	15.51	62.04	3.525
Impulse Control	6	6	30	21.49	71.63	4.461
Awareness	6	7	30	18.78	62.6	4.205
Strategies	8	8	40	29.57	73.93	5.930
Emotional Clarity	5	7	25	17.98	71.92	3.381
ER total	36	51	179	124.34	69.08	19.228

According to Table 1, overall emotion regulation level of undergraduate students is described. The possible score range for emotion regulation of undergraduate students is (36-180). The observed mean of undergraduate students for emotion regulation is 124.34. The observed mean is within the higher portion of the range. Therefore, it can be concluded that undergraduate students from SUOE had high emotion regulation.

Among the subscales of emotion regulation, undergraduate students get the highest mean percent (73.93%) in strategies subscale and the lowest mean percent (62.04%) in goal-directed behavior subscale. Therefore, it can be concluded that undergraduate students from SUOE are highest in the uses of strategies to regulate their emotions and are lowest in regulating emotion by setting goals.

The mean percents of all ER subscales are above 60%. Therefore, it can be seen that undergraduate students in SUOE are satisfactorily high in acceptance to their emotions, in

regulating their emotions by setting goals, in controlling their impulse behavior, in understanding and awareness of their emotions, in regulating emotions by using appropriate strategies, and in knowing their emotions clearly.

Parental Autonomy Support (PAS) of Undergraduate Students

The participants' level of parental autonomy support was investigated by the use of Perceived Parental Autonomy Support Scale. The maximum score, minimum score, mean and standard deviation related to parental autonomy support were presented in Table 2.

Table 2 Descriptive Statistics for Parental Autonomy Support of Undergraduate Students from Sagaing University of Education

Variable	No of items	Minimum	Maximum	Mean	SD
Choice	4	4	20	15.14	2.717
Rationale	4	5	20	15.91	2.425
Acknowledgement	4	4	20	15.74	2.546
Threats	4	4	19	9.00	3.267
Pressures	4	6	20	13.92	2.406
Criticisms	4	4	20	9.28	3.412
PAS Total	24	36	116	86.59	10.966

According to Table 2, the observed mean of students for parental autonomy support is 86.59. The possible score range for parental autonomy support of students is (24-120). The observed mean is in the higher portion of the score range. Therefore, it can be concluded that parental autonomy support of students from SUOE is satisfactorily high.

Among the subscales of parental autonomy support, undergraduate students get the highest mean (15.91) in rationale subscale and the lowest mean (9.00) in threats subscale. Therefore, it can be concluded that undergraduate students from SUOE are highest in perceiving support from parents by giving appropriate rationale and are lowest in perceiving support from parents by doing threats. The mean scores of four subscales of PAS (choice, rationale, acknowledgement and pressures) are higher than those of two subscales (threats and criticisms). Therefore, it can be concluded that undergraduate students from SUOE highly perceived opportunities from parents to choose themselves within certain limits, appropriate rationale when parents limit them, acknowledgement their feelings by parents, giving pressures on their performance by parents and are lowest in perceiving threats by punishing and criticisms with guilt from parents.

Self-Talk of Undergraduate Students

The participants' level of Self-Talk was investigated by the use of Self-Talk Scale. The maximum score, minimum score, mean and standard deviation related to parental autonomy support were presented in Table 3.

Table 3 Descriptive Statistics for Self-Talk of Undergraduate Students from Sagaing University of Education

Variable	No of items	Minimum	Maximum	Mean	Mean %	SD
Social Assessment	8	8	40	28.24	70.6	4.651
Self-reinforcement	5	6	23	16.49	65.96	2.490
Self-criticisms	4	4	20	10.85	54.25	2.780
Self-management	5	5	25	19.66	78.64	3.026
ST Total	22	45	104	79.06	71.87	8.565

According to Table 3, overall self-talk of undergraduates is described. The possible score range for self-talk of undergraduate students is (22-110). The observed mean of students for self-talk is 79.06. Therefore, it can be concluded that self-talk of students from SUOE is satisfactorily high.

Among the subscales of self-talk, undergraduate students from SUOE had the highest mean percent (78.64%) in self-management subscale and the lowest mean percent (54.25%) in self-criticism subscale. Therefore, it can be concluded that undergraduate students from SUOE are highest in managing and instructing themselves before doing something and are lowest in criticizing about themselves.

Three subscales of self-talk are above 60% and self-criticism subscale is below 60%. Therefore, it can be concluded that undergraduate students from SUOE are satisfactorily high in managing and instructing themselves before doing something, in reviewing, assessing and thinking by themselves about relationships with other people, in encouraging themselves about something and are low in criticizing about themselves.

The Mediating Role of Self-Talk on the Relationship between Parental Autonomy Support and Emotion Regulation

The simple mediation path analysis was used to explicate the underlying mechanisms of the relationship between **Emotion Regulation** (DV) and **Parental Autonomy Support** (IV) through **Self-Talk** (Mediator).

The direct and indirect effects between variables were presented in Table 4.

Table 4 Summary of Causal Effects for the Path Model (Emotion Regulation)

Outcomes	Determinant	Causal Effects		
		Direct	Indirect	Total
ST $R^2=0.115$	PAS	0.339***	-	0.339***
ER $R^2=0.3318$	PAS	0.427***	0.049***	0.476***
	ST	0.144***	-	0.144***

Note: *** denotes significant paths t at $p < .001$

(ST=Self-Talk, PAS=Parental Autonomy Support, ER=Emotion Regulation)

According to the result of path analysis, Complimentary Partial Mediation Model was found. Self-Talk had significant direct effect on Emotion Regulation. And, Parental Autonomy Support had significant direct effect on Emotion Regulation, and also significant indirect effect on Emotion Regulation through Self-Talk as a mediator. Totally, 33.18% of the variance in Emotion Regulation can be explained by the path model.

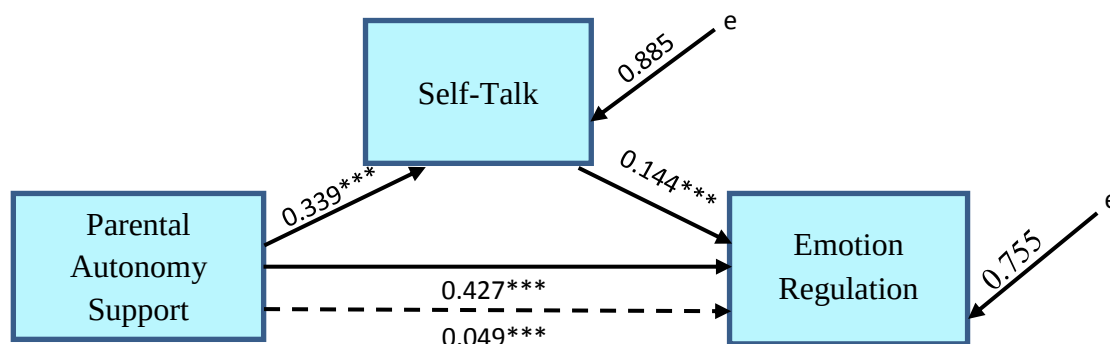


Figure 2 Simple Path Diagram for Predicting Emotion Regulation from Parental Autonomy Support and Self-Talk

*** denotes significant paths t at $p < .001$.

This result indicated that parental autonomy support and self-talk are the main causes of students' Emotion Regulation. Therefore, students who perceive positive parental autonomy support use positive self-talk, and consequently, have high adaptive emotion regulation skills. It can be claimed that Self-Talk can explain the nature of the relationship between Parental Autonomy Support and Emotion Regulation.

Conclusion

The result showed that undergraduate students from SUOE have high emotion regulation. Therefore, it can be concluded that undergraduate students are highest in the uses of strategies to regulate their emotions and are lowest in regulating emotion by setting goals. And it was found that undergraduate students had high level of overall parental autonomy support. Then, students had high level in choice, rationale, and acknowledgement and had low level in threats and criticisms and had moderate level in pressures. Then, it was found that undergraduate students had high level of overall self-talk. Then, most undergraduate students had the highest self-talk about self-management and had the lowest self-talk about self-criticism and other two subscales of self-talk of students were satisfactorily high.

The next objective of this research was to examine whether Self-Talk mediates the relationship between Parental Autonomy Support and Emotion Regulation of Undergraduate Students.

According to the result of Simple Mediation Path Model, Self-Talk had significant direct effect on Emotion Regulation. And Parental Autonomy Support had both significant direct and indirect effect on Emotion Regulation. Totally, 33.18% of the variance in Emotion Regulation can be explained by the path model. Therefore, parental autonomy support and self-talk are significant predictors for Emotion Regulation.

Therefore, it can be interpreted that undergraduate students with higher perceived parental autonomy support used higher self-talk. Then, using higher self-talk improves emotion regulation.

According to Joussemet, et al (2008), autonomy-supportive parenting was parenting students by acknowledging the child's feeling, giving rationale for rules and demands, providing choice and opportunities for initiative taking, and not controlling their behavior by punishing, criticizing and giving pressures. In other words, autonomy-supportive parenting was showing respect for young's unique needs and feelings and students with autonomy-supportive parenting has sense of ownership of behaviour (Soenens, et al., 2007). In contract to it, controlling parenting was neglecting on young's unique needs and feelings and students with controlling parenting was thwarted on autonomy by parents and they decrease intrinsic motivation. Students with sense of ownership behavior use positive forms of self-talk (Oliver et al., 2008). Positive

forms of self-talk are self-management (giving oneself instructions or directions about what one should do), social assessment (imagining how others respond to one said) and self-reinforcement (feeling proud of something done).

Moreover, higher self-talk are associated with cognitive flexibility (Miyake, Emerson, Padilla & Ahn, 2004), cognitive performance and self-monitoring (Perrone-Bertolotti, Rapin, Lachaux, Baciú, & Loevenbruck, 2014) and planning (Lidstone, Meins, & Fernyhough, 2010). Cognitive flexibility improves Emotion Regulation (Zarei & Momeni, 2017) and planning can promote Emotion Regulation (Demarary & Jenkins, 2011). Therefore, parental autonomy support and self-talk improves emotion regulation of undergraduate students from Sagaing University of Education.

Based on the above discussion, in order to improve Emotion Regulation of undergraduate students from SUOE, parents and teachers should:

- guide the students with autonomy supportive behaviours,
- show respect for students' needs and feelings,
- teach students to take responsibility for their own behaviour,
- guide students to use positive forms of self-talk,
- help them to give self-directions in line with own goals,
- encourage them to feel proud of their own success and behaviour,
- teach them to change their subjective cognitive sets to adjust to changing environmental stimuli,
- encourage them to plan their actions, and
- help them to be aware and accept their own emotions, control negative emotion-related behaviours, and learn strategies for adapting their emotions to goals.

Acknowledgements

First of all, we would like to offer our respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) who allowed us to do this study. Then, we would like to express our honourable thanks and the deepest appreciation to Dr. Khin Hnin Nwe (Associate Professor, Head of Department, Department of Educational Psychology, Sagaing University of Education) for her invaluable suggestions, encouragement and precious comments for our study. We are most grateful to teachers in Department of Educational Psychology.

References

- Brackett, M. A., & Salovey, P. (2004). Measuring emotional intelligences as a mental ability with the Mayer-Salovey-Caruso Emotional intelligence Test. In G. Geher (Ed), *Measurement of Emotional Intelligence*. (pp. 179-194). Hauppauge, NY: Nova Science Publishers.
- Brenning, K, Soenens, B, Petegem, S. V., & Vansteenkiste, M. (2015). Perceived Maternal Autonomy Support and Early Adolescent Emotion Regulation: A Longitudinal study. In John Wiley & Sons Ltd, *Social development*, Vol 24, No. 3, 561-578. 2015.
- Brinthaup, T. M., Dove, C. T. (2012). Differences in self-talk frequency as a function of age, only-child, and imaginary childhood companion status. *Journal of Research in Personality*, 46 (2012), 326-333. www.elsevier.com/locate/jrp
- Brinthaup, T. M., Hein, M. B., & Kramer, T. E. (2005). The Self-Talk Scale: Development, higher-order factor analysis, and validation. Manuscript submitted for publication.
- Bureau, J. S., & Mageau, G. A. (2014). Parental autonomy support and honesty: The mediating role of identification with the honesty value and perceived costs and benefits of honesty. *Journal of Adolescence*, 37, 225-236. <http://dx.doi.org/10.1016/j.adolescence.2013.12.007>.
- Burnett, P. C. (1996). Children's self-talk and significant others' positive and negative statements. *Educational Psychology*, 16, 57-67.

- Burnett, P. C. (1999). Children's self-talk and academic self-concepts: The impact of teacher's statements. *Educational Psychology in Practice*, 15, 195–200. doi:10.1080/0266736990150308.
- Calkins, S. D. & Johnson, M. C. (1998). Toddler reulaon of distress to frustran events: Temperamental and maternal correlates. *Innt Behavior and Development*, 21, 379-395.
- Calkins & Fox. (2003). Motivation and emotion, March 2003, Vol. 27, Issue 1, pp. 7-26.
- Cristiano, I, Sonia, I, Francesca, L, Alida, L. C., & Lo Cricchio Maria Grazia, L. C. (2014). Autonomy and Relatedness in Adolescence and Emerging Adulthood: Relationships with Parental Support and Psychological Distress <http://link.springer.com/article/10.1007/s10804-014-91968>
<https://www.researchgate.net/publication/267509279>
- Demarary, M., & Jenkins, L.N. (2011). Relations among academic enablers and academic achievement in children with and without high levels of parent-rated symptoms of inattention, impulsivity, and hyperactivity. *Psychology in the Schools*, 48(6), 573-586.
- Denham, S. A, Zoller, D., & Couchoud, E. A. (1994). Socialization of preschoolers' emotional understanding, *Developmental Psychology*, 30, 928-936.
- Derehi, E. (2016). Prediction of Emotional Understanding and Emotion Regulation Skills of 4-5 Age Group Children with Parental-Child Relations. *Journal of Education and Practice*, Vol. 7, No. 21, 2016. www.iiste.org
- Endendijk, J.J., Groeneveld, M. G., Bakemans-Kranenburg, M. J., Mesman, J. (2016). Gender-Differentiated Parenting Revised: Meta-Analysis Reveals Very Few Differences in Parental Control of Boys and Girls. *PLoS ONE* 11(7): e0159193. Doi:10.1371/journal.pone.0159193. [https://dataverse.harvard.edu/dataset.xhtml?](https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7927/H4T9-9Q9M)
- Gratz, K. L., & Roemer, L. (2003). Multidimensional Assessment of Emotion Regulation and Dysregulation: Development, Factor Structure, and Initial Validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behaviora Assessment*, Vol. 26, No. 1, March 2004.
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and validation of the Difficulties with Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment*, 26, 41-54.
- Grolnick, W. S. (1989). Parent styles associated with children's self-regulaon and competence in school. *Journal of Educational Psychology*, 81, 143-154.<http://dx.doi.org/10.1037/0022-0663.81.2.143>
- Grolnick, W. S. & Ryan, R. M. (1989). Parent Styles Associated With Children's Self-Regulation and Competence in School. *Journal of Educational Psychology*, Vol. 81, No. 2, 143-154. Copyright 1989 by the American Psychological Association, Inc. 0022-0663/89/\$00.75
- Gross, J. J., & Munoz, R. F. (1995). Emotion regulation and mental health. *Clinical Psychology: Science and Practice*, 2, 151-164.
- Hesampour, F. (2016). The Relationship between Mindfulness and Cognitive Emotion Regulation and Depression among University Students. *International Journal of Academic Research in Psychology* 2016, Vol. 3, No.1 ISSN 2312-1882
- Hillaker, B. D., (2011): Does Autonomy Support Have Differential Effects On Children's Social Competence As A Function Of Early Dysregulatory Risk—And Do These Relationships Differ Across Racial Groups? Submitted to Michigan State University in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY: *Human Development and Family Studies*, (pp. 1-3).
- Iliades, C. (2011). College Illnesses Aren't Always Physical. Medically Reviewed by Pat F. Bass III, MD, MPH. <https://www.everydayhealth.com> ›
- Joussemet, M., Landry, R., & Koestner, R. (2008). A self-determination theory perspectives on parenting. *Canadian Psychology/Psychologie Canadienne*, 49, 194-200. <http://dx.doi.org/10.1037/a0012754>.
- Kopp, C. B. (1989). Commentary: The codevelopments of aenon and emoon reulaon, inncy, 3, 461-474.
- Labouvie-Vief, G., DeVoe, M., & Bulka, D. (1989). Speaking about feelings: Conceptions of emotion across the life span. *Psychology and Aging*, 4, 425–437.
- Lidstone, J. S. M., Meins, E., & Fernyhough, C. (2010). The roles of private speech and inner speech in planning during middle childhood: Evidence from a dual task paradigm. *Journal of Experimental Child Psychology*, 107(4), 438-451. <http://dx.doi.org/10.1016/j.jecp.2010.06.002>

- Ma Htay Htay Sint. (2019). Self-compassion and Emotional Regulation of Pre-service Teachers. Sagaing University of Education.
- Mageau, G. A., Ranger, F., Joussemet, M., Koestner, R., Moreau, E., & Forest, J. (2015). Validation of the Perceived Parental Autonomy Support Scale (P-PASS). *Canadian Journal of Behavioural Science*, 47(3), 251-262. <http://dx.doi.org/10.1037/a0039325>.
- Martin, R. C., & Dahlen, E. R. (1995). Cognitive emotion regulation in the prediction of depression, anxiety, stress and anger. *Personality and Individual Differences*, 39, 1249-1260.
- Mary-ellen, M. (2008). "A Correlational Study on Parental Attachment and Spiritual Development of College Students". *Public Access Theses and Dissertations from the College of Education and Human Sciences*. 35. <https://digitalcommons.unl.edu/cehdsdiss/35>
- Miyake, A., Emerson, M. J., Padilla, F., & Ahn, J. (2004). Inner speech as a retrieval aid for task goals: The effects of cue type and articulatory suppression in the random task cuing paradigm. *Acta Psychologica*, 115(2-3), 123-142.
- Oliver, F. J., Markland, D., Hardy, J. & Petherick, C. M. (2008). The effects of autonomy-supportive versus controlling environments on self-talk. *Motiv Emot* (2008) 32:200-212. Doi: 10.1007/s11031-008-9097-x
- Orgeta, V. (2009) Specificity of age differences in emotion regulation, *Aging & Mental Health*, 13:6, 818-826, DOI: 10.1080/13607860902989661 To link to this article: <http://dx.doi.org/10.1080/13607860902989661>
- Pedersen, D. E. (2017). Parental Autonomy Support and College Student Academic Outcomes. *Journal of Child and Family Studies* 26, 2589-2601. [link-springer-com-443.webvpn.fjmu.edu.cn](http://link.springer.com/443.webvpn.fjmu.edu.cn)...
- Perrone-Bertolotti, M., Rapin, L., Lachaux, J. P., Baci, M., & Loevenbruck, H. (2014). What is that little voice inside my head? Inner speech phenomenology, its role in cognitive performance, and its relation to self-monitoring. *Behavioural Brain Research*, 261, 220-239.
- Rongione, L. & Brinthaup, T. (2014). The relationship between Self-Talk, Learned Resourcefulness, and Academic Stress. Email: ler3e@mtmail.mtsu.edu; tom.brinthaup@mtsu.edu
- Saarni, C. (1984). "An Observational Study of Children's Attempts to Monitor Their Expressive Behavior", *Child Development* 55, 1504-1513.
- Salas, C. E., Castro, O., Radovi, D., Gross, J. J., & Turnbull, Y. O. (2018). The Role of Inner Speech in Emotion Dysregulation and Emotion Regulation Strategy Use. Article in *Revista latinoamericana de psicología*. DOI:10.14349/rlp.2018.v 50.n2.1: <https://www.researchgate.net/publication/327975660>
- Shelleby, E. C. (2010). Emotion Regulation in at-risk youth: The Influence of the Family Check-up.
- Soenens, B., Vansteenkiste, M., Lens, W., Luyckx, K., Goossens, L., Beyers, W., & Ryan, R. M. (2007). Conceptualizing Parental Autonomy Support: Adolescent Perceptions of Promotion of Independence Versus Promotion of Volitional Functioning. *Developmental Psychology* 43(3), 633-646. DOI: 10.1037/0012-1649.43.3.633
- Thompson, R. A. (2011). Emotion and emotion regulation: Two sides of the developing coin. *Emotion Review*, 3(1), 53-61. doi: 10.1177/1754073910380969
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89-125.
- Vygotsky, L. (1962). *Thought and Language*. Cambridge, MA: M.I.T. Press.
- Yaratan, H. & Yucesoylu, R. (2010). Self-esteem, self-concept, self-talk and significant others' statements in fifth grade students: Differences according to gender and school type. *Procedia Social and Behavioral Sciences* 2; 3506-3518. Doi:10.1016/j.sbspro.2010.03.543. www.sciencedirect.com
- Zarei, M. & Momeni, F. (2018). The Mediating Role of Cognitive Flexibility, Shame and Emotion Dysregulation Between Neuroticism and Depression. *Iranian Rehabilitation Journal*; 16(1):61-68. <https://doi.org/10.29252/NRIP.IRJ.16.1.61>
- Zimmermann, P. (1999). Structure and functions of internal working models of attachment and their role for emotion regulation. *Attachment & Human Development*, 1, 291-306.

A STUDY ON EMOTIONAL INTELLIGENCE AND AGGRESSION OF ADOLESCENTS

Ei Thandar Tun¹, Khin Khin Thant²

Abstract

The main purpose of this study is to study emotional intelligence and aggression of adolescents from selected Basic Education High Schools (2019-2020 Academic Year) in Yinmarbin Township. Moreover, the present study was to find out the differences in emotional intelligence and aggression of students among demographic characteristics (gender, grade and school types). The quantitative research design and descriptive survey method were used in this study. A total 1054 students from selected Basic Education High Schools in Yinmarbin Township were selected as participants by using simple random sampling technique. As research instruments, Emotional Intelligence Questionnaires (Bar-On's Emotional Quotient Inventory: Youth Version (Bar-On EQ-i: YU) (Bar-On & Parker, 2000) and Aggression Questionnaires by (Nor Hasliza bt Faris, Noor Azniza bt Ishak, Fatimah Aailly bt Ahmad Ramli, 2016) were used to measure adolescents' emotional intelligence and aggression. After that, the data were analyzed by using descriptive statistics and *t* Test. The results revealed that it was found no significant difference in emotional intelligence by gender but there was significant difference in aggression by gender in which male students were significantly higher in aggression than female students. Furthermore, there were significant differences in both emotional intelligence and aggression between Grade 10 and Grade 11 students. Grade 11 students were higher in emotional intelligence than Grade 10 students and Grade 10 students were higher in aggression than Grade 11 students. And then, significant differences were found in emotional intelligence and aggression by school types. Private school students were higher in emotional intelligence than government school students and government school students were higher in aggression than private school students. Moreover, Pearson Product Moment Correlation revealed that emotional intelligence of adolescents was negatively correlated with their aggression ($r = -.320$, $p < 0.01$). Therefore, if the students had higher in emotional intelligence, their aggression would be less.

Keywords: Emotional Intelligence, Aggression, Adolescents

Introduction

Nowadays, students are very important for their country so they should be emotional healthy persons. Emotional intelligence also known as Emotional Quotient (EQ) is one of the top topics among the mental health professionals for adolescents, after all it's the young people of today who will make up the workforce of tomorrow. An individual's level of emotional intelligence or EQ is more important than their IQ, because EQ is not only a more effective interpreter of the quality of probable relationships but also an efficient interpreter for success and overall happiness.

Adolescents' aggression is a problem in society and educational systems. News agencies frequently broadcast and print stories of violence, bullying and violent crime amongst our youth, in educational research circles, staff room chat sessions, parent council meetings and school improvement discussions, bullying and violence prevention programs are often discussed and debated.

It is a popular opinion that aggressive behaviors are increasing in our school systems. Aggressive behavior is an important role in development of human and the relative society. It develops an equilibrated personality of worth. Including other aspects of personality, it also focuses on the aggressive behavior. Aggressive behavior refers to such verbal, nonverbal and physical behavior that injures another person indirectly or directly and results in extraneous gains for the aggression. The school environment is also an important aspect of education or especially formal education. Aggressive behavior is considered as an antisocial behavior which

¹ Senior Assistant Teacher, B.E.H.S (B), Tamarbin Gwa, Yinmarbin Township, Sagaing Region

² Associate Professor, Department of Educational Psychology, Sagaing University of Education

occurs in many situations whenever someone hurt to others physically as well as mentally. It shapes dangerous reaction towards others for self-defenses.

Exposure to aggression and bullying by peers in school settings has been linked with increased dropout rates, lower self-esteem, fewer friends, declining grades and increases in illness (Ballard, Argus, & Remley, 1999).

There are many factors which cause aggression; they are individual characteristics, home environment, relationships with peers, school failure, and exposure to media violence, community and societal factors.

There is a growing trend to group the character based skills of social learning and affective education. A variety of definitions, theories and measures have recently been developed in regard to the concept of emotional intelligence. Some researchers have made strong positive claims regarding its predictive value. Goleman (1995) stated that emotional intelligence is at least as important as intelligence quotient, when determining one's future or life success. A great deal of popular writing has evolved around the subject of emotional intelligence.

If a student's emotional intelligence can be developed and improved using developmental programs and if emotional intelligence can be scientifically linked with aggression, then certainly educational organizations would be well advised to support programs which develop emotional intelligence and address socially appropriate choices for adolescents. If there is a link between one's emotional intelligence and one's frequency of socially inappropriate behaviors, certainly there is a need to develop the emotional intelligence of adolescents. Emotional intelligence among adolescents affects adolescents' level of interpersonal relationship. Low level of emotional intelligence among adolescents leads to adolescent substance and illegal drug abuse, poor interpersonal relationship, high level of aggression, and physical fights (Brackett, Mayer and Warner, 2004).

In order to justify time and money being spent in the school system, a reasonable statistical and scientific body of knowledge needs to be established regarding the importance of emotional intelligence which are important issues in today's school systems. Research in this area is important so that society can work towards the reduction of aggression in school systems. Investigations are needed to strengthen or to refute the possible link between emotional intelligence and aggression. Better understanding will lead to more effective programs which develop children's abilities to work cooperatively, accept responsibility and make socially appropriate choices.

Aim and Objectives

The main aim of the study is to investigate emotional intelligence and aggression of adolescents, from selected Basic Education High Schools (2019-2020 Academic Year).

The specific objectives of the study are as follow:

1. To study the differences in emotional intelligence of students by gender, grade and school types;
2. To find out the differences in aggression of students by gender, grade and school types;
3. To examine the relationship between emotional intelligence and aggression of students from selected Basic Education High Schools;

Definitions of Key Terms

Emotional Intelligence : Emotional intelligence is your ability to recognize and understand emotions in yourself and others, and your ability to use this awareness to manage your behavior and relationships (Travis Bradberry and Jean Greaves, 2009).

Aggressio : Aggression is behavior which causes intentional harm to another person (Anderson, 2002).

Adolescent : Adolescent is any person between ages 10 and 19 (WHO, 2018).

Review of Related Literature

The concept of emotional intelligence proposes that intelligence may understand emotion, and that emotion may facilitate intelligence (Mayer & Ciarrochi, 2006). According to Akinboye (2002) “no human action, whether good or bad, is emotion free”. Emotional intelligence is one of the important variables and has greater influence on human character. It has a pivotal role in the success of various domain of life. The basic emotions are happiness, interest, surprise, fear, anger, sorrow and disgust. According to Leventhal (1982), each of these emotions is operating through a control mechanism which serves as a monitor for one of the main aspects of human life.

Emotional intelligence among adolescents affects adolescents’ level of interpersonal relationship. Low level of emotional intelligence among adolescents leads to adolescent substance and illegal drug abuse, poor interpersonal relationship, high level of aggression, and physical fights (Brackett, Mayer & Warner, 2004). Emotional intelligence plays a pivotal role in all realm of life. Emotional intelligence describes the ability, capacity, skill, or self-perceived ability to identify, assess, and manage the emotions of one’s self, of others, and of groups. People who possess a high degree of emotional intelligence know themselves very well and are also able to sense the emotions of others.

The development of individuals’ emotional intelligence can become more productive and successful at what they do, and help others become more productive and successful in their lives. The individuals should have the following ways to develop their emotional intelligence. In Bar-On’s model, Bar-On outlines five components of emotional intelligence: intrapersonal, interpersonal, adaptability, stress management and general mood. These components have sub-components.

Aggression is behavior that is intended to produce harm or damage to someone or to something functioning as a substitute for that person target. Intention and harm doing are key attributes in defining aggressive behavior, which may be physical, verbal or symbolic in form. Human aggression is an acquired behavior. The learning of aggression occurs primarily in family relationships, peers and environmental exposure. Human aggression is defined as any behavior directed toward another individual that is carried out with the immediate intent to cause harm.

There are many factors which affect aggression or aggressive behaviors. Individual characteristics, home environment, relationships with peers, school failure, exposure to media violence, community and societal factors can increase the likelihood of aggression among adolescents.

Yet there is limited research investigating on a study on emotional intelligence and aggression of adolescents, It must to explore emotional intelligence and aggression of adolescents.

Methods

Research Design

The design adopted in this study was quantitative research. Descriptive survey method was used in this study.

Sampling

The participants of this study were Grade 10 and Grade 11 students attending in (2019-2020) Academic Year from selected Basic Education High Schools in Yinmarbin Township, Sagaing Region. Total seven schools were investigated; three high schools, one high school (branch) and three private schools respectively. In (2019-2020) Academic Year, total of 3500 students were enrolled in Grade 10 and Grade 11 in Yinmarbin Township. The number of participants was 1054 students (527 males, 527 females). The sample was chosen by using simple random sampling technique. Table 1 shows the number of chosen participants in details.

Table 1 Distributions of Students from Each Selected School in Terms of Gender

No.	Schools	Type of Schools	Number of Students		Total
			Male	Female	
1	School 1	High School	60	60	120
2	School 2	High School (Branch)	60	60	120
3	School 3	High School	60	60	120
4	School 4	High School	84	84	168
5	School 5	Private School	140	167	307
6	School 6	Private School	103	76	179
7	School 7	Private School	20	20	40
Total			527	527	1054

Instrumentation

In this study, Emotional Intelligence Scale (30) items and Aggression Questionnaire (29) items were used. The participants' demographic information such as gender, grade and school types was also collected for this study. The key instrument used to measure emotional intelligence was Emotional Intelligence Questionnaires by Bar-On's Emotional Quotient Inventory: Youth Version (Bar-On EQ-i: YU) (Bar-On & Parker, 2000). The scale for emotional intelligence was composed of five subscales: (a) intrapersonal (b) interpersonal (c) stress management (d) adaptability and (e) general mood. There were 6 items for each subscale. The internal consistency (Cronbach's Alpha) for Emotional Intelligence Scale was 0.7.

The key instrument used to measure aggression was Aggression Questionnaires developed by Nor Hasliza bt Faris, Noor Azniza bt Ishak, Fatimah Aailly bt Ahmad Ramli, 2016. The instrument used to measure aggression was composed of four subscales: (a) physical (b) verbal (c) anger and (d) hostility. The number of items contained in each subscale was different: 9 items in physical, 5 items in verbal, 7 items in anger and 8 items in hostility. The internal consistency (Cronbach's Alpha) for Aggression Scale was 0.771.

Data Collection Procedure

In this study, the related literature was firstly gathered from several available books, journals, and internet sources. And then, appropriate research instruments were prepared to use in

this study. The instruments were assessed by the experts in the field of educational psychology. After that, pilot study was made to validate the research instruments and to test their reliability. The results of the pilot study were reliable. Thus, the data collection procedure was begun to assess emotional intelligence and aggression of adolescents from Grade 10 and Grade 11 students in Yinmarbin Township. After getting the required data, they were analyzed step by step. Finally, the interpretation of the findings was made and conclusion was drawn. For collecting accurate data for this study, the researcher requested permission from the Head of Department of Educational Psychology. Second, permission to collect data was acceded from respective principals in Yinmarbin Township. As the establishment of the rapport with the participants, it took a few seconds to explain the purpose and importance of their participation and assurance of confidentiality of their responses which would be used only for this research purpose. Then, the questionnaires were distributed and the participants were asked to complete all items in the questionnaires. On average, the participants spent about forty-five minutes to complete all items. All of the participants' responses were gathered by survey method in September, 2019.

Data Analysis

The data collected from the participants were analyzed by using descriptive and inferential statistics. The Microsoft Office Excel (2010) and Statistical Package for Social Sciences (SPSS, version 20) were used to analyze the data.

In order to know the mean and standard deviation scores for students' emotional intelligence and aggression, descriptive statistics was used. And then, Independent Samples *t* Test was used to examine whether or not there were significant differences in students' emotional intelligence and aggression by gender, grade and school types. Then, Pearson Product-Moment correlation was used to determine the degree of relationship between emotional intelligence and aggression.

Findings

In this study, high school students' emotional intelligence and aggression were investigated among the selected schools from Yinmarbin Township. Differences between gender, grade and school types were further investigated. Moreover, relationship between emotional intelligence and aggression were also examined.

Descriptive Statistics for Adolescents' Emotional Intelligence

In order to find out adolescents' emotional intelligence, five subscales including intrapersonal, interpersonal, stress management, adaptability and general mood were used. In terms of descriptive statistics, minimum, maximum, mean and standard deviation of students' emotional intelligence were calculated to analyze data. The results of analysis were described in Table 2 and Table 3.

Table 2 Descriptive Statistics for Adolescents' Emotional Intelligence

Variable	No. of Items	Minimum	Maximum	Mean	Standard Deviation
Emotional Intelligence	30	57	115	84.98	9.60

As shown in Table.2, the mean and standard deviation of the adolescents' emotional intelligence were 84.98 and 9.60 respectively. Since the sample mean (84.98) is greater than theoretical mean (75) in overall emotional intelligence, it can be assumed that the students of emotional intelligence are satisfactorily good.

Table 3 Descriptive Statistics for Adolescents' Emotional Intelligence by Subscales

Subscales	No. of Items	Minimum	Maximum	Mean	Standard Deviation
Intrapersonal	6	9	24	17.66	2.53
Interpersonal	6	9	24	17.50	2.93
Stress Management	6	8	24	15.78	2.86
Adaptability	6	10	24	17.33	2.57
General Mood	6	9	23	16.71	2.58

According to the result from Table 3, among the five subscales, mean score of intrapersonal (17.66) is highest and that of stress management (15.78) is lowest. Hence, it can be interpreted that the students have the ability to recognize their own emotions and the students cannot manage their stress well if they encounter problems and stress.

Table 4 The Result of Independent Samples *t* Test for Emotional Intelligence by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Overall Emotional Intelligence	Male	527	84.79	10.03	-.626	1052	.532	-.370
	Female	527	85.17	9.16				

Table 4 showed that there was no significant difference between male and female adolescents in emotional intelligence but females' mean score was slightly higher than male adolescents' mean score.

Table 5 The Result of Independent Samples *t* Test on Subscales of Emotional Intelligence by Gender

Subscales	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Intrapersonal	Male	527	17.59	2.50	-.888	1052	.375	-.138
	Female	527	17.73	2.56				
Interpersonal	Male	527	17.52	2.99	.173	1052	.892	.031
	Female	527	17.49	2.87				
Stress Management	Male	527	15.47	2.98	-3.434***	1052	.001	-.601
	Female	527	16.08	2.69				
Adaptability	Male	527	17.36	2.69	.372	1052	.710	.059
	Female	527	17.30	2.42				
General Mood	Male	527	16.85	2.71	1.730	1052	.084	.275
	Female	527	16.58	2.44				

Note: ***The mean difference is significant at the 0.001 level.

Table 5 indicated that female students were significantly higher than male students in stress management subscale of emotional intelligence at $p = 0.001$ level. Hence, it can be assumed that female students may have more ability to manage their stress than male students.

Table 6 The Result of Independent Samples *t* Test for Emotional Intelligence by Grade

Variable	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Overall Emotional Intelligence	Grade 10	528	83.15	10.47	-6.313***	1052	.000	-3.67
	Grade 11	526	86.82	8.26				

Note: ***The mean difference is significant at the 0.001 level.

Table 6 showed that there was a significant difference between Grade 10 and Grade 11 students in emotional intelligence ($p=0.000$). The average mean score of Grade 10 students was 83.15 and that of Grade 11 students was 86.82. According to this result, Grade 11 students are higher in emotional intelligence than Grade 10 students.

Table 7 The Result of Independent Samples *t* Test on Subscales of Emotional Intelligence by Grade

Subscales	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Intrapersonal	Grade 10	528	17.33	2.63	-4.35***	1052	.000	-.672
	Grade 11	526	17.99	2.37				
Interpersonal	Grade 10	528	16.98	3.15	-5.95***	1052	.000	-1.06
	Grade 11	526	18.03	2.60				
Stress Management	Grade 10	528	15.43	2.99	-4.001***	1052	.000	-.699
	Grade 11	526	16.13	2.67				
Adaptability	Grade 10	528	16.97	2.64	-4.627***	1052	.000	-.724
	Grade 11	526	17.69	2.43				
General Mood	Grade 10	528	16.46	2.68	-3.190***	1052	.001	-.506
	Grade 11	526	16.97	2.46				

Note: ***The mean difference is significant at 0.001 level

Table 7 indicated that there were significant differences in emotional intelligence subscales by grade. Specifically, the significant differences were found between Grade 10 and Grade 11 students in all five subscales (intrapersonal, interpersonal, stress management, adaptability, general mood) of emotional intelligence at $p = 0.001$ level. Therefore, it can be concluded that Grade 11 students are higher in emotional intelligent than Grade 10 students.

Table 8 The Result of Independent Samples *t* Test for Emotional Intelligence by School Types

Variable	School Types	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Overall Emotional Intelligence	Government School	528	80.56	8.94	-16.894***	1052	.000	-8.87
	Private School	526	89.43	8.07				

Note: ***The mean difference is significant at 0.001 level.

Table 8 showed that there was significant difference between government and private school students in emotional intelligence. According to this result, private school students are higher in emotional intelligence than government school students. And then this result was consistent with the study Rathi's (2015) research.

Table 9 The Result of Independent Samples *t* Test on Subscales of Emotional Intelligence by School Types

Subscales	School Types	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Intrapersonal	Government School	528	16.84	2.58	-11.084***	1052	.000	-1.64
	Private School	526	18.48	2.20				
Interpersonal	Government School	528	16.42	2.95	-12.924***	1052	.000	-2.17
	Private School	526	18.59	2.48				
Stress Management	Government School	528	14.50	2.75	-16.25***	1052	.000	-2.56
	Private School	526	17.06	2.35				
Adaptability	Government School	528	16.70	2.45	-8.32***	1052	.000	-1.27
	Private School	526	17.97	2.52				
General Mood	Government School	528	16.10	2.55	-7.93***	1052	.000	-1.23
	Private School	526	17.33	2.47				

Note: *** The mean difference is significant at 0.001 level

Table 9 indicated that there were significant differences in emotional intelligence subscales by school types. Specifically, the significant differences were found between government school students and private school students in all five subscales (intrapersonal, interpersonal, stress management, adaptability, and general mood) of emotional intelligence at $\alpha = 0.001$ level. Therefore, it can be interpreted that private school students are higher in all five subscales of emotional intelligence than government school students.

Descriptive Statistics of Adolescents' Aggression

Aggression of adolescents was identified by using four subscales which includes physical aggression, verbal aggression, anger and hostility. In terms of descriptive statistics, minimum, maximum, mean, standard deviation and mean percentage of aggression were calculated to analyze data. The results were described in Table.10 and Table 11.

Table 10 Descriptive Statistics for Aggression of Adolescents

Variable	No. of Items	Minimum	Maximum	Mean	SD
Aggression	29	43	162	74.47	13.87

Table 10 indicated that the mean score and standard deviation of total aggression were 74.47 and 13.87 respectively. Since the total mean score (74.47) was lower than the theoretical mean (87) in total aggression, it can be said that frequency of adolescents' aggression is very rare.

Table 11 Descriptive Statistics for Adolescents' Aggression by Subscales

Subscales	No. of Items	Minimum	Maximum	Mean	Mean %	SD
Physical Aggression	9	9	80	20.04	44.53%	6.20
Verbal Aggression	5	5	120	14.72	58.88%	4.57
Anger	7	7	32	17.93	51.23%	4.03
Hostility	8	8	38	21.77	54.43%	4.64

According to above table, the mean percent of verbal aggression is highest (Mean% = 58.88%). Therefore, it can be interpreted that adolescents showed their aggression by showing direct psychological aggression such as name-calling, shouting, and baiting. And adolescents had the lowest mean percent in physical aggression among the four subscales of aggression because the mean percent of it was 44.53%. Thus, it showed that commitment of adolescents' physical aggression was very rare. It can be interpreted that adolescents don't use a form of direct physical harm towards others.

Table 12 The Result of Independent Samples *t* Test for Adolescents' Aggression by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Total Aggression	Male	527	77.14	13.88	6.36***	1052	.000	5.341
	Female	527	71.80	13.35				

Note: *** The mean difference is significant at the 0.001 level.

According to Table 12, the result of Independent Samples *t* Test indicated that there was significant difference between male and female adolescents in total aggression. Thus, it can be concluded that male adolescents possess more aggression than female adolescents. This result also supports the finding of Banga's (2015) research in which males are higher in aggression than female adolescents.

Table 13 The Result of Independent Samples *t* Test on Subscales of Adolescents' Aggression by Gender

Subscales	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Physical Aggression	Male	527	21.90	6.57	10.207***	1052	.000	3.725
	Female	527	18.18	5.18				
Verbal Aggression	Male	527	14.97	3.13	1.756	1052	.079	.499
	Female	527	14.47	5.66				
Anger	Male	527	18.32	4.16	3.183**	1052	.002	.787
	Female	527	17.53	3.86				
Hostility	Male	527	21.91	4.69	.949	1052	.343	.271
	Female	527	21.64	4.59				

Note: ** The mean difference is significant at the 0.01 level.

*** The mean difference is significant at the 0.001 level.

In table 13, male adolescents were significantly higher than female adolescents in physical aggression and anger subscales of aggression at 0.001 level and 0.01 level. Hence, it can be said that male adolescents may have more problems in controlling their anger and physical aggression than female adolescents.

Table 14 The Result of Independent Samples *t* Test for Adolescents' Aggression by Grade

Variable	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Total Aggression	Grade 10	528	75.92	13.85	3.412***	1052	.001	2.905
	Grade 11	526	73.01	13.75				

Note: ** The mean difference is significant at the 0.001 level.

According to Table 14, mean score of Grade 10 was 75.92 and that of Grade 11 was 73.01. And the result of Independent Samples *t* Test revealed that there was significant difference in aggression among adolescents between Grade 10 and Grade 11 students.

Table 15 The Result of Independent Samples *t* Test on Subscales of Aggression by Grade

Variables	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Physical Aggression	Grade 10	528	20.80	6.64	4.048***	1052	.000	1.536
	Grade 11	526	19.27	5.64				
Verbal Aggression	Grade 10	528	14.78	3.20	.423	1052	.672	.119
	Grade 11	526	14.66	5.63				
Anger	Grade 10	528	18.42	4.11	3.976***	1052	.000	.981
	Grade 11	526	17.44	3.90				
Hostility	Grade 10	528	21.88	4.62	.755	1052	.450	.216
	Grade 11	526	21.67	4.66				

Note: *** The mean difference is significant at the 0.001 level.

According to Table 15, there were significant differences in physical aggression and anger subscales of aggression at 0.001 level. Hence it can be interpreted that Grade 10 students have more difficulty in controlling their physical aggression and anger than Grade 11 students while they encounter unpleasant situations.

Table 16 The Result of Independent Samples *t* Test for Adolescents' Aggression by School Types

Variable	School Types	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Total Aggression	Government School	528	76.59	13.45	5.010***	1052	.000	4.239
	Private School	526	72.35	13.97				

Note: *** The mean difference is significant at the 0.001 level.

According to Table 16, mean score of government school was 76.59 and that of private school was 72.35. And the result of Independent Samples *t* Test revealed that there was significant difference in aggression among adolescents between government and private school students.

Table 17 The Result of Independent Samples *t* Test on Subscales of Adolescents' Aggression by School Types

Variables	School Types	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Physical Aggression	Government School	528	21.18	6.54	6.121***	1052	.000	2.299
	Private School	526	18.88	5.62				
Verbal Aggression	Government School	528	14.72	3.12	.029	1052	.977	.008
	Private School	526	14.71	5.67				
Anger	Government School	528	18.57	4.09	5.251***	1052	.000	1.288
	Private School	526	17.28	3.88				
Hostility	Government School	528	22.11	4.45	2.379*	1052	.018	.678
	Private School	526	21.43	4.80				

Note: * The mean difference is significant at 0.05 level.

*** The mean difference is significant at the 0.001 level.

Table 17 indicated that there were significant differences in physical aggression, anger and hostility between government and private school students at 0.001 level and 0.05 level. Students from government schools had higher mean scores on the factor of physical aggression, anger and hostility than that of students from private schools.

Table 18 Correlation between Emotional Intelligence and Aggression of Adolescents

Variables		Aggression
Emotional Intelligence	Pearson Correlation	-.320**
	Sig. (2-tailed)	.000
	N	1054

Note: ** Correlation is significant at 0.01 level.

According to the result, there was a moderate correlation between emotional intelligence and aggression ($r = -.320$, $p < 0.01$). Therefore, it was believed that emotionally intelligent adolescents were negatively correlated with aggression of adolescents. This means that if the adolescents had higher in emotional intelligence, their aggression would be less.

Conclusions

It was observed that there was no significant difference between males and females with regard to their overall emotional intelligence. But the genders did tend to differ in stress management with female students' scoring higher than male students. And then female students had higher mean scores than male students in overall emotional intelligence. This result was consistent with Shanmugham's (2019) research and also found that there was no significant difference in the emotional intelligence between the male and female students. Therefore, it can be interpreted that female students do not differ with male students in emotional intelligence. This is because both genders are statistically similar in believing that emotional intelligence is a necessary factor in the success of a person's social, personal and professional life (Wagner, 2006, & Rosener, 2011).

For aggression, there was significant difference between male and female students in total aggression. The result of this study was consistent with the finding of Banga's (2015) research in which males have higher level of aggression than female students. And there were also significant differences in physical aggression and anger for the male and female students. The reason for this result may be due to girl's awareness that they are weaker sex and the need to avoid physical aggression for their safety (Bernstein, Penner, Clark-Stewart & Roy, 2006). It may also be because male students may have more problems in controlling their physical aggression and anger than female students while they encounter unpleasant situations and feelings. Moreover, males are not able to regulate emotions towards an event that occurs in the community, and males lack empathy for others in the community (Zimmer-Gembeck, MJ, Geiger, & Crick, 2005). There was significant difference among adolescents according to grades. Grade 11 students had higher mean scores than Grade 10 students in overall emotional intelligence ($p < 0.001$). Therefore, it can be interpreted that Grade 11 students have higher emotional intelligence than Grade 10 students. And there was significant difference according to grades in *t* Test result. Grade 10 students had higher mean scores than Grade 11 students in total aggression ($p < 0.01$). Therefore, it can be interpreted that Grade 10 students have higher aggression than Grade 11 students. there was significant difference between government and private school students in overall emotional intelligence ($p < 0.001$). This result was consistent with the study of Rathi's (2015) research and also found that there was significant difference in emotional intelligence by school types (Private Schools > Government Schools). Therefore, it can be interpreted that private school students have higher emotional intelligence than government school students. there was significant difference between government and private school students in aggression ($p < 0.001$). And government school students have higher (mean = 76.59, SD = 13.45) than that of private school students (mean = 72.35, SD = 13.97) in aggression. This result was consistent with Mundia's (2006) result and also found that students in government schools were more aggressive than private school students. There was a negative correlation between emotional intelligence and aggression of adolescents. It was consistent with the study of (Sancho, Salguero, Berrocal; 2014). Since, there is negative relationship between emotional intelligence and aggression of adolescents, it can be interpreted that the more frequently they have emotional intelligence, the more they decrease their aggression. The possible solutions to overcome aggression of adolescents might be firstly considered the relationship between emotional intelligence and aggression. Emotional intelligence was known as one of the constructs that could bring success, well beings and happiness to one's life. Low level of emotional intelligence among adolescents leads to adolescent substance and illegal drug abuse, poor interpersonal relationship, high level of aggression, and physical fights (Brackett, Mayer & Warner, 2004).

It can be witnessed that adolescents who understand their own feelings, possess social awareness and interpersonal relationship, tolerate their stress and control impulses, adapt to personal and interpersonal change, and possess positive attitudes and happiness may reduce their aggression while encountering unpleasant situations. Therefore, emotional intelligence is an important factor in controlling adolescents' aggression. Thus, parents and teachers need to improve adolescents' emotional intelligence through training, programming and therapy (Bar-On, 2002). Now, it is suggested for reducing adolescents' aggression, the instructor should focus to improve emotional intelligence of adolescents.

Acknowledgements

First of all, we would like to offer our respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) who allowed us to do this study. Then, we would like to express our honorable thanks and the deepest appreciation to Dr. Khin Hnin Nwe (Professor, Head of Department, Department of Educational Psychology, Sagaing University of Education) for her invaluable suggestions, encouragement and precious comments for our study. And I am deeply indebted to

Dr.Moe Moe Naing (Professor, Department of Educational Psychology, Sagaing University of Education) for her precious suggestions in preparing this study. Besides, I wish to express my warmest thanks to the concerned principals, teachers and Grade 10 and Grade 11 students from Yinmarbin Township, Sagaing Region, for their active cooperation in my data collection.

References

- Akinboye, J. O. (2002). Creativity and innovation in life and the Akinboye, J. O. (2002). Creativity and innovation in life and the work place (ED) *Psychological principles for success in life and workplace*, Ibada Stirling-Horden Publishers.
- Anderson, C. A. (2002). *Causes of Aggression: A Psychological Perspective*.
- Ballard, M., Argus, T., & Remley, T. P. (1999). Bullying and school violence: A Proposed Prevention Program. <https://doi.org/10.11177/019263659908360707>
- Banga, C. L. (2015). Aggression of secondary school students in relation to their gender and type of school. *Scholarly Research Journal for Humanity Science & English Language* 11 (2).
- Bar-On, R. (2002). EQ-I: *Bar-On emotional quotient inventory technical manual*. Toronto, Canada: Multi-Health Systems.
- Bar-On, R., & Parker, J. D. A. (2000). *The Bar-On Emotional Quotient Inventory: Youth Version (EQ-i:YV) Technical Manual*. Toronto, Canada: Multi-Health Systems.
- Bernstein, D. A., Penner, L. A, Clarke-Stewart, A., Roy, E. J. (2006). *Psychology* (7th ed.) Boston: Houghton Mifflin.
- Brackett, M. A., Mayer, J.D., & Warner, R. M. (2004). Emotional Intelligence and its relation to everyday behavior. *Personality and Individual Differences*, 36, (6), 1387- 1402. [http://dx.doi.org/10.1016/S0191-8869\(03](http://dx.doi.org/10.1016/S0191-8869(03)
- Bradberry, T., & Greaves, J. (2009). *Emotional Intelligence 2.0*
- Faris, N. H., Ishak, N. A., & Ramli, F. Z. (2016). Validity and reliability of the aggression questionnaire instrument to high school students. *IOSR Journal of Humanities and Social Science*, 21(12).
- Goleman, D. (1995). Emotional intelligence. Toronto; Bantam Books.
- Leventhal, H. (1982). A perceptual motor theory of emotion. <https://doi.org/10.1177/053901882021006003>.
- Mayer, J. D., & Ciarrochi, J. (2006). Clarifying concepts related to emotional intelligence: A proposed glossary. In J. Ciarrochi, J. P. Forgas, & J. D. Mayer (Eds.), *Emotional intelligence and everyday life* (2nd ed., pp. 261-267). New York: Psychology Press.
- Mundia, L. (2006). Aggressive Behavior among Swazi Upper Primary and Junior Secondary Students: Implications for Ongoing Educational Reforms Concerning Inclusive Education. *International Journal of Special Education*, 21 (3)
- Rathi, J. (2015). A study of emotional intelligence of adolescents in relation to the type of school. *International Journal of Applied Research*, 1(13).
- Rosener, J. B. (2011). Ways women lead. Leader, Gender, and Organization. *Springer, Sordrecht*, 19(29).
- Sancho, E., Salguero, J. M., & Berrocal, P. (2014). Relationship between emotional intelligence and aggression; A systematic review. *Aggression and Violent Behavior*, 19(5). Retrieved from <https://doi.org/10.1016/j.avb.2014.07.007>
- Shanmugham, R. (2019). Gender Differences in Emotional Quotient among Professional Students. *Internal Journal of Medical Research & Health Sciences*, 8(7).
- Wagner, P. J. (2006). Does high EI (emotional intelligence) make better doctors? *AMA Journal of Ethics*, 8(7).
- WHO. (2018). Retrieved from <https://www.britannica.com/science/adolescence>
- Zimmer-Gembeck, M. J., Gieger, T. C., & Crick, N. R. (2005). Relational and physical aggression, prosocial behavior, and peer relations: Gender moderation and bidirectional associations. *The Journal of Early Adolescence*, 25(4).

POSITIVE PEER PRESSURE AND RESPONSIBILITY BEHAVIOUR OF ADOLESCENTS

Myo Su Mon Kyaw¹ and San San Aye²

Abstract

The main aim of this research was to study the positive peer pressure and responsibility behaviour of adolescents. This study was conducted with the specific objectives to find out the differences in positive peer pressure and responsibility behaviour of adolescents by gender, subject-combination, and school locality. A total of Grade 10 students (415 males and 435 females) from five selected schools in Aungmye Township were participated in this study. Descriptive research design and survey method were used in this study. To measure positive peer pressure, the Peer Pressure Inventory (PPI) by Temesgen (2015) was used. And to measure responsibility behaviour, the Responsibility Behaviour Scale (RBS) developed by Eman (2005) was used and it consists of three components: personal responsibility, peer responsibility and community responsibility. Chronbach alpha value for positive peer pressure questionnaire was 0.853 and that of responsibility behaviour questionnaire was 0.845. Descriptive statistics, independent samples *t* test, One-way ANOVA analysis and Pearson Product Moment Correlation have been used to analyze the data. The results demonstrated that there were significant differences in positive peer pressure by gender and subject combination. Female adolescents had higher positive peer pressure than male adolescents. Combination 1 students experienced higher positive peer pressure than Combination 7 students. However, there were no significant differences in positive peer pressure by school locality. Also, there was a significant difference in responsibility behaviour by gender and female adolescents showed more responsibility behaviour than male adolescents. Moreover, there were no significant differences in responsibility behaviour by subject combination, and school locality. The result of correlation analyses revealed that there was a significant positive relationship ($r= 0.299$, $p<.001$) between positive peer pressure and responsibility behaviour of adolescents.

Keywords: Peers, Positive Peer Pressure, Responsibility

Introduction

Importance of the Study

Adolescence is a time when peers play an increasingly important role in the lives of youths. Teens begin to develop friendships that are more intimate, exclusive, and more constant than earlier years. In many ways, these friendships are an essential component of development. They also allow youths to practice and foster social skills necessary for future success. Peer groups are important influences in the shaping of one's personality, but there are more critical during developmental years of adolescents (Steinberg, 2005). Adolescents begin to separate themselves from their parents and to join people of their same age; the importance of parents decreases as they relate more with their age mates. Therefore, peer group is a dominant factor for many children at this time, because it creates and maintains a culture separate from home in which children are raised (Carter & Mc Goldrick, 2005).

Peer pressure has also been recognized as a powerful socializing agent and adolescents are mainly influenced by their peers either negatively or positively in such a way that their attitudes, beliefs and behaviours are conditioned by what is conceived to be accepted by other people (Duck, 1996). Although there is a common belief that peer pressure is the reason for many negative behaviours, in reality peers play a necessary and critical role in helping adolescents make successful transitions to adulthood. Peers can and do act as positive role models. Peers can model appropriate social behaviours, and peers often provide a sounding board for acceptance of voiced frustrations, challenges and concerns with being a teenager (Gardner, 2004).

¹ Senior Assistant Teacher, Basic Education High School No.1, Aungmye

² Lecturer, Department of Education Psychology, Sagaing University of Education

Positive peer pressure is an encouragement by peers to do something good. It may consist of helping out someone, influence of better grades, forcing someone to stop smoking, drinking or doing drugs. It can be a force for good and beneficial change in adolescent's life because during this time, they listen to what their friends say than their parents. Positive peer pressure occurs when someone's peers try to influence him or her to do something positive or uplifting or proactive or growth-building which affects his or her behaviour and attitude for the better. Good behaviour is a reflection of good attitude and good self-image. Then, peers can also exert extra-ordinary influence over each other into the formation of certain behaviours, among which is responsibility (Golden, 1978).

Responsibility is a character trait that is highly valued by society. Its acquisition is seen as essential to adulthood (Arnett, 2000; Partnership for 21st Century Skills, 2009, as cited in Salusky, et al., 2014). Responsibility is one of the aspects of behaviour which is crucial in the social life or social development of adolescents (Winter, 1992). It implies feeling accountable for one's decisions and actions, reliable and dependable to others and empowered to act on issues within one's control (Weisner, 2002). Teachers and parents value responsible behaviour in adolescents with good reasons. Understanding student responsibility and its development is therefore especially important for parents, teachers and school psychologists.

Most of parents and teachers understand that peer pressure is negative. What parents and teachers fail to understand is that in some instances peer pressure in the right environment can work for the benefit of their children. Therefore, the present study was conducted with an assumption that positive peer pressure might create constructive impacts on adolescent behaviour (i.e. responsibility). This study was intended to motivate teachers and school counselors to notice that peer pressure is actually important and has positive impact for healthy development and essential for youths to develop into healthy adults.

Aim of the Study

The main aim of this study is to study positive peer pressure and responsibility behaviour of adolescents from Aunglan Township (2019 - 2020 AY) .

The specific objectives are:

1. To find out the differences in positive peer pressure of Grade 10 students by gender, subject combination, and school locality.
2. To explore the differences in responsibility behaviour of Grade 10 students by gender, subject combination, and school locality.
3. To investigate the relationship between positive peer pressure and responsibility behaviour of Grade 10 students from Aunglan Township.

Scope of the Study

A total of 850 Grade 10 students (415 males and 435 females) were selected from five High Schools in Aunglan Township by simple random sampling technique.

Definitions of Key Terms

Peers

Peers are a group of people of the same age, status or interests and could include friends, classmates, team members or co-workers (Steinberg, 2005).

Positive Peer Pressure

Positive peer pressure is a pressure that motivates students to get into college, come to school on time, join in school co-curricular activities, obey the rules and regulations of the school, give respect for others and etc., (Tarshis, 2010).

Responsibility

Responsibility refers to behaviours such as respecting others, giving one's best effort in an activity, cooperating with others and staying task (Hellison, 2011).

Review of Related Literature

Nature of Positive Peer Pressure

Peers are people who are part of the same social group, so the term peer pressure refers to the influence that peers can have on each other or peer pressure is when members or friends of the same age group try to influence or talk someone in doing things that he/she does not do (Tarshis, 2010). It involves adapting behaviours that the individual would otherwise not adapt. If members of the group value a particular behaviour, there will be a kind of pressure to conform to this. Peer pressure is a phenomenon that affects many youths due to the importance of peer relations during adolescence (Brinthaupt, 2002; as cited in Quimby, 2015).

There are two types of peer pressure, namely: positive peer pressure and negative peer pressure. Tarshis (2010) mentioned that positive peer pressure is a pressure that motivates students to get into college, come to school on time, join in co-curricular activities, obey the rules and regulations of the school, give respect for others and etc. Positive peer pressure encourages adolescents to study hard and to be competent at school and can also help them think more creatively (Oak, 2002-2009). This contributes greatly to the development of responsibility to work, property, and possession of some constructive interests for personal, friends, and community progresses. Clasen and Brown (1985) suggested in their study about the characteristics of those adolescents who are influenced positively by their peer groups. That is, these adolescents develop and maintain behaviours that clearly predict personal responsibility; for instance, they study hard to get good grades, don't cut classes or skip schools, become students liked by their teachers, be nice to teachers, and stay home on weekends with their families. Ryan (2000) suggested in his study that a peer group influences its members to develop and strengthen character through the skills of critical thinking, decision making, and problem solving, and recognizing social responsibilities. Similarly, peer group pressure makes adolescents responsible and do make constructive choices regarding their behaviour (Carter & McGoldrick, 2005). This research study focused on Erikson's identity theory for positive peer pressure.

Erikson's Identity Theory

According to Erikson (1968), in the adolescence stage (ages 12-18), an identity crisis occurs when adolescents seriously question their essential personal characteristics, their views of themselves, their concerns about how others view them, or their doubts about the meaning and purpose of their existence. The outcome could be either healthy and coherent identity formation or identity confusion. According to Erikson, an adolescent's main task is developing a sense of self. Adolescents struggle with questions such as "Who am I?" and "What do I want to do with my life?" Adolescents who are successful at this stage have a strong sense of identity and are able to remain true to their beliefs and values in the face of problems and other people's perspectives. Teenagers who struggle to adopt a positive role will likely struggle to "find" themselves as adults. Adolescence is the time where people develop traits and caricatures that will form the way they act and are perceived, these characteristics can be influenced by peers.

At this age, adolescents give much importance to their friends who have a power over them. This phenomenon is called “peer pressure.” Erikson’s theory states that peer pressure is needed for a person to develop, learn and grow and to form into an individual, it is through both positive and negative peer pressure that people form and develop their individuality and social status, this often starts in adolescence. Erikson also identified four stages regarding peer pressure, i.e. Autonomy, Fitting in, Failure and Success.

(1) Autonomy

In Autonomy Stage, children seek to become independent from their parents and immerse themselves in their own social environment during adolescence. In order to increase their autonomy and explore their own individual identities, adolescents also need to question their parents’ rules and behaviours. As a result of questioning their parents and spending less time with them, adolescents are more susceptible to peer pressure, particularly in the younger years.

(2) Fitting In

In Fitting in stage, adolescents often pull away from their parents and rebel. Fitting in is also where adolescents often struggle in finding who they want to be and their position in society, this is assisted by peers. Peer group fulfill the adolescent’s need for validity and acceptance and provide space and opportunity for exploration and experimentation. Adolescents actively seek membership in a peer group to help them explore different educational, occupational, political and social roles.

(3) Failure

In Failure stage, a child is having difficulties finding who they are and when they fit in, this is often when negative peer pressure comes into play and risk taking behaviours start. If a child is struggling at this stage and identity confusion is stronger than identity formation, he/she might explore lifestyles that are unhealthy or dangerous. A child who fails to develop properly during this stage rejects social contracts with others and fights conforming to social values, becoming particularly susceptible to negative peer pressure. Children who are pressured by parents to conform to a particular role they don’t identify with may also rebel.

(4) Success

In Success stage, adolescents seem to find who they are but still fit into social peer pressure. The healthy rebellion stage begins, this is where the rules, responsibility and consequences are understood. This stage is needed for a healthy transition to adulthood.

According to Erikson, successful completion of his fifth stage leads to the ability to be loyal to people and ideologies, and it is necessary for a positive transition to adulthood (as cited in Duff, 2015).

Nature of Responsibility Behaviour

Lickona (1991) described responsible behaviour as “the active role of morality. It includes taking care of self and others, fulfilling our obligations, contributing to our communities, alleviating suffering, and building a better world”. Lickona further indicated responsibility is more than thinking about what is moral, it is having a conscience, empathy, and self-control which he describes as “moral feeling” and also making competent action a habit or a “moral action.” Ryan and Bohlin (1999) stated that responsibility is, among other things, “the habit of doing our duties and living with the consequences of our decisions and mistakes.”

Lowee, Dillon, Rhodes, and Zwiebach (2013) divided responsibility into two types: responsibility for self and responsibility for others. According to them, responsibility for self in regard to psychological experiences resulting from behaviours; as feeling autonomous,

independent, and in control over one's life after taking on novel experiences. They describe responsibility for others in regard to behaviours that revolve around meeting the needs of other people, being reliable for others, or being a leader. This research study focused on Piaget's theory for responsibility behaviour.

Piaget's Theory

According to Piaget (1932/1965), children under the ages of nine develop a concept of responsibility based primarily on the effects of behaviour rather than on motives or intentions and this kind of responsibility is called objective responsibility. However, it cannot be denied that the notion of objective responsibility diminishes as the child grows older. At the ages of 9 and above, children's understanding of rules was more influenced by their experiences of creating and enforcing rules. As children entered concrete operational state, they became able to represent the perspectives of their peers and to simultaneously consider both motives and outcomes when reasoning about behaviours. In this stage, subjective responsibility appears and develops when the child is accustomed to act from the point of view of those around him, when he tries to please rather than to obey, that he will judge in terms of intentions. So that taking intentions into account presupposes cooperation and mutual respect. In so far as the child tends towards manhood, his relations with the adult tend towards equality. The unilateral respect belonging to constraint is not a stable system, and the equilibrium towards which it tends is no other than mutual respect. Therefore, it cannot be maintained with regard to the child that the final predominance of subjective over objective responsibility is the outcome of antagonistic forces in relations to responsibility in general.

Methodology

In this study, descriptive research design and survey method were used.

Sample

The total of 850 (male = 415, female = 435) Grade 10 students were selected as participants from five high schools from Aungmye Township by using simple random sampling technique.

Instrumentation

The instruments used in this research were "The Peer Pressure Inventory (PPI)" by Temesgen (2015) for measuring positive peer pressure and "The Responsibility Behaviour Scale (RBS)" by Eman (2005) for measuring responsibility behaviour of adolescents. The Peer Pressure Inventory consists of 30 items. The Responsibility Behaviour Scale consists of 39 items and composed of three subscales: personal responsibility, peer responsibility and community responsibility and each subscale consists of 13 items.

After making the pilot study, the reliability analysis of the instruments was conducted by using the Statistical Package for the Social Science (SPSS) 21 Version. The internal consistency reliability (Cronbach's alpha coefficient) of pilot study was computed and it is 0.853 for positive peer pressure questionnaire and 0.845 for responsibility behaviour questionnaire.

Procedure

Firstly, researcher reviewed the related literature from several available books, theses, journals, dissertation, and internet sources. Positive Peer Pressure and Responsibility Behaviour Questionnaires were adapted and also translated to Myanmar version. In order to validate these instruments, experts' review was requested. Next, pilot study was conducted. And the instruments were taken reliability according to pilot results by using SPSS (21.00). After taking the validity and reliability of the instruments, the actual test was implemented at selected

schools in Aunglan Township. After performing actual test, the collected data were analyzed and interpreted. In interpreting the actual test, Cronbach's alpha was 0.885 for Positive Peer Pressure Questionnaire and 0.863 for Responsibility Behaviour Questionnaire. Finally the necessary suggestions and recommendations for this study were discussed.

Data Analysis and Findings

This study aimed to investigate the positive peer pressure and responsibility behaviour of adolescents and participants were selected from Grade 10 students in Aunglan Township. This study will also investigate the positive peer pressure and responsibility behaviour by gender, subject-combination and school locality. By using the Statistical Package for Social Science (SPSS, version 21), the descriptive statistics, independent samples *t* test and One-way ANOVA and Pearson Product Moment Correlation were conducted in this section.

Descriptive Statistics for Positive Peer Pressure of Grade 10 Students

First of all, the responses of participants were analyzed by using statistical descriptive procedure to find out mean, standard deviation, minimum score and maximum score.

Table 1 Descriptive Statistics for Positive Peer Pressure of Grade 10 Students

Variable	N	Minimum Score	Maximum Score	Mean	SD
Positive Peer Pressure (Total)	850	51	115	95.02	10.12

Positive peer pressure of Grade 10 students from selected schools in Aunglan Township was satisfactory.

Mean Comparison for Positive Peer Pressure of Grade 10 Students by Gender

To find out the significant difference in positive peer pressure between males and females of Grade 10 students, descriptive statistics and independent samples *t* test were conducted.

Table 2 Mean Comparison and the result of independent samples *t* test for Positive Peer Pressure of Grade 10 Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Positive Peer Pressure	Male	415	93.79	10.67	-3.5***	848	.000	-2.41
	Female	435	96.20	9.42				

Note: ***The mean difference is significant at 0.001 level.

According to the result in Table 2, there was a significant difference in positive peer pressure of Grade 10 students by gender. Female students had higher positive peer pressure than male students. This result was consistent with the result of Brown (1982), Padilla-Walker (2009) and Quimby (2015).

Mean Comparison for Positive Peer Pressure of Grade 10 Students by Subject Combination

To find out the significant differences in positive peer pressure between students in combination 7 and students in combination 1, descriptive statistics and independent samples *t* test were conducted.

Table 3 Mean Comparison and the result of independent samples *t* test for Positive Peer Pressure of Grade 10 Students by Subject Combination

Variable	Subject Combination	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Positive Peer Pressure	7	430	94.16	10.13	-2.525*	848	.012	-1.74
	1	420	95.90	10.4				

Note: *The mean difference is significant at 0.05 level.

According to the result in Table 3, there was a significant difference in positive peer pressure by subject combination. Positive peer pressure of Grade 10 students in combination 1 (Economics Students) had higher positive peer pressure than that of students in combination 7 (Biology Students).

Mean Comparison for Positive Peer Pressure of Grade 10 students by School Locality

To find out the differences in positive peer pressure of Grade 10 students by school locality, descriptive statistics and one-way ANOVA were conducted.

Table 4 Mean Comparisons for Positive Peer Pressure of Grade 10 Students by School Locality

Variable	School Locality	N	Mean	SD
Positive Peer Pressure	Urban	295	94.64	9.67
	Sub-urban	285	94.59	10.46
	Rural	270	95.89	10.20
	Total	850	95.02	10.12

Table 5 The Results of ANOVA for Positive Peer Pressure of Grade 10 Students by School Locality

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Positive Peer Pressure	Between Groups	300.853	2	15.427	1.472	.23
	Within Groups	86558.765	847	102.195		
	Total	86895.619	849			

As above mentioned ANOVA results in Table 5, it was found that there were no significant differences in positive peer pressure of Grade 10 students by school locality. It was consistent with the result of Dr. Suresh Kumar Murugesan and Dr. T. Augustus Julian Lazmey (2019) which was reported that youths belong to rural and urban areas do not differ significantly in their positive peer pressure.

Descriptive Statistics for Responsibility Behaviour of Grade 10 Students in Each Subscale

Responsibility behaviour of Grade 10 students was identified by the following three subscales which include personal responsibility, peer responsibility and community responsibility. In term of descriptive statistics, means, standard deviations, minimum and maximum scores of responsibility behaviour were calculated to analyze data.

Table 6 Descriptive Statistics for Responsibility Behaviour of Grade 10 Students in Each Subscale

Subscales	N	Minimum Scores	Maximum Scores	Mean	SD
Personal Responsibility	850	31	52	45.45	3.78
Peer Responsibility	850	32	52	45.79	3.29
Community Responsibility	850	17	52	46.39	4.08
Responsibility Behaviour (Total)	850	97	156	137.68	9.63

Responsibility behaviour for Grade 10 students in Aunglan Township was satisfactory.

Mean Comparison for Responsibility Behaviour of Grade 10 Students by Gender

To investigate the difference in responsibility behaviour between male and female students, descriptive statistics and independent samples *t* test were conducted.

Table 7 Mean Comparison and the Result of Independent Samples *t* test for Responsibility Behaviour of Grade 10 Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Responsibility Behaviour	Male	415	135.48	9.82	-6.66***	848	.000	-4.24
	Female	435	139.77	8.96				

Note: ***Mean difference is significant at 0.001 level.

According to the result in Table 7, there was a significant difference in responsibility behaviour of Grade 10 students by gender at 0.001 level. The responsibility behaviour of female students was higher than that of male students. This result was consistent with the result of Hurlock (1978), in Temesgen (2015).

Table 8 Mean Comparisons and the Results of Independent Samples *t* test for Responsibility Behaviour Subscales of Grade 10 Students by Gender

Subscales	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Personal Responsibility	Male	415	44.57	3.96	-7.186***	848	.000	-1.81
	Female	435	46.38	3.36				
Peer Responsibility	Male	415	45.32	3.29	-4.089***	848	.000	-0.91
	Female	435	46.23	3.23				
Community Responsibility	Male	415	45.59	4.20	-5.690***	848	.000	-1.57
	Female	435	47.16	3.82				

Note: *** Mean difference is significant at 0.001 level.

According to the results in Table 8, there were significant differences in all subscales of responsibility behaviour and female students showed more responsibility behaviour than male students in all subscales.

Mean Comparison for Responsibility Behaviour of Grade 10 Students by Subject Combination

To find out the differences in responsibility behaviour between students in combination 1 students and students in combination 7 students, descriptive statistics and independent samples *t* test were conducted.

Table 9 Mean Comparison and the Result of Independent Samples *t* test for Responsibility Behaviour of Grade 10 Students by Subject Combination

Variable	Subject Combination	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Responsibility Behaviour	7	430	138.24	9.52	1.72	848	.086	1.14
	1	420	137.10	9.71				

According to Table 9, there was no significant difference in responsibility behaviour of Grade 10 students by subject combination.

Table 10 Mean Comparisons and the Results of Independent Samples *t* test for Each Responsibility Behaviour Subscale of Grade 10 Students by Subject Combination

Subscales	Subject Combination	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Personal Responsibility	7	430	45.78	3.755	2.195*	848	.028	.12
	1	420	45.21	3.777				
Peer Responsibility	7	430	45.85	3.203	.523	848	.061	-.41
	1	420	45.73	3.374				
Community Responsibility	7	430	46.61	4.088	1.6.6	848	.109	-.67
	1	420	46.16	4.073				

Note: * The mean difference is significant at the 0.05 level in personal responsibility.

According to the results in Table 10, there was a significant difference in personal responsibility at 0.05 level by subject combination and there were no significant differences in peer responsibility and community responsibility. Students in combination 7 showed higher personal responsibility than students in combination 1.

Mean Comparison for Responsibility Behaviour of Grade 10 Students by School Locality

To find out the differences in responsibility behaviour of Grade 10 students by school locality, descriptive statistics and one-way ANOVA were conducted.

Table 11 Mean Comparisons for Responsibility Behaviour of Grade 10 Students by School Locality

Variable	School Locality	N	Mean	SD
Responsibility Behaviour	Urban	295	138.34	10.07
	Sub-urban	285	137.20	9.36
	Rural	270	137.47	9.40
	Total	850	137.68	9.63

Table 12 The Results of ANOVA for Responsibility Behaviour of Grade 10 Students by School Locality

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Responsibility Behaviour	Between Groups	204.743	2	102.37	1.105	.332
	Within Groups	78446.576	847	92.62		
	Total	78651.319	849			

As above mentioned ANOVA result in Table 12, it was found that there were no significant differences in responsibility behaviour of Grade 10 students by school locality.

The Relationship between Positive Peer Pressure and Responsibility Behaviour of Grade 10 students

In order to explore the relationship between positive peer pressure and responsibility behaviour of Grade 10 students, the Pearson Product Moment Correlation Coefficient was computed.

Table 13 The Relationship between Positive Peer Pressure and Responsibility Behavior of Grade 10 Students

Variable	Responsibility Behaviour
Positive Peer Pressure	.299***

Note: *** Correlation is significant at the 0.001 level (2-tailed).

According to the result in Table 13, there was a positive relationship between positive peer pressure and responsibility behaviour of Grade 10 students because the correlation coefficient was statistically significant at 0.001 level. This result was consistent with the result of Temesgen (2015) that there was a positive correlation between positive peer group pressure and responsibility behaviour of adolescents.

Table 14 Relationships between Positive Peer Pressure and Each Subscale of Responsibility Behaviour

Variable	Positive Peer Pressure	Personal Responsibility	Peer Responsibility	Community Responsibility
Positive Peer Pressure	-	.265***	.264***	.247***
Personal Responsibility	-	-	.545***	.671***
Peer Responsibility	-	-	-	.621***
Community Responsibility	-	-	-	-

According to the results in Table 14, there were positive relationships between positive peer pressure and each subscale of responsibility behaviour. The relationship between positive peer pressure and personal responsibility was $r=.265$, $p<.001$. The relationship between positive peer pressure and peer responsibility was $r=.264$, $p<.001$. And the relationship between positive peer pressure and community responsibility was $r=.247$, $p<.001$. Therefore, it can be concluded that increase in positive peer pressure indicates that increase in all subscales of responsibility behaviour.

Conclusion

First, based on the findings of this research, positive peer pressure and responsibility behaviour of adolescents in Aunglan Township were satisfactory. It can be said that there were significant differences in positive peer pressure of Grade 10 students by gender, subject combination and school locality. Female students had higher positive peer pressure than male students. It may be that male and female adolescents have different nature and teachers, parents and adults nurture them differently in their lives. Then, students in combination 1 would experience higher positive peer pressure than students in combination 7. And there were no significant differences in positive peer pressure of Grade 10 students by school locality. It may be that rural, sub-urban and urban areas in Aunglan Township may not be greatly significant in their cultures and situations.

Moreover, there was a significant difference in responsibility behaviour of Grade 10 students by gender. Female students showed higher responsibility behaviour than male students. It may be that females show motherhood role than males and they may care others than males and they may feel more kindness than males. Moreover, female students would be more obedient to rules and regulations than male students. So, they may show more responsibility behaviour. And there was no significant difference in responsibility behaviour of Grade 10 students by subject combination but there was a significant difference in personal responsibility, one of the subscales of responsibility behaviour, between combination 1 students and combination 7 students. Besides, there were no significant differences in responsibility behaviour of Grade 10 students by school locality. Therefore, locality of school cannot influence on students' responsibility behaviour. It may be concluded that rural, urban and sub-urban areas in Aunglan Township were not greatly difference in cultures and situations. Finally, there was a significant positive relationship between positive peer pressure and responsibility behaviour of Grade 10 students. Therefore, positive peer pressure can increase responsibility behaviour of adolescents.

Moreover, teachers need to train male students than female students to become responsible students and responsible citizenships. In short, to be able to shape for becoming responsible students and responsible citizenships, teachers need to notice the following suggestions:

To be able to become responsible students, teachers should encourage students to-

- Attend classes on time and regularly
- Maintain discipline in the classroom
- Complete the assigned work on time
- Doing the best
- Obey the teachers
- Participate in classroom activities
- Cooperate with teachers and peers
- Respect themselves and others and
- Helping others.

Moreover, teachers also need:

- to know that as peer pressure is an indispensable in the social life of adolescents, need to apply effective strategies to make the peer group environment constructive for adolescents' physical, psychological and relational well-being.
- to relinquish the stereotype of peers or peer groups as a uniformly negative influence on adolescents because they discourage deviant activity in favor of school achievement and involvement in sports or other extra-curricular activities.
- To recognize that peer relationships are actually important for healthy development and essential for adolescents to develop into healthy adults and positive peer pressure can encourage healthy behaviour such as responsibility behaviour.

Therefore, it is needed to empower or train not only teachers but also parents to help adolescents pursue and maintain positive peer relationships and they all should contribute to helping adolescents develop positive peer pressure.

Acknowledgements

First of all, we like to express our special thanks to Dr. Saw Pyone Naing (Rector) and Dr. Myat Myat Thaw (Pro-Rector) in Sagaing University of Education for their excellent arrangements and permissions to do this research.

Our special gratitude expands to Dr. Khin Hnin Nwe (Professor/Head of Department, Department of Educational Psychology, Sagaing University of Education) for her precious advice and kind support on this paper.

We would like to give our sincere thanks to Dr. Min Than (Professor/Head of Department, Department of English, Sagaing University of Education) for his insightful comments and valuable editing towards this paper.

References

- Brown, B. B. (1982). The extent and effects of peer pressure among high school students: A retrospective analysis. *Journal of Youth and Adolescence*, 11, 121-133 University of Wisconsin.
- Carter, B., & McGoldrick, M. (2005). The expanded life cycle: Individual, family, and social perspectives (3rd ed). Needham Heights, MA: Allyn & Bacon.
- Clasen, D. R. & Brown, B. B. (1987). Understanding peer pressure in middle school. *Middle School Research Selected Studies*, 12(1), 65-75. doi:10.1080/ 08851700. 1987.11670280
- Erikson, E. H. (1968). Identity, youth, and crisis. New York: Norton.
- Duck, V. (1996). A lifetime of relationship, New York: Brooks/Cole.
- Duff, B. (2015). Teenage peer pressure. <https://prezi.com/mfkihrxvdsq6b/teenage-peer-pressure/>
- Dr. Suresh Kumar Murugesan & Dr. T. Augustus Julian Lazmey. (2019). Exploring the peer pressure among youth. *International Journal of Social Sciences*, 7(5), 978-981. ISSN. 2347-3797
- Gardner, (2004). Peer pressure and academic motivation and achievement. Pacific Lutheran University. UMI Number, 1424435. ProQuest Information and Learning Company 300 North Zeeb Road P. O. Box 13456 Ann Arbor, MI 48106-1346.
- Golden, E. T. (1978). Social responsibility: A teachable skill Columbus: Ohio Department of Education.
- Hellison, D. (2011). Teaching personal and social responsibility through physical activity (3rd ed.). Champaign, IL: Human Kinetics
- Golden, E. T. (1978). Social responsibility: A teachable skill Columbus: Ohio Department of Education.
- Hellison, D. (2011). Teaching personal and social responsibility through physical activity (3rd ed.). Champaign, IL: Human Kinetics
- Lickona, T. (1991). Educating for character: How our schools can teach respect and responsibility. New York, NY: Bantam.
- Lowee, S. R., Dillon, C. O., Rhodes, J. E., & Zwiebach, L. (2013). Defining adult experiences: Perspectives of a diverse sample of young adults. *Journal of Adolescent Research*, 28(1), 31-68. Doi:10.1170/ 0743558411435854.
- Oak, M. (2002-2009). Negative and positive effects of peer pressure. Available at www.buzzle.com/artist / negative-and-positive-effects-of-peer-pressure.html
- Piaget, J. (1932/1965). The moral judgment of the child. New York: The Free Press.
- Padilla-Walker, L. M., & Bean, R. A. (2009). Negative and positive peer influence: Relations to positive and negative behaviours of African American, European American, and Hispanic adolescents. *Journal of Adolescence*, 32, 323-337. <http://dx.doi.org/10.1016/j.adolescence.2008.02.003>
- Quimby, D. (2015). *Positive peer pressure among Black American Youth and the roles of ethnic identity and gender*. Master's Theses, 2791. Loyola University Chicago. <https://ecommons.luc.edu/luc-theses/2791>
- Salusky, Larson, W., Griffith, A., Wu, J., Raffaelli, M., Sugimura, N., & Guzman, M. (2014). How adolescents develop responsibility: What can be learned from youth programs. In Press, *Journal of Adolescent Research*, 24(3), 417-430 Illinois Champaign-Urbana & Loyola University Chicago.
- Ryan, A. M. (2000). Peer groups as a context for the socialization of adolescents' motivation, engagement, and achievement in school. *Educational Psychologist*, Vol. 35, Issue 2.

- Ryan, K., & Bohlin K. E. (1999). Building character in our schools. San Francisco, CA: Jossey-Bass.
- Steinberg, L. (2005). Adolescence. New York, NY: McGraw-hill.
- Tarshis (2010). Living with the peer pressure and bullying. New York.
- Temesgen, N. (2015). The relationship between peer group pressure and responsibility behaviour: The case of three secondary and prepatory schools in Addis Ababa. Addis Ababa University. College of Education and Behavioural Studies School of Psychology.
- Weisner, T. (2002). Ecocultural pathways, family values and parenting. Parenting: Science and Practice, 2(3), 325-334.
- Winter, D. G. (1992). Responsibility. In C. P. Smith & J. W. Atkinson (Eds.), Motivation and personality: Handbook of thematic content analysis (pp. 500-505). New York: Cambridge University Press.

SOCIAL SKILLS AND SOCIAL INTERACTION ANXIETY OF HIGH SCHOOL STUDENTS

Su Myo Thant¹ and Ohmmar Tin²

Abstract

The main purpose of this study was to study social skills and social interaction anxiety of high school students in Aunglan Township. The research design for the study was quantitative research design and descriptive survey method. A total of 900 students (449 males and 451 females) were selected from six selected high schools. To measure the social skills, Social Skills Questionnaire by Gresham and Elliott (1990) was used and Cronbach's alpha was 0.952. And to measure the social interaction anxiety, Social Interaction Anxiety Scale was made by Mattick and Clarke (1998) and Cronbach's alpha was 0.836. Both had to be answered on five-point Likert scales. After that, the data were analyzed by using descriptive statistics, *t* test and ANOVA test. According to the result of independent samples *t* test, there were significant differences in social skills by gender but no significant differences by grade. Female students had higher social skills than those of male students. In social interaction anxiety, there were significant differences by gender but no significant difference by grade. Male students had higher social interaction anxiety than those of female students. Depending on the results of One-way ANOVA, there were significant differences in social skills by school locality. Students in urban and sub-urban schools had higher social skills than that of students in rural schools. Depending on the results of One-way ANOVA, there were significant differences in social interaction anxiety by school locality. Students in rural schools had higher social interaction anxiety than those of students in urban and sub-urban schools. Pearson-Product Moment correlation was conducted and it was found that social skills and social interaction anxiety of high school students in this study were significantly and negatively correlated ($r = -.587, p < .001$).

Keywords: Social Skills, Anxiety, Social Interaction Anxiety

Introduction

Importance of the Study

Social skills play a vital role in the development of adolescents (Mead, 1934; Goffman, 1959; 1974; Joas, 1996). Adolescence is a time of personal and social development that requires a sophisticated repertoire of social-emotional skills for healthy adjustment. Adolescents often face considerable negotiating the biological, cognitive and psychological changes associated with puberty (Akelatis, 2015). Adolescence is a developmental stage in which the social skills play an important role considering the need for social integration and the search for self-assertion and independence (Caballo, 2003).

Social skill is an essential element in our everyday life. Students with good social skills can adjust their environment beneficially and draw profit for them from the social interactions. Not only in everyday life but also in teaching learning process, social skills play a vital role. When proper teaching of social skills is missing in the classroom, group members can sometimes lack the social skills necessary for appropriate interaction and cooperative groups are then ineffective. This can occasionally lead to conflict, miscommunication or one student doing all of the work (as cited in Johnson, 1990).

Social skills are explained as an assumption of a wholesome social life (Osit, 2008), which are essential in pursuance of personal sovereignty, ability to adapt to social situations, to express themselves and understand others (Colombero, 2004); to communicate avoiding conflicts, to maintain good interpersonal skills (Brodeski, Hembrought, 2007); social skills are an important

¹ Senior Assistant Teacher, No.1 Basic Education High School, Aunglan, Aunglan Township

² Lecturer, Department of Educational Psychology, Sagaing University of Education

condition for a harmonious existence in a social group, a possibility for an individual to act effectively in a social environment, and an assumption of a successful socialization.

Murphy (2005) found that underdeveloped social skills could lead to isolation, loneliness, and frustration. Failure to develop adequate social skills can lead to negative feelings, self-doubt, and low self-esteem. While James (2002) contended that social skills are foundation for getting along with others. A lack of Social Skills can lead to behavioral difficulties in school, delinquency, inattentiveness, peer rejection, emotional difficulties, bullying, difficulty in making friends, aggressiveness, problems in interpersonal difficulties, poor self-concept, academic failures, concentration difficulties, isolation from peers, and depression (James, 2002).

Students with poor social and emotional skills are more at risk of experiencing in such behavior, substance abuse, violence and criminality, and to leave school without any certification or vocational skills, with consequently poor employability opportunities (Akelaitis, 2015).

Social skills deficits are considered to hinder social functioning and the adaptive ability of individuals, with several implications and several impairments, especially for performance and social interactions. Impairment in social skills has been assumed as one of the paramount aspects of social anxiety disorder (SAD), which is considered a serious mental health problem because of its high prevalence and its resulting limitations on social interactions and performance. According to the diagnostic criteria from DSM-IV (APA, 1994), individuals with SAD or social phobia exhibit excessive, persistent and irrational fear of being seen behaving in a humiliating or embarrassing way by the display of anxiety or inappropriate performance and of disapproval consequences or rejection by others.

People who experience social anxiety are often concerned that in feared situations or environments they may be judged as anxious, 'crazy', stupid, inarticulate, or otherwise inadequate (APA, 2000; Clark & Wells, 1995; Rapee & Heimberg, 1997). Socially anxious students have difficulty in interpersonal communication and perceive it as stressful (Strahan, 2003).

Social interaction anxiety manifests itself during interpersonal interaction and attributed to distress in the event of meeting or talking with another people no matter who they are. Moreover, this form of anxiety is highly affiliated with a series of undesirable psychological outcomes like negative feelings, severe disturbance and less satisfaction in relationships, suicide ideation, solitariness, less education and less performance in career achievement. As well as experiencing such negative outcomes, it is more probable that individuals who experience social interaction anxiety also pass upon the rewarding facets of social interaction and may become solitariness (Kashdan, 2002). The heightened risk of loneliness may cause adverse health issues (Cacioppo, Hawkley, & Thisted, 2010; Luo, Hawkley, Wilson et al., 2007).

Weisman, Aderka, Marom, Hermesh, and Gilboa-Schechtman (2011) found that social interaction anxiety was related to perceiving oneself as having low social rank, being inferior, and behaving submissively, as well as to low perceived intimacy and closeness among peer relations, friendships and romantic relationships (as cited in Irkörüçü Küçük, 2018).

Some students (Grade 10 and Grade 11) can transfer from Middle Schools to High Schools. During the freshmen students are surrounded with many problems related to social, academic and personal-emotional adjustment (Aderi, Jdaitawi, Ishak, & Jdaitawi, 2013; Beyers & Goossens, 2002; Jdaitawi, Ishak, Taamanh, Gharaibah, & Rababah, 2011). So, they will absolutely meet new people, interact with different people and sometimes these situations can cause social interaction anxiety for them. Studies demonstrated that social interaction anxiety negatively impacts especially the life of freshman students (Arjanggi & Kusumaningsih, 2016a, 2016b; Nordstrom et al., 2014). A student who experiences social interaction anxiety is at risk of drop out social and emotional problems in schools.

Therefore, social interaction anxiety is a vivid role in adolescents' social skills. This study aimed the relationship between social skills and social interaction anxiety of high school students.

Aims and Objectives of the Study

The main aim of the study was to study social skills and social interaction anxiety of high school students from selected schools in Aunglan Township.

The specific objectives are,

1. To compare the differences in social skills of high school students in Aunglan Township by gender, grade and school locality.
2. To explore the differences in social interaction anxiety of high school students in Aunglan Township by gender, grade and school locality.
3. To find out the relationship between social skills and social interaction anxiety of high school students in Aunglan Township.

Scope of the Study

This study is limited to investigate social skills and social interaction anxiety of Grade 10 and Grade 11 students from selected schools in Aunglan Township. Two selected high schools from rural, another two from sub-urban and two from urban areas. The total samples for this study constitute 445 Grade 10 students including 224 males and 221 females and 455 Grade 11 students including 225 males and 230 females.

Definition of Key Terms

Social Skills	- Social skills are defined as socially acceptable behaviors that enable a person to interact effectively with others and avoid socially unacceptable responses from others (Gresham & Elliott, 1993).
Anxiety	- Anxiety can be defined as an unpleasant emotional state of condition which is characterized by subjective feeling or tension, apprehension and worry (Spielberger, 1972).
Social Interaction Anxiety	- Social interaction anxiety is defined as the fear and avoidance of meeting, interacting, and expressing oneself with others (Mattick & Clarke, 1998).

Review of Related Literature

This research study focused on Gresham and Elliott's model of social skills for students' social skills and Mattick and Clarke's model of social interaction anxiety for their social interaction anxiety.

Gresham and Elliott's Model of Social Skills

Behaviors such as sharing, helping, initiating relationships, requesting-help from others, giving compliments and saying 'please' and 'thank you' are socially desirable behaviors that almost everyone would agree are examples of social skills. The development of social skills is one of the most important outcomes of the schooling process. Children with social skills deficits are at risk for social- emotional difficulties and poor academic performances (Parker and Asher, 1987).

Gresham and Elliott (1990) have been offered to facilitate memory for, and the identification of five major clusters of social skills. Many students have difficulties in all five of these areas, which is why they lack appropriate social skills.

The clusters are cooperation, assertion, responsibility, empathy and self-control. Briefly, these clusters of social behaviors can be characterized as follows;

1. Cooperation- behaviors such as helping others, sharing materials with a peer and complying with rules.
2. Assertion- describes initiating behaviors such as asking others for information and behaviors that are responses to others' action such as responding to peer pressure.
3. Responsibility- behaviors that demonstrate the ability to communicate with adults and concern about one's property.
4. Empathy- behaviors that show concern for a peer's or significant adult's feeling.
5. Self-control- behaviors that emerge in conflict situations such as responding appropriately to teasing or to corrective feedback from an adult (as cited in Elliott.S.N & Busse R.T, 1991).

According to Vaughn, Bos and Schumn (1997), the goal is to teach students to identify their problems and alternative strategies for effectively solving their problems (cited in Johns, Crowley, & Guetzloe, 2005). If students were able to better manage their feelings, they would have the ability to stay on task, to focus, to think and to produce (Liff, 2003, as cited in Woodie, 2007).

Mattick and Clarke's Model of Social Interaction Anxiety

Social anxiety has been proposed to be composed of two interrelated dimensions (Mattick & Clarke, 1998). Social interaction anxiety is defined as the fear and avoidance of meeting, interacting, and expressing oneself with others. People with social interaction anxiety exhibit the distress feeling due to the fear of appearing inarticulate and dull, sounding foolish, and the inability act properly when meeting and talking with other parties in social interaction Social observation anxiety is defined as the fear and avoidance of social situations where one is performing or being observed (as cited in Kashdan, 2004).

This makes sense as social interaction fears and avoidance behaviors can be expected to interfere with the initiation of positive social encounters and the development of close relationships, which serve as sources of intimacy, laughter, social support, and other reinforcing outcomes. Social interaction anxiety was associated with lower subjective well-being, positive affect, vitality, optimism, hope, reward sensitivity, and curiosity even after controlling for the higher-order factor of trait anxiety (Kashdan, 2002, as cited in Kashdan, 2004).

Methodology

In this study, descriptive research design and quantitative survey method were used.

Sample

The survey research was conducted for Grade 10 and Grade 11 students in Aunglan Township during the academic year of 2019-2020. The total of 900 Grade 10 (males=224 males and females=221) and Grade 11 (males=225 and females=230) students were selected from two rural schools, two sub-urban schools and two urban schools by using simple random techniques.

Instrumentation

The instrumentation used in this research were “Social Skills Questionnaire (Student Form)” developed by Gresham and Elliott (1990) to measure social skills and “Social Interaction Anxiety Scale (SIAS)” developed by Mattick and Clarke (1989) to measure social interaction anxiety.

Social Skills Questionnaires was composed of four subscales: cooperation, assertion, empathy and self-control. It consists of 10 items for cooperation, 9 items for assertion, 10 items for empathy and 10 items for self-control. The total items were 39 items statements in this questionnaire. Social Interaction Anxiety Scale consists of 20 items and unidimensional.

After making the pilot study, the reliability analysis of instruments was conducted by using the Statistical Package for the Social Science (SPSS) 21.00 Version. The internal consistency reliability (Cronbach’s alpha coefficient) of pilot test was 0.7 for students’ social skills and 0.785 for social interaction anxiety students. So, the instruments can be said to be fairly reliable to use for this study.

Procedure

For this study, researcher referenced for the related literatures from many journals, thesis and dissertations, and reports in education site as much as possible. After reporting the proposal, permissions from authorized persons were requested. Then, research instruments were prepared. These instruments were assessed by the experts in the field of Educational Psychology to predict content validity. After getting permission from the concerned, the pilot study was conducted to validate internal consistency. According to this result, all items were used for the final test administration.

After testing the validity and reliability of the instruments, actual testing was started at selected schools in Aunglan Township. A total of 900 high school students participated in this study. Then, the collected data was analyzed by using the Microsoft excel (2010) and the Statistical Packages for the Social Science (SPSS) 21 Program. Finally, the interpretation and conclusion were drawn altogether with suggestions.

Data Analysis and Findings

The main aim of the study is to study Grade 10 and Grade 11 students’ social skills and social interaction anxiety in Aunglan Township and to investigate social skills and social interaction anxiety of students by gender, grade and school locality. By using the descriptive statistics, independent sample *t* test, One-way ANOVA was conducted in social skills and social interaction anxiety of high school students. Finally, Pearson Moment Correlation was also conducted to find out the relationship between social skills and social interaction anxiety.

4.1 Descriptive Statistics for Social Skills of High School Students

Table 4.1 Descriptive Statistics for Social Skills of High School Students

Variables	No. of items	Minimum	Maximum	Mean	Mean %	SD
Cooperation	10	12	49	38.32	76.64%	6.879
Assertion	9	13	45	29.09	64.64%	5.714
Empathy	10	14	50	39.54	79.08%	7.757
Self-control	10	13	50	37.09	74.18%	7.671
Overall Social Skills	39	65	189	149.98	76.91%	25.814

Table 4.1 indicated that the mean score and standard deviation for the whole scale were 149.98 and 25.814 respectively. According to social skills questionnaire, the possible score range is 39-195. The observed mean score is 149.98. Observed mean score is higher portion. Therefore, most of the high school students had higher social skills.

According to the above table, among the subscales of social skills, the mean percentage of empathy is (79.08 %) and highest in all subscales. Therefore, the students show highest ability in empathy among subscales of social skills. The mean percentage of assertion subscale is (64.64%) and it is the lowest in all subscales. Finally, the student's overall social skills had a mean percentage of (76.91 %). So, most of the students had high social skills.

4.2 Comparison for Social Skills of High School Students by Gender

Table 4.2 Mean Comparison and the Result of Independent Samples *t* Test for Social Skills of High School Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Overall Social Skills	Male	449	139.59	27.357	-5.136***	898	.000
	Female	451	148.36	23.404			

According to the Table 4.2, the result showed that there was a significant difference between male and female students in overall social skills. The mean score of female students had higher social skills than those of the male students. So, it can be said that female students had higher social skills than those of male students in Aunglan Township.

Table 4.3 Mean Comparisons and the Results of Independent Samples *t* Test on Subscales of Social Skills of High School Students by Gender

Variables	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Cooperation	Male	449	37.04	7.427	-5.691***	898	.000	-2.565
	Female	451	39.60	6.030				
Assertion	Male	449	28.18	5.528	-4.450***	898	.000	-1.678
	Female	451	29.86	5.780				
Empathy	Male	449	38.45	8.336	-4.244***	898	.000	-2.175
	Female	451	40.63	6.976				
Self-control	Male	449	35.88	8.031	-4.766***	898	.000	-2.409
	Female	451	38.29	7.103				

Note: *** The mean difference is significant at 0.001 level.

Table 4.3 showed that there were significant differences in all subscales of social skills at 0.001 level. Therefore, female students had higher social skills than those of male students in all sub-scales.

4.3 Comparison for Social Skills of High School Students by Grade

Table 4.4 Mean Comparison and the Result of Independent Samples *t* Test for Social Skills of High School Students by Grade

Variable	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Overall Social Skills	Grade 10	445	143.32	24.678	-0.759	898	-1.307
	Grade 11	455	144.63	26.890			

According to the Table 4.4, the result of *t* test showed that there were no significant differences between Grade 10 and Grade 11 students in overall social skills.

Table 4.5 Mean Comparisons and the Result of Independent Samples *t* Test on Subscales of Social Skills of High School Students by Grade

Variables	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Cooperation	Grade 10	445	38.41	6.857	0.398	898	.690	0.183
	Grade 11	455	38.23	6.899				
Assertion	Grade 10	445	29.16	4.895	-4.546	898	.207	-1.709
	Grade 11	455	29.87	6.308				
Empathy	Grade 10	445	39.22	7.565	-1.258	898	.209	-0.650
	Grade 11	455	39.87	7.936				
Self-control	Grade 10	445	37.47	7.421	1.465	898	.143	0.749
	Grade 11	455	36.72	7.899				

Note: There were no significant differences.

According to Table 4.5 showed that there were no significant differences in all subscales of social skills between Grade 10 and Grade 11 students.

4.4 Comparison for Social Skills of High School Students by School Locality

Table 4.6 Mean Comparison for Social Skills of High School Students by School Locality

Variable	Schools	N	Mean	SD
Overall Social Skills	Rural	292	135.89	34.745
	Sub-urban	307	146.67	22.131
	Urban	301	149.09	15.132

To explore whether the differences of social skills by school locality were significant or not, one way analysis of variance (ANOVA) was conducted.

Table 4.7 Results of ANOVA for Social Skills of High School Students by School Locality

Variables		Sum of Square	<i>df</i>	Mean Square	<i>F</i>	<i>P</i>
Overall Social Skills	Between groups	29180.069	2	14590.034	22.965***	.000
	Within groups	569881.714	897	635.320		
	Total	599061.782	899			

Note: *** The mean difference is significant at 0.001level.

Table 4.7 indicated that a statistically significant difference was found among three groups of school locality on overall social skills at 0.001 level.

To investigate more specifically how students' social skills differed in relation to school locality, Games-Howell was computed. The results were shown in the following Table 4.8.

Table 4.8 The Results of Games-Howell for Social Skills of High School Students by School Locality

Variables	(I) School	(J) School	M D(I-J)	<i>p</i>
Overall Social Skills	Rural	Sub-urban	-10.780***	0.000
		Urban	-13.196***	0.000

Note: ***The mean difference is significant at 0.001 level.

Games-Howell result showed that there were significant differences by school locality. The mean score of students in sub-urban and urban schools had higher social skills than that of the rural students. Therefore it can be said that social skills of students in urban and sub-urban schools had higher social skills than those in rural schools.

4.5 Descriptive Statistics for Social Interaction Anxiety of High School Students

Table 4.9 Descriptive Statistics for Social Interaction Anxiety of High School Students

Variable	No. of Item	Minimum	Maximum	Mean	SD
Overall Social Interaction Anxiety	20	30	90	59.58	11.644

Table 4.9 indicated that mean score and standard deviation for the whole sample were 59.58 and 11.644 respectively. According to social interaction anxiety scale, the possible score range is 20-100. The observed mean score is 59.58. The observed mean score is middle portion of score range. Therefore, the high school students in Aunglan Township had moderate social interaction anxiety.

4.6 Comparison for Social Interaction Anxiety of High School Students by Gender

Table 4.10 Mean Comparison and the Result of Independent Samples *t* Test for Social Interaction Anxiety of High School Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Overall Social Interaction Anxiety	Male	449	62.07	11.543	5.053***	898	.000
	Female	451	58.14	11.825			

And the result of *t* test confirmed the assumption that there was a significant difference between male and female students in social interaction anxiety. The male students had higher social interaction anxiety than those of female students. Therefore, male students had higher social interaction anxiety than female students in Aunglan Township.

4.7 Comparison for Social Interaction Anxiety of High School Students by Grade

Table 4.11 Mean Comparison and the Result of Independent Samples *t* Test for Social Interaction Anxiety of High School Students by Grade

Variable	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Overall Social Interaction Anxiety	Grade 10	445	60.83	11.987	1.826	898	0.086
	Grade 11	455	59.39	11.671			

Based on the result of independent samples *t* test, there were no significant differences between Grade 10 and Grade 11 students in social interaction anxiety.

4.8 Comparison for Social Interaction Anxiety of High School Students by School Locality

Table 4.12 Mean Comparison for Social Interaction Anxiety of High School Students by School Locality

Variable	Schools	N	Mean	SD
Overall Social Interaction Anxiety	Rural	292	62.99	14.523
	Sub-urban	307	58.39	10.602
	Urban	301	59.04	9.457

To explore whether the differences of social interaction anxiety by school locality were significant or not, one way analysis of variance (ANOVA) was conducted. The results of the analysis were displayed in Table 4.13.

Table 4.13 Results of ANOVA for Social Interaction Anxiety of High School Students by School Locality

Variables		Sum of Square	df	Mean Square	F	p
Overall Social Interaction Anxiety	Between groups	3665.763	2	1832.881	13.428***	0.000
	Within groups	122435.627	897	136.495		
	Total	126101.390	899			

Note: *** The mean difference is significant at 0.001 level.

To investigate more specifically how students' social interaction anxiety differed in relation to school locality, Games-Howell was computed. The results were shown in the following Table 4.14.

Table 4.14 The Results of Games-Howell for Social Interaction Anxiety of High School Students by School Locality

Variables	(I) School	(J) School	M D(I-J)	p
Overall Social Interaction Anxiety	Rural	Sub-urban	4.596***	0.000
		Urban	3.943***	0.000

Note: ***The mean difference is significant at 0.001 level.

Games-Howell result showed that there was a significant difference by school locality. Therefore it can be said that students in rural school had higher social interaction anxiety than those in urban schools and sub-urban schools.

4.9 The Relationship Between Social Skills and Social Interaction Anxiety of High School Students

Table 4.15 The Correlation Between Social Skills and Social Interaction Anxiety of High School Students

Variable	Social Interaction Anxiety
Social Skills	-0.587***

Note: *** The correlation is significant at the 0.001 level (2-tailed).

The result indicated that the correlation matrix of students' social skills and social interaction anxiety was ($r = -0.587$) at 0.001 level. So, it was believed that there was a negative relationship between social skills and social interaction anxiety.

Table 4.16 Intercorrelation for Subscales of Social Skills and Social Interaction Anxiety of High School Students

Variables	Cooperation	Assertion	Empathy	Self-control
Cooperation	-	-	-	-
Assertion	.667***	-	-	-
Empathy	.797***	.653***	-	-
Self-control	.768***	.608***	.777***	-
Social Interaction Anxiety	-.538***	-.559***	-.519***	-.493***

Note: *** Correlation is significant at the 0.001 level (2-tailed).

According to the results, Table 4.16 showed that the intercorrelation between subscales of social skills and social interaction anxiety of high school students from Aunglan Township. It indicated that the subscales of social skills were significantly and negatively correlated with social interaction anxiety of high school students. So, it can be concluded that increase in social skills indicates that decrease in social interaction anxiety.

Moreover it can also be seen that all subscales of social skills are negatively correlated with total social interaction anxiety. Therefore, it can be said that if the students' had high social skills then they would experience less social anxiety.

Conclusion

First, based on the finding in this research, high school students in Aunglan Township have high social skills and moderate social interaction anxiety.

The result of independent sample *t* test revealed that there were significant differences in overall social skills by gender and female students had more social skills than those of male students in overall social skills, in cooperation, in assertion, in empathy and in self-control. This finding was consistent with the research of Gresham and Elliott (1990) and Dickerson (1995). This may be due to the fact that females perceive social relationships, emotions, and trust as more valuable than males do (Skara, Pokhrel, Weiner, Sun, Dent, & Sussman, 2008).

Then, the result of independent sample *t* test revealed that the social skills of Grade 10 students were no significant differences in Grade 10 and Grade 11 students. This result was consistent with the research of (Ahmad Ali Eslami, 2014 & Z.A.P. Del Prette & A. Del Prette, 2009). This may be due to the fact that Grade 10 and Grade 11 students were slightly differ from age.

According to the ANOVA results for social skills by school locality, there was a significant difference among the groups of school locality. The results of Games-Howell showed that there were significant differences between rural schools and sub-urban and urban groups. It can be concluded that students in urban and sub-urban schools had higher social skills than those of rural schools. This result is consistent with Rashid, (2010) who said that students in urban schools had higher social skills than students in rural schools. This may be due to the fact that urban and sub-urban areas have more opportunities to participate in group activities and practical work, to communicate with others, and participate in school ceremonies than students in rural area.

The result of independent sample *t* test revealed that the social interaction anxiety of female students was significantly less than male students. Male students are communication apprehension and fear of negative evaluation (MacIntyre & Gardner, 1991). Fear of negative can cause the social anxiety (Weeks, Jakatdar and Heimberg, 2010). This result was also consistent with the results of Zeidner (1989) and this study revealed that the male students' social

interaction anxiety is higher than female students. This may probably be that most male students keep their feeling in mind and they do not want to show their feelings. Most male students did not bargain as the way the female did.

The result of independent sample *t* test revealed that there were no significant differences by grade. This result is also consistent with the results of (Teachman & Allen, 2007). This may be due to the fact that Grade 10 and Grade 11 students were slightly differ from age.

Then the ANOVA results for social interaction anxiety by school locality showed that there were significant differences among groups of social interaction anxiety. According to the Games-Howell's results, it was found that there were significant differences between rural school students and sub-urban and urban school groups. It can be concluded that students in rural schools had higher social interaction anxiety than those of urban and sub-urban schools. This may be due to the fact that rural schools students may encounter poor social settings and fewer opportunities to participate in activities such as teamwork, sports and clubs than urban and sub-urban schools students.

The study found that social skills had a significant negative correlation with the social interaction anxiety. It is consistent with the previous research conducted by Rapee & Spence (2004), social interaction anxiety may be linked with poorer social cognitive functioning, such as understanding the mental states of others in social interactions or assuming negative outcomes of social behaviors.

Improving social skills of students is one way to reduce social interaction anxiety. Social skill is the ability to inspire, influence and develop others while managing conflict. Human beings are sociable creatures and thus one should develop many ways to communicate our messages, thoughts and feeling with others. Also good social skills are an important part of building rich friendships, enjoying oneself in public and succeeding in career. Some of the many ways to improve social skills might be (1) developing open, honest and trusting relationships, (2) showing respect of self and also to others, (3) learning to listen with genuine interest and (4) trying to be good team member and encouraging collaboration.

Based on findings of this research, some suggestions are as follows. Teachers, parents and administrators should;

- cultivate the students to perceive social relationships, emotion and trusts as more valuable
- foster the students more submissive, kind, gentle, responsive and empathic feeling to others
- avoid doing things with others that may get the children in trouble with adults
- foster the students to obey the teacher's and parents' disciplines
- help the student join school clubs with support as needed to participate

Beside improving social skills of students, for reducing the social interaction anxiety of students, teachers, parents and counselors should do the following suggestions;

- Practice deep breathing everyday
- Think a positive feeling about themselves in every day
- Create an exposure hierarchy and practice self-reward
- Challenge anxious thought and believe themselves

- Just focus on conversation, not how people appear
- Create an environment to be brave without helping their parents
- Don't think too much about how others students

Teacher or parents will help students to reduce their social interaction anxiety by doing the above things. The students may reduce their social interaction anxiety and get success in their social interaction.

Acknowledgements

First of all, we like to acknowledge our indebtedness to Dr. Saw Pyone Naing (Rector) and Dr. Myat Myat Thaw (Pro-Rector) in Sagaing University of Education for their excellent arrangements and permissions to do this research.

Our special gratitude expands to Dr. Khin Hnin Nwe (Professor & Head, Department of Education Psychology, Sagaing University of Education) for his precious advice and kind support on this paper.

We would like to include a special thanks to Dr. Min Than (Professor & Head, Department of English, Sagaing University of Education) and we really appreciate her insightful comments and valuable editing towards this paper.

References

- Aderi, M., Jdaitawi, M., Ishak, N. A., & Jdaitawi, F. (2013). The influence of demographic variables on university students' adjustment in North Jordan. *International Education Studies*, 6(2), 172-178.
- Akelaitis, A.V. (2015). *European Journal of Contemporary Education*, 2015, Vol.(14), Is. 4.
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders: Fourth edition*. American Psychiatric Association: Washington, DC.
- American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. text revision). Washington, DC: American Psychiatric Association.
- Arjanggi, R., & Kusumaningsih, L. S. (2016a). The Correlation between Social Anxiety and Academic Adjustment among freshmen. *Procedia-Social and Behavioral Sciences* 219(3rd Global Conference on Business and Social Sciences (GCBSS-2016) on "Contemporary Issues in Management and Social Sciences Research", Kuala Lumpur, Malaysia), 104-107. doi:10.1016/j.sbspro.2016.04.049
- Arjanggi, R., & Kusumaningsih, S. (2016b). College adjustment of first year students: the role of social anxiety. *Journal of Educational, Health, and Community Psychology*, 5(1), 30-39.
- Brodeski, J., Hembrought, M. (2007). Improving Social Skills in Young Children. *An Action Research Project*. Chicago, Illinois: Saint Xavier University.
- Caballo, V. E. (2003). *Manual de Avaliação e Treinamento das Habilidades Sociais*. São Paulo: Santos. (Original work published in 1986).
- Cacioppo, J. T., Hawkley, L. C., & Thisted, R. A. (2010). Perceived social isolation makes me sad: 5-year cross-lagged analyses of loneliness and depressive symptomatology in the Chicago health, aging, and social relations study. *Psychology and Aging*, 25(2), 453-463.
- Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. Heimberg, M. R. Liebowitz, D. A. Hope & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 69-93). New York: Guilford Press.
- Colombero, G. (2004). *Nuo žodžių į dialogą. Psichologiniai asmenų tarpusavio komunikacijos aspektai*. Vilnius: Katalikų pasaulio leidiniai.
- Goffman, E. (1959). *Presentation of Self in Everyday Life*. Garden City, N.J.: Doubleday Press.
- Irkörücü Küçük, (2018). Social Interaction Anxiety Among University Students: The Role of Risk and Protective factors. The Graduate School of Social Sciences of Middle East Technical University.
- Kashdan, T. B. (2002). Social anxiety dimensions, neuroticism, and the contours of positive psychological functioning. *Cognitive Therapy and Research*, 26(6), 789-810.

- Luo, Y., Hawkley, L. C., Waite, L. J., & Cacioppo, J. T. (2012). Loneliness, health, and mortality in old age: a national longitudinal study. *Social Science & Medicine*, 74(6), 907-914.
- James, B. T. (2002). *When The Brain Can't Hear*: NY, Atria Books.
- Jdaitawi, M., Ishak, N., Taamneh, M., Ghataibeh, M., & Rababah, O. (2011). The effectiveness of emotional intelligence training program on social and academic adjustment among first year university students. *International Journal of Business and Social Science*, 2(24), 251-258.
- Joas, H. (1996). *The Creativity of Action*. Chicago, Il.: University of Chicago Press.
- Johnson, D., R., & Johnson, R. (1990). Social skills for successful group work. *Educational Leadership*, 47(4), 29. Retrieved November 25, 2016 from <https://search.ebscohost.com.ezproxy2.dra.ke.brockport.edu:2048>
- Mead, G.H. (1934). *Mind, Self, and Society*. Chicago, Il. university of Chicago Press.
- Murphy, P. (May 2005). *Social Skills Training can Positively Impact Your Life*.
- Nordstrom, A. H., Goguen, L. M. S., & Hiester, M. (2014). The effect of social anxiety and self-esteem on college adjustment, academics, and retention. *Journal of College Counseling*, 17(4), 48-64. doi:10.1002/j.2161-1882.2014.00047.x
- Osit, M. (2008). *Generation Text: Raising Well-Adjusted Kids in an Age of Instant Everything*. New York: AMACOM.
- Rapee, R. M., & Heimberg, R. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behavior Research & Therapy*, 35, 741-756.
- Spielberger, C. D. 1972. Conceptual and methodological issues in anxiety research. In: C. D. Spielberger (Ed.), *Anxiety: Current Trend in Theory and Research* (Vol. 2), pp. 3-19. New York: Academic Press.
- Wilson, R. S., Krueger, K. R., Arnold, S. E., Schneider, J. A., Kelly, J. F., Barnes, L. L., Bennett, D. A. (2007). Loneliness and risk of Alzheimer disease. *Archives of General Psychiatry*, 64 (2), 234-240.

AUTOMATIC NEGATIVE THOUGHTS, UNCONDITIONAL SELF-ACCEPTANCE AND ANXIETY OF UNIVERSITY STUDENTS IN SAGAING TOWNSHIP

Ei Thinzar Kyaw¹, Ohnmar Tin²

Abstract

The main aim of this study is to investigate automatic negative thoughts, unconditional self-acceptance and anxiety of university students in Sagaing Township. A total of 1033 first year and fourth year students (493 males, 540 females) from universities in Sagaing Township were randomly selected. Automatic Thoughts Questionnaire (Hollon & Kendall, 1980), Unconditional Self-acceptance Questionnaire (Chamberlain & Haaga, 2001) and Taylor Manifest Anxiety Scale (Taylor, 1953) were used respectively to measure automatic negative thoughts, unconditional self-acceptance and anxiety of university students in Sagaing Township. In addition, it was found statistically significant positive correlation between automatic negative thoughts and anxiety ($r=.480$, $p= 0.001$). It was also found statistically significant negative correlation between unconditional self-acceptance and anxiety ($r= -.378$, $p= 0.001$). According to multiple regression analysis, the result showed that automatic negative thought was a significant positive predictor of anxiety and unconditional self-acceptance was a significant negative predictor of anxiety.

Keywords: Automatic Negative Thoughts, Unconditional Self-acceptance, Anxiety

Introduction

Anxiety is a psychological and physiological state characterized by physical, emotional, cognitive, and behavioural components. Anxiety means troubles; in either presence or absence of psychological stress, anxiety can create a feeling of fear, worry, uneasiness, and dread (Bouras, & Holt, 2007).

Anxiety is a common phenomenon of everyday life. Anxiety begins in at an early age and is often recurring. Throughout human's life, people are often anxious about those aspects of their lives that they care most about: their health; their ability to clothe and feed themselves and their family; and their ability to be connected and valued by others. Moreover, because of stressful life events such as work stress or job change, change in living arrangements, family and relationship problems, death or loss of a loved one, etc., anxious conditions may also develop. The World Health Organization (WHO) reported in 2001 that about 450 million people worldwide suffer from some form of mental disorder such as anxiety and depression, and one in four people meet criteria at some point in their life.

Although anxiety can affect every age of a person, it is the most common mental health concern in university students (Center for Collegiate Mental Health [CCMH], 2017) and is becoming increasingly more prevalent (Kitzrow, 2003). In 2015, an unprecedented 12.4% of university students were diagnosed or received treatment for an anxiety disorder (Samuolis, Barcellos, LaFlam, Belson, & Berard, 2015). Anxiety-related concerns without a diagnosis or treatment are even more common: A large portion of university students reported feeling overwhelmed (84.3%), feeling exhausted (79.1%), feeling hopeless (46.5%), or having experienced overwhelming anxiety (51.3%) while in school (Samuolis et al., 2015). In university student mental health survey, students reported high levels of feeling of anxiety, with 42.8% reporting that they were often or always worried, and only 12.3% reporting that they were never or rarely worried, 87.7% reported that they had struggle with feelings of anxiety, an increase of 18.7% from 2017.

¹ Senior Teacher, No.2 Basic Education High School, Amarapura Township, Mandalay Region

² Lecturer, Department of Educational Psychology, Sagaing University of Education

This is because; university is a stressful time in a young adult's life and university environment is recognized as stressful and quite often has a negative effect on students' life including physical and mental health, academic performance and psychosocial well-being (Spielberger, 1966). Next, demands related to student role, family and relationships, and finances are of concern for university students (Arthur & Hiebert, 1996). Besides, anxiety of university students may be because of university-specific factors such as amount of work required for their course, academic performance, finance-related issue like student loans and balancing jobs with their studies, struggling to fit into new social groups, and loneliness. Consequently, with more students entering university and competing for a limited number of jobs (Uno, Mortimer, Kim, & Vuolo, 2010), many university students feel more anxious to set themselves apart from their peers by excelling academically.

By studying the facts mentioned above, it can be known that anxiety occurs in every university students all over the world. So it makes my curiosity aroused to study anxiety of university students in Myanmar.

In Myanmar these days, stress can occur at home, at the workplace, in fact, anywhere. Stress occurs for many reasons; traffic, power cuts, work deadlines and financial issues. For those struggling to earn a living, stress is all too common a result. Yet stress also exists due to political and social circumstances. Living in an unjust society is a cause of stress. There are physical and mental issues relating to the side effects of stress. According to the American Psychological Association, stress that is left unchecked has a number of worrisome related side effects including anxiety and depression. So, everyone in Myanmar can experience in every aspect of life.

Among them, half of adults in Myanmar have high cholesterol, 12% have diabetes and 15% are smokers and the rate of adults' smoking level increase day by day in Myanmar according to Mental Health Foundation because anxiety is associated with unhealthy lifestyle choices such as smoking, drinking too much alcohol and a poor diet. Consequently, the rate of anxiety level may probably rise in Myanmar.

In research of Social Network Addiction related to Anxiety among Myanmar University students, it was found that 27.5 % of students addicted to Social Network and 36.5% suffered from anxiety. It was also found significant association between social network addiction and anxiety among Myanmar university students (Win K et al., 2017). On these days, the rapid rate of social network using alerts the probability of enhancement in anxiety among Myanmar university student.

What's more, it is essential for Myanmar University students to graduate with excellent education levels in order to get a good job and high income in Myanmar. Such a few solid grantees to get a job after graduating may also impact the prevalence of anxiety among Myanmar University students.

By investigating these facts and research, it is sure that most of university student in Myanmar can suffer from anxiety; and numerous anxiety studies should be conducted on among Myanmar University students. So Myanmar University students were chosen as the target population of the present study.

Sometimes anxiety is good for students but sometime bad. Some degree of anxiety can be helpful for high academic achievement (Spielberger, 1966). However, too much anxiety may hinder academic performance a mechanism most probably mediated through decreased capacity in central executive processes (Owens, Stevenson, Hadwin, & Norgate, 2012) and consequently hamper young people's academic achievements (Reilly & Lewis, 1991).

When someone is under anxiety, its symptoms may range from sleep disturbance, fatigue, nausea, headaches, and unexplained illness to inappropriate or disproportionate responses causing persistent and intrusive symptoms associated with anxiety disorders, such as panic, phobias and obsessive behaviours, which often have a debilitating effect on their lives.

So, nobody can deny the adverse impact of anxiety on academic and other factors among Myanmar University students. But there is a little research concerning with the factors causing anxiety of university students in Myanmar. Therefore, factors that are causing the anxiety must be needed to discover in order that Myanmar University students avoid the adverse impact of anxiety.

There have already been studies conducted on factors influencing anxiety of university students. These factors are academic, environmental, financial, etc. For example, financial stress is associated with decreases in both mental and physical health, as well as increases in anxiety (Archuleta, Dale, & Spann, 2013; Hodgson & Simoni, 1995; Roberts, Golding, & Towell, 2000). As an academic factor, it is when anxiety is in its severe form that some students experience genuine problem in academics. Their minds go blank, they experience the shakes, their hands go numb and they suffer from a number of sudden disabilities associated with anxiety during examination. Next, anxiety conditions may develop because of stressful life events such as work stress or job change, change in living arrangements, family and relationship problems, death or loss of a loved one, etc. Work issues, such as long hours, were identified by just over a quarter of people (27%) as a cause of anxiety and 17% said that the fear of losing their job or unemployment caused them to feel anxious.

Furthermore, anxiety is also linked and perpetuated by the person's own pessimistic outcome expectancy and how they cope with feedback negativity. In this study, automatic negative thoughts are chosen as a risk factor of anxiety.

In general, automatic negative thoughts are thoughts that are negative and random in nature in reference to one's self. Next, automatic thoughts are the 'stream of thoughts, ideas and images which constantly accompany an individual as he or she proceeds through daily life' (Curwen B, Palmer S, & Ruddell P, 2000). They are also regarded as automatic because they can be initiated by both conscious and unconscious thoughts, and the cognitive processes that follow do not require conscious effort (Ingram R, Kendall P, Siegle G, & Guarino J, 1995).

The reasons why automatic negative thoughts are chosen are as follows. First of all, negative thinking has been found to play a pivotal role in psychopathological states such as depression and anxiety (Curwen B, Palmer S, & Ruddell P, 2000). Indeed, studies have found a connection between the presence of negative thoughts and anxiety in clinically anxious adults (Beazley M, Glass C, & Arnkoff D, 2001) and children (Kendall P, & Chansky T, 1991).

In addition to thoughts and beliefs, negative evaluations could also lead to poor coping strategies and low mood because self-evaluation is a crucial part of our metacognitive processes, and can affect our mood and the way we interpret events. For instance, if we are to evaluate ourselves in a positive light we are more likely to be happy and feel competent.

However, not only negative automatic thoughts certainly can cause anxiety but also anxiety can cause these negative thoughts. Consequently, anxiety causes people to assume the worst. There are many different types of anxiety producing thoughts, and it is helpful to be aware of some of the kinds of thoughts that many people with anxiety experience.

- Overestimating the likelihood of negative events happening
- Catastrophizing
- Beliefs that anxiety itself is dangerous

- Belief that one cannot tolerate discomfort, pain, or negative events
- Positive beliefs about worry
- Negative thoughts about ourselves, others, the world

Negative self-thinking can be differentiated concerning with the ages. Verplanken and colleagues (2007) used a student sample and found that negative self-thinking a good predictor of anxious and depressive symptoms. Therefore, in order to decrease the level of anxiety, automatic negative thoughts must disappear.

As a protective factor, unconditional self-acceptance is chosen in order to decrease the level of anxiety in this study.

In Rational Emotive Behaviour Therapy (REBT), self-acceptance means accepting oneself unconditionally regardless of whether one behaves competently or correctly and whether others are likely to express approval or respect (Dryden & Neenan, 2004; Ellis, 1994). There are two types of self-acceptance: conditional and unconditional self-acceptance.

Rogers (1957) described how children's developing sense of self-acceptance is determined by the extent to which the love and approval received from their parents is conditional or unconditional. When children are raised where love is conditional upon their living up to parental expectations, they are more likely to judge themselves in terms of conditions of worth on which their self-valuation is contingent. That is, they are more likely to be self-evaluators basing their self-worth on the opinions of others or their achievements in different domains.

In contrast, Ellis (1962) has argued that the tendency towards negative self-evaluation and depreciation has less to do with the environment children grow up in and more to do with the strength of their biological instinct towards irrationality. Unconditional self-acceptance means that "the individual fully and unconditionally accepts himself whether or not he behaves intelligently, correctly, or competently and whether or not other people approve, respect, or love him" (Ellis, 1977).

According to the theory of Chamberlain and Haaga (2001), unconditional self-acceptance was positively associated with life satisfaction and happiness, and negatively associated with anxiety, depression and depression-proneness. However, the relationship between unconditional self-acceptance and depression was weaker than the relation of unconditional self-acceptance with anxiety.

Also in the study of unconditional self-acceptance and mental health in ego-provoking experimental context by Stanislava Popov and Miklos Biro in 2016, the ones with low unconditional self-acceptance who were not satisfied with feedback were more anxious and more depressive than the ones with higher unconditional self-acceptance, both after positive and neutral feedback. The ones with lower unconditional self-acceptance, but satisfied with negative feedback, are more anxious than the ones with higher unconditional self-acceptance.

Hence, unconditional self-acceptance is needed to reduce the level of anxiety. The individual's judgment of his own value or worth has such an impact on his thoughts, emotions and actions. For instance, when people do not value themselves very highly, innumerable problems arise.

Here, Ellis proposed how to help people feel worthwhile: (a) define yourself as a worthwhile person because you exist, because you are alive, and because of your individual character strengths and abilities that make up your uniqueness, accept yourself whether or not you achieve or people approve of you, accept yourself with your errors and do your best to

correct your past behaviour and (b) don't give any kind of global, generalized rating to yourself; you only evaluate what you think, feel, and do.

Besides by following the rules of Rational Emotive Behaviour Therapy (REBT), created by Dr. Albert Ellis, anxiety can be stopped in its tracks if people will admit this important fact: Things and people do not make anxious to everybody. People do. Their unrealistic expectations produce their needless anxiety. Yet not all anxiety is needless because healthy anxiety can ward off dangers and make them aware of negative things that they can change, but unhealthy anxiety inhibits people from enjoying everyday activities and relationship, causes them to perform poorly, and blocks their creativity.

According to the facts mentioned above, it is vital to achieve unconditional self-acceptance and reduce automatic negative thoughts so that anxiety will fade away gradually and the lives of people will be enjoyable and full of satisfaction.

Although automatic negative thoughts and unconditional self-acceptance are essential factors to decrease the rate of anxiety, the research on automatic negative thoughts, unconditional self-acceptance and anxiety is rare.

For this reason, this study must be conducted to examine how automatic negative thoughts and unconditional self-acceptance influence on anxiety, focusing on Myanmar university students who experience anxiety the most.

Aim of the Study

The main aim of the study was to study automatic negative thoughts, unconditional self-acceptance and anxiety of university students in Sagaing Township. The specific objectives were

- To examine the relationship between automatic negative thoughts and anxiety university students in Sagaing Township,
- To investigate the relationship between unconditional self-acceptance and anxiety of university students in Sagaing Township and
- To examine the effects of automatic negative thoughts and unconditional self-acceptance on anxiety of university students in Sagaing Township.

Definitions of Key Terms

Automatic Negative Thoughts: Automatic negative thoughts are essential to depression, in the way that they help to maintain the depressed humor in individuals (Moore & Garland, 2003).

Unconditional Self-Acceptance: Unconditional self-acceptance is defined as fully and unconditionally accepting themselves, regardless of whether they behave correctly, intelligently or competently, and regardless of whether people respect, accept or love them (Ellis, 1977).

Anxiety: It is an unpleasant, diffuse, uncanny, uneasy, apprehensive feeling of helplessness and of coming apart inside. It involves such physiological and behavioural signs as rapid respiration and heart rate, trembling, sweating, and pallor (Arndt, 1974).

Method and Procedure

Research Design

In this study, quantitative approach, descriptive research design and questionnaire survey method were used.

Sampling

By using simple random sampling method, the participants for the present study were first year and fourth year students who were randomly selected from Universities in Sagaing Township. All of the participants involved in this study were 1033 students (493 males and 540 females) in (2018-2019) academic year.

Instrumentation

To study automatic negative thoughts, unconditional self-acceptance and anxiety of university students, three instruments were used.

The first instrument was the uni-dimensional Automatic Thoughts Questionnaire (ATQ) developed by Hollon and Kendall (1980) to measure the automatic negative thoughts. In this questionnaire, the total items used in the present study were 30 items examined by five-point Likert type (1= Not at all, 2= Sometimes, 3= Moderately often, 4= Often, and 5= All the time).

The second instrument, Unconditional Self-acceptance Questionnaire (USAQ) was used to measure unconditional self-acceptance of university students. It was developed by Chamberlain and Haaga (2001). It is a uni-dimensional scale. The total number of items used in this study were 20 items and all are five-point Likert type (1=Almost always untrue, 2=Usually untrue, 3=Equally often true and untrue, 4= Usually true and 5=Almost always true). Among 20 items, 12 items (Item No. 1,4,6,7,8,9,10,13,14,15,16,19) were negative statements and they are scored reversely.

The third instrument is the Taylor Manifest Anxiety Scale (TMAS) developed by Taylor, 1953. It measures anxiety scale by single factor scale. In this questionnaire, 38 items were used to measure anxiety scale of university students and it is a forced choice dichotomous scale (1=True, and 2=False).

The items were translated to Myanmar version. Experts from the field of Educational Psychology in Universities of Education were requested to review of items for face and content validity. The necessary changes were done according to their suggestions. Moreover, the inventory was also designed to ask the participants' demographic factors in order to obtain specific information about the students concerning gender, grade, and university. And then, in order to determine the reliability of the instruments, pilot testing was conducted with 200 students in Sagaing University of Education. The internal consistencies were (.891) for Automatic Thoughts Questionnaire (ATQ), (.689) for Unconditional Self-acceptance Questionnaire (USAQ) and (.760) for Taylor Manifest Anxiety Scale (TMAS).

Findings

Relationship between Automatic Negative Thoughts and Anxiety of University Students

Firstly, the inter-correlation for automatic negative thoughts and anxiety of university students was shown in Table 1.

Table 1 Inter-correlation for Automatic Negative Thoughts and Anxiety

Variables	Anxiety
Automatic Negative Thoughts	.480***

*** Correlation is significant at the 0.001 level.

According to the result, it was found statistically significant positive correlation between automatic negative thoughts and anxiety ($r = .480$, $p = 0.001$). So it can be concluded that the more the automatic negative thoughts university students possessed, the higher the level of anxiety

they had. Therefore, it can be concluded that automatic negative thoughts was significantly correlated with anxiety.

Relationship between Unconditional Self-acceptance and Anxiety of University Students

Firstly, the inter-correlations for unconditional self-acceptance and anxiety of university students were shown in Table 2.

Table 2 Inter-correlations for Unconditional Self-acceptance and Anxiety

Variables	Anxiety
Unconditional Self-acceptance	-.378***

*** Correlation is significant at the 0.001 level.

According to the result, it was found statistically significant negative correlation between unconditional self-acceptance and anxiety ($r = -.378$, $p = 0.001$). So it can be concluded that the higher the level of unconditional self-acceptance university students possessed, the less the level of anxiety they had. Therefore, it can be seen that unconditional self-acceptance was significantly correlated with anxiety.

Automatic Negative Thoughts, Unconditional Self-acceptance and Anxiety of University Students

In this study, the participants' level of automatic negative thoughts was investigated by the use of Automatic Negative Thoughts Questionnaire. In order to know the participants' level of unconditional self-acceptance, Unconditional Self-acceptance Questionnaire was used. The participants' level of anxiety was examined by using The Taylor Manifest Anxiety Scale. The maximum scores, minimum scores, means and standard deviations related to automatic negative thoughts, unconditional self-acceptance and anxiety were presented in Table 3.

Table 3 Descriptive Statistics for Automatic Negative Thoughts, Unconditional Self-acceptance and Anxiety of University Students

Variable	N	Minimum	Maximum	Mean	SD
Automatic Negative Thoughts	1058	30	133	59.79	15.941
Unconditional Self-acceptance	1058	33	95	63.26	8.292
Anxiety	1058	4	43	18.93	5.636

As shown in Table 3, the resulted mean value (59.79) of automatic negative thoughts was greater than the theoretical mean value (90). Therefore, students' level of automatic negative thoughts was satisfactorily low. For unconditional self-acceptance, the resulted mean value (63.26) was greater than the theoretical mean value (60). Therefore, students' level of unconditional self-acceptance was satisfactorily good. For anxiety, the resulted mean value (18.93) was less than the theoretical mean value (19). So it could be concluded that the anxiety of university students was low.

Effect of Unconditional Self-acceptance and Automatic Negative Thoughts on Anxiety of University Students

In general, multiple regression analysis is computed to predict a normal dependent variable from a combination of several scales and independent variables. In this study, a

simultaneous multiple regression was conducted to predict anxiety from unconditional self-acceptance and automatic negative thoughts. The result was presented in Table 4.

Table 4 Simultaneous Multiple Regression Analysis Summary for Unconditional Self-acceptance and Automatic Negative Thoughts Predicting Anxiety

Variables	B	SEB	β
Unconditional Self-acceptance	-.166	.019	-.245***
Automatic Negative Thoughts	.141	.010	.398***
Constant	21.026	1.497	

Note: $R^2 = .282$, $F(2, 1055) = 208.782$, $p < .001$

*** $p < .001$

According to the result, a significant regression equation was found ($F(2, 1055) = 208.782$, $p < .001$) with an R^2 of 0.001. The results showed that unconditional self-acceptance and automatic negative thoughts significantly predict anxiety when two variables are included. The adjusted R squared value was .282. This indicates that 28% of the variance in anxiety was explained by the model. According to Cohen (1988), this is a large effect. The model can be defined by the following equation:

$$\text{Anxiety} = 21.026 - 0.166 \text{ unconditional self-acceptance} + 0.141 \text{ automatic negative thought}$$

It can be predicted that the anxiety of university students will decrease 0.166 units for the increase in one unit of unconditional self-acceptance and the anxiety of university students will increase 0.141 units for the increase in one unit of automatic negative thoughts. Therefore it can be concluded that if the level of unconditional self-acceptance is high and the level of automatic negative thoughts are low, the level of anxiety can decrease for the university students in Sagaing Township.

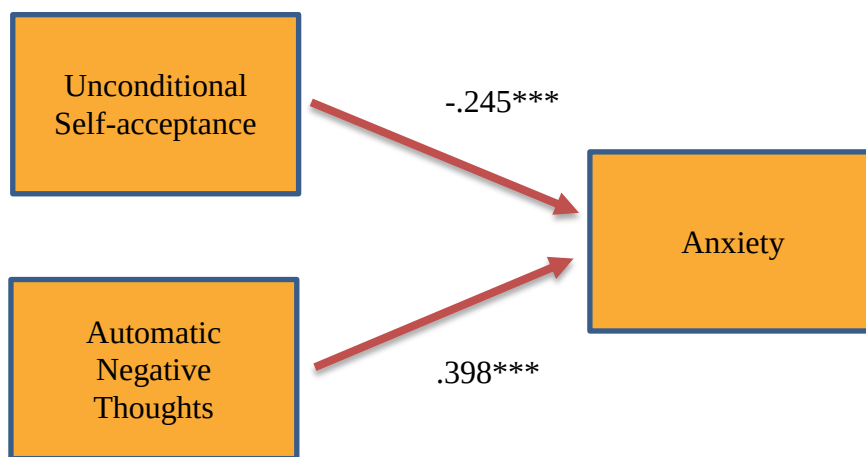


Figure 1 Multiple Regression Model for Predicting Anxiety from Unconditional Self-acceptance and Automatic Negative Thoughts

Path Values are Standardized Regression Coefficients. *** $p < .001$

Conclusions

In order to explore the relationship between automatic negative thoughts and anxiety of university students, the Pearson Product-Moment Correlation was conducted. It was found statistically significant positive correlation between automatic negative thoughts and anxiety.

This finding was consistent with the findings of studies conducted by Schniering and Rapee (2002), Iancu et al. (2015) and Mustafaraj (2015).

Hollon and Kendall (1980) asserted that automatic negative thoughts make ones low self-esteem. And according to Sofia Ntemsia et al. (2017) and Sowislo J. F. et al. (2013), low self-esteem make the anxiety high. So, it can be concluded that an increase in the automatic negative thoughts will yield an increase in the anxiety level of university students.

So, based on findings of the present study to decrease automatic negative thoughts, some suggestions were discussed.

Students should-

- Think a positive thinking about themselves in every morning
- Write about the future goals and plans in a book

Educators and administrators should-

- Write down the students the goals for tomorrow
- Ask students to list their accomplishment

In order to explore the relationship between unconditional self-acceptance and anxiety of university students, the Pearson Product-Moment Correlation was conducted. It was found statistically significant negative correlation between unconditional self-acceptance and anxiety. This finding was consistent with the findings of studies conducted by Popov et al. (2016) and Chamberlain and Haaga (2001).

In 2001, Chamberlain and Haaga pointed that the ones who have unconditional self-acceptance always accept their values, accept themselves who they are and don't compare themselves with the others. And it is generally known that the ones who understand and accept their values and themselves have self-confidence and according to Taylor (1953), self-confidence can reduce anxiety. Moreover, not comparing with others can reduce anxiety (Taylor, 1953). So, it can be concluded that an increase in the unconditional self-acceptance will yield a decrease in the anxiety level of university students.

So, based on findings of the present study to increase unconditional self-acceptance, some suggestions were discussed.

Students should-

- Reframe extreme self-criticism (e.g. I am useless (I don't do everything in the way I would like)
- Learn from both success and failure

Educators and administrators should-

- Write down the students all of their perfection and imperfection, and at a time, ask them to say themselves those statements (e.g. I am strong, I am weak etc. I accept myself as I am)
- Create a supportive environment for students

According to the result, a significant regression equation was found ($F(2, 1055) = 208.782, p < .001$) with an R^2 of 0.001. The results showed that unconditional self-acceptance and automatic negative thoughts significantly predict anxiety when two variables are included. This indicates that 28% of the variance in anxiety was explained by the model. Therefore, both

variables, automatic negative thoughts and unconditional self-acceptance have an effect on anxiety.

Acknowledgement

To commence with, we would like to give the first place that is to be respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) who allow me permission to conduct this research. Next, we would like to thank Dr. Khin Hnin Nwe (Professor, Head of Department of Educational Psychology, Sagaing University of Education) for her invaluable suggestions, encouragement and precious comments for our study.

References

- Arndt, H. (1974). *Theories of personality*. NY: Macmillan.
- Arthur, N. & Heibert, B. (1996). Coping with the transition to post-secondary education. *Canadian Journal of Counselling*, Vol. 32(2).
- Beazley, M. B., Glass, C. R., Chambless, D. L. & Arnkoff, D. B. (2001). Cognitive self-statements in social phobia: a comparison across three types of social situations. *Cognit Ther Res*, Vol. 25.
- Bouras, N., & Holt, G. (2007), *Psychiatric and Behavioural Disorders in Intellectual and Developmental Disabilities*, 2nd Ed, Cambridge University Press, UK.
- Center for Collegiate Mental Health. (2018, January). 2017 Annual Report (Publication No. STA 18-166).
- Chamberlain, J. M., & Haaga, D. A. F. (2001). Unconditional self-acceptance and psychological health. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*, Vol. 19.
- Curwen, B., Palmer, S., Ruddell, P. (2000). *Brief cognitive behaviour therapy*. London: Sage.
- Dryden, W., & Neenan, M. (2004). *Rational Emotive Behavioural Counselling in Action*. SAGE Publications Ltd.
- Ellis, A. (1962). *Reason and emotion in psychotherapy*. New York: Lyle Stewart.
- Ellis, A. (1977). Psychotherapy and the value of a human being. *Handbook of rational-emotive therapy*. New York: Springer.
- Ellis, A. (1994). Post-traumatic stress disorder (PTSD): A rational emotive behavioural theory. *Journal of Rational Emotive and Cognitive Behaviour Therapy*, Vol. 12.
- Hodgson, C. S., & Simoni, J. M. (1995). Graduate student academic and psychological functioning. *Journal of College Student Development*, Vol. 36.
- Hollon, S. D., & Kendall. P. C. (1980). Cognitive self-statements in depression: Development of an Automatic Thoughts Questionnaire. *Cognitive Therapy and Research*, Vol. 4.
- Iancu, I., Bodner, E., Joubran, S., Lupinsky, Y., Barenboim, D. (2015). Negative and Positive Automatic thoughts in Social Anxiety Disorder. *The Israel journal of psychiatry and related sciences*, Vol. 52(2).
- Ingram, R. E., Kendall, P. C., Siegle, G., & Guarino, J. (1995). Psychometric properties of the positive automatic thoughts questionnaire. *Psychol. Assess.*
- Kendall, P. C., & Chansky, T. E. (1991). Considering cognition in anxiety disordered children. *J. Anxiety Disorder*.
- Kitzrow, M. A. (2003) *The Mental Health Needs of Today's College Students: Challenges and Recommendations*. NASPA Journal, Vol.41.
- Moore, R., & Garland, A. (2003). *Cognitive therapy for chronic and persistent depression*. London: John Wiley & Sons.
- Mustafaraj, j. (2015). The Importance of Automatic Thought's Evaluation Through cognitive- Behavioural Therapy in Patients with Generalised Anxiety Disorder. *European Journal of Social Sciences, Education and Research*, Vol. 2.
- Ntemsia, S., Triadafyllidou, S., Papageorgiou, E., & Roussou K. (2017). Self-esteem and anxiety level of students at the Technological Educational Institute of Athens-Planning of Interventions. *Health Science Journal*, Vol. (11).

- Owens, M., Stevenson, J., Hadwin, J. A., & Norgate, R. (2012). Anxiety and depression in academic performance: An exploration of the mediating factors of worry and working memory. *School Psychology International*, Vol. 33.
- Popov, S., & Popov, B. (2011). Unconditional self-acceptance as a correlate of adolescent mental health. Paper presented at the International scientific conference 20th Ramiro and Zoran Bujas' Days. Faculty of Humanities and Social Sciences, University of Zagreb, Croatia.
- Reilly, R. R. & Lewis, E. L. (1991). *Educational psychology*. New York: Lural Tanner Macmillan Company Inc.
- Roberts, R., Golding, J., Towell, T., Reid, S., Woodford, S., Vetere, A., & Weinreb, I. (2000). Mental and physical health in students: The role of economic circumstances. *British Journal of Health Psychology*, Vol. 5.
- Rogers, C. R. (1957). The necessary and sufficient conditions of therapeutic personality change. *Journal of Consulting Psychology*, Vol. 21.
- Samuolis, J., Barcellos, M., LaFlam, J., Belson, D., & Berard, J. (2015). Mental health issues and their relation to identity distress in college students. *Identity: An International Journal of Theory and Research*, Vol. 15.
- Schniering, C. A., & Rapee, R. M. (2002). Development and validation of a measure of children's automatic thoughts: the children's automatic thoughts scale. *Behaviour Research and Therapy*, Vol. 40.
- Sowislo, J. F. & Orth, U. (2013). "Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies." *Psychological Bulletin*, Vol. 139(1).
- Spielberger, C. D. (1966). The effects of anxiety on complex learning and academic achievement. In C. D. Spielberger (Ed.), *Anxiety and behavior*. New York, NY: Academic Press.
- Taylor, J. A. (1953). A personality scale of manifest anxiety. *J. abnorm. soc. Psychol.*, Vol. 48.
- Uno, M., Mortimer, J. T., Kim, M., & Vuolo, M. (2010). "Holding on" or "coming to terms" with educational underachievement: A longitudinal study of ambition and attainment. *New Directions for Child and Adolescent Development*.
- Verplanken, B., Friborg, O., Wang, C. E., Trafimow, D., & Woolf, K. (2007). Mental Habits: Metacognitive Reflection on Negative Self-Thinking. *Journal of Personality and Social Psychology*, Vol. 92(3).
- Win, K., Maung, T., Win, T., Soe, K., & Sein, T. (2017). Social network addiction (SNA) related to anxiety among students at Kyaukse University, Mandalay Region, Myanmar. *South East Asia Journal of Public Health*, 7(1), 23-28.
- World Health Organization (2001). *World Health Report 2001, Mental Health: New Understanding, New Hope*. World Health Organization: Geneva.

SELF-ESTEEM, NARCISSISM AND AGGRESSION OF UNIVERSITY STUDENTS IN SAGAING TOWNSHIP

Khin Khin Khant¹, Aye Aye San²

Abstract

The main aim of this study was to investigate self-esteem, narcissism and aggression of students from universities in Sagaing Township. Next, this study aimed in what way implicit self-esteem and explicit self-esteem predict narcissism and how these three variables predict aggression. A total of 1059 university students (519 males and 540 females) from Universities in Sagaing Township were randomly selected as participants of this study. Name Letter Task (Nuttin, 1985), Rosenberg Self-esteem Scale (Rosenberg, 1965), Narcissistic Personality Inventory (Raskin & Terry, 1988) and Aggression Questionnaire (Buss & Warren, 2000) were used to measure implicit self-esteem, explicit self-esteem, narcissism and aggression of university students in Sagaing Township respectively. As the result of mediation analysis, narcissism mediates the effect of explicit self-esteem on aggression. Next, the result of the moderation analysis showed that implicit self-esteem moderates the relationship between explicit self-esteem and narcissism. And also, the moderated mediation analysis revealed that implicit self-esteem moderates the indirect effect of explicit self-esteem on aggression through narcissism. The low level of implicit self-esteem promotes the degree to which explicit self-esteem is positively connected with narcissism and as a consequence, aggression increases.

Keywords: Narcissism, Implicit Self-esteem, Explicit Self-esteem, Aggression

Introduction

"There is a sufficiency in the world for man's need but not for man's greed", Mahatma Gandhi quoted (as cited in Wiersbe, 2007). Man's greed never stops; people constantly hunger. They are eager to get more and more physical needs; more food, more clothes, more buildings, more technology, more luxury. As for psychological needs, they want more respect, more love, more achievement, more power, and more attention. In today's competitive world, it is more and more difficult for people to catch all of these needs, and as a consequence, they become more selfish.

In psychology, selfishness is viewed as a characteristic of narcissism which involves a sense of entitlement, a lack of empathy, and a need for admiration, as characterizing a personality type. Narcissism is generally defined as excessive or erotic interest in oneself and one's physical appearance (Oxford Pocket Dictionary).

Many studies conducted on that construct: "Narcissism" Dobbert (2007) described that American Psychology Association found that less than 1 per cent of the world population suffered from Narcissistic Personality Disorder (NPD) (as cited in Emily, 2012). But, in the study of Stinson et al. (2008), it was found that 6.2% of people (about 6 times prevalence of 2007 result) were likely to be narcissists. This rapid rate made narcissism to be accepted as a global issue which needs to solve without any more procrastinating. This made my very first impression lead to "Narcissism".

Another factor is the implausible link between Narcissism and Selfie. In today's technology age, according to Deyan (2020), around 3.2 billion people used smart phones in 2019. Moreover, according to the data from world internet usage and population statistics 2019 year-end estimates indicated that 100 percent of the world's population used internet in 2019 (Internet World Stats, 2020).

¹ Senior Teacher, No (2) Basic Education High School Shwebo, Shwebo Township, Sagaing Region

² Lecturer, Department of Educational Psychology, Sagaing University of Education

Accompanying with the increasing number of smart phones and internet users, social media usage has grown exponentially in recent years, especially amongst adolescents and young adults. For many people, social media is an integral part of their daily entertainment and connection to others. With the popularity of photo-sharing on social media and with the developments in mobile technology, there appears a new phenomenon: posting selfies on social media.

Selfie was regarded as "Word of the Year" in the year 2013 by Oxford Dictionaries due to its sudden popularity (Brumfield, 2013). A selfie is defined as "a photograph that one has taken of oneself, typically one taken with a smart phone or webcam and shared via social media" (Kaur, Maheshwari & Sharma, 2018). It can easily be seen that people love to take and post their selfies even they are in critical situation or any annoying surroundings. For example, when someone took place an accident, other people take pictures rather than calling ambulance.

Nevertheless, they are known or unknown, they just want to click and post it. Certain people are more risk taker as to snap more interesting selfies, such as mountain edges, high waterfalls, treetops, railway lines, etc. They are daring to risk their lives even for simple selfie. Research suggested that these behaviors meet the criteria of "narcissism" and in 2014, American Psychiatric Association has classified taking "Selfies" as a sign of narcissism.

Narcissism is one of the most prominent abnormalities in personality characteristics among university students and is among the most difficult to treat and thus in need of greater research (Carroll et al., 1998). Twenge, the leading psychologist in the study of narcissism in the university students in the American population, revealed that the rates of narcissism among the university population are on the rise (Twenge & Foster, 2010). In the meta-analysis study conducted by Twenge et al. (2008), it was found that on average; today's college students are a bit more narcissistic.

This issue may be relevant in Myanmar society today where technology is rapidly advanced. Changes in Myanmar culture could be facilitating a change in personality traits among Myanmar youths. Because, websites such as Facebook, YouTube, Myspace, and Twitter create spaces for individuals to enhance themselves and show themselves to the rest of the country and world (Twenge et al., 2008). As well, selfie taking behaviors, which is regarded as the sign of narcissism, is popular in Myanmar culture, especially in university environment. This may lead to the enhancement of narcissistic personality characteristics among Myanmar university students.

Therefore, like the university students in other countries, the prevalence of narcissistic personality characteristics may increase among Myanmar university students. If the university students, the life blood of the country, would have the higher level of narcissism, this may later threaten the future development of the country. Because of the above all possibilities, the researchers aimed to choose university students as the target population.

Narcissism can also lead to other negative consequences. Though narcissism in small doses can be adaptive and beneficial, narcissism on a larger scale, however, is very disadvantageous for both individual and society. Among various destructive properties of narcissistic personality trait, narcissistic abuse is one of the prominent and the most remarkable impact of narcissism in this century. With the awareness of this dangerous issue, World Narcissistic Abuse Awareness Day occurs on June 1st every year since 2016. This is the global movement about narcissism. This is one form of aggression which is another major interest of this study.

Moreover, there is still another purpose of this study. In order to prevent the destructive effect of narcissism (such as enhancing aggression level), we have an urgent need to find out its

protective factors. To date, there have already been great deals of research which explored factors influencing narcissist personality. Among these related factors, we chose "self-esteem" as another focus of this study.

There are two types of high self-esteem: secure high self-esteem (when self-views are realistic and resistant to threat) and fragile high self-esteem (when self-views are more uncertain and vulnerable to challenge and need constant validation) (Kemmis, 2003).

Among these two types of high self-esteem, narcissism is found to be deep-seated in fragile self-esteem (Broucek, 1991; Emmons, 1987 & Morrison, 1989; cited in Hibbard, 1992). In order to evaluate the fragile self-esteem, researchers should measure implicit self-esteem and explicit self-esteem in their investigation (Lima, 2007). According to Pilch and Hyla (2007), the highest level of narcissism was demonstrated by individuals with high explicit self-esteem (ESE) and low implicit self-esteem (ISE).

Moreover, self-esteem was also found as a better predictor of aggressive behavior (Ostrowsky, 2009; Shaheen & Jahan, 2014).

To sum up, this study aims to study the protective factors (implicit self-esteem and explicit self-esteem) and risk factor (aggression) of narcissism. By doing this study, the researcher can expect that this study will provide knowledge about the factors affecting on narcissism and effect of narcissism on aggression of university students. Then, this knowledge will help in finding the ways that will reduce narcissism and as a result will also decrease aggression which is caused by narcissism.

Aim of the Study

The main aim of the research was to study the moderation effect of implicit self-esteem on the mediation analysis of explicit self-esteem, narcissism and aggression of university students in Sagaing Township.

Hypotheses of the Study

H₁: There is mediation effect of narcissism on the relationship between explicit self-esteem and aggression.

H₂: There is moderation effect of implicit self-esteem on the relationship between explicit self-esteem and narcissism.

H₃: There is moderation effect of implicit self-esteem on the mediation analysis of explicit self-esteem, narcissism and aggression.

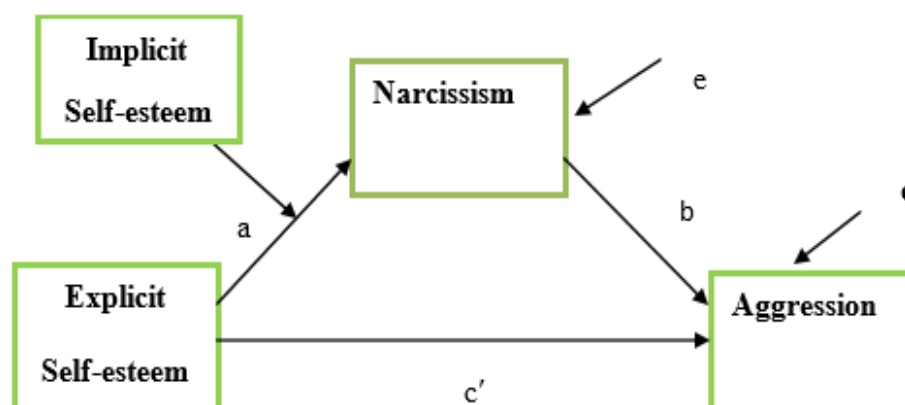


Figure 1 The Proposed Conceptual Model

Definitions of Key Terms

Narcissism: Narcissism is defined by the following clinical criteria; 1) a grandiose sense of self-importance or uniqueness; 2) a preoccupation with fantasies of unlimited success, power, brilliance, beauty, or ideal love; 3) exhibitionism; 4) an inability to tolerate criticism, the indifference of others, or defeat; 5) entitlement or the expectation of special favors without assuming reciprocal responsibilities; 6) interpersonal exploitativeness, relationships that alternate between extremes of over idealization and devaluation; and 7) a lack of empathy. (American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders-3 (DSM-III; American Psychiatric Association, 1980).

Explicit Self-esteem: Self-esteem refers to individual overall positive or negative evaluation to the self (Rosenberg, 1965).

Implicit self-esteem: Implicit self-esteem refers to unconscious evaluations of oneself and objects closely associated with oneself (Greenwald & Banaji, 1995).

Aggression: Aggression is defined as the behavior, the goal-response to which is the injury of the person toward whom it is directed (Dollard et al., 1939; cited in Amad, 2015).

Method and Procedure

Research Design

The design adopted in this study was quantitative research. Descriptive survey method was used in this study.

Sampling

By using simple random sampling technique, the universities and students were selected from Sagaing Township, Sagaing Region. Three universities were chosen, and the students from these universities were randomly selected to participate in this study. A sample of 1059 students (519 male (49.2%) and 540 female (50.9%)) participated in this study.

Instrumentation

The collected data for this study included demographic factors, implicit self-esteem, explicit self-esteem, narcissism and aggression. Students' demographic factors include name and gender.

Name Letter Task (NLT): Name Letter Task which measures implicit self-esteem was developed by Nuttin (1985) from his discovery of the name-letter effect, the phenomenon whereby individuals prefer the letters of their name over non-name letters. Therefore, participants needed to indicate their first and last name initials. And then, participants rated each of the twenty-six English alphabet letters A to Z and five non-letters (e.g., !, ?, \$, &, %) on 7-point rating scales from 1 (I totally dislike it) to 7 (I like it very much). The test-retest reliability for Name Letter Task was 0.518.

Rosenberg Self-esteem Scale: Rosenberg Self-esteem Scale developed by Rosenberg (1965) was used to measure explicit self-esteem. It is a unidimensional scale with 10 items and all are 4-point Likert type (1= Strongly agree, 2= Agree, 3= Disagree, 4= Strongly disagree). Among 10 items, 5 items (2, 5, 6, 8, and 9) were negatively stated and they were scored reversely (4= Strongly disagree, 3= Disagree, 2= Agree, 1= Strongly agree). The internal consistency (Cronbach's Alpha) for Rosenberg Self-esteem Scale was 0.816.

Narcissistic Personality Inventory (NPI): Narcissistic Personality Inventory developed by Raskin and Terry (1988), include 40 items with seven subscales such as authority, self-sufficiency, superiority, exhibitionism, exploitativeness, vanity, and entitlement. These items

are examined by forced choice dichotomous type. The internal consistency (Cronbach's Alpha) for narcissistic personality inventory was 0.706.

Aggression Questionnaire (AQ): Aggression Questionnaire developed by Buss and Warren (2000), include 34 items with five subscales: physical aggression, verbal aggression, anger, hostility and indirect aggression. They are examined by 5-point Likert type (1=Not at all like me, 2= A little like me, 3= Somewhat like me, 4= Very much like me, and 5= Completely like me). The internal consistency (Cronbach's Alpha) for aggression questionnaire was 0.89.

Findings

Mediation Effect of Narcissism on the Relationship between Explicit Self-esteem and Aggression

In this study, the mediation model seeks to explicate the underlying mechanisms of the relationship between explicit self-esteem (independent variable) and aggression (dependent variable) through narcissism (the mediator variable). The direct and indirect effects between variables were presented in Table 1.

Table 1 Summary of Causal Effects for the Mediation Model (Explicit Self-esteem)

Outcomes	Determinant	Causal Effects		
		Direct	Indirect	Total
Narcissism ($R^2=.08$)	Explicit Self-esteem	0.28***	—	0.28***
Aggression ($R^2=.07$)	Explicit Self-esteem	-0.16***	0.07***	-0.09***
	Narcissism	0.26***	—	0.26***

Note: *** denotes significant path at $p < 0.001$.

According to the result of mediation analysis, explicit self-esteem had significant direct effect on aggression, and also significant indirect effect on aggression through narcissism as a mediator. Totally, 14.4 % of the variance in aggression can be explained by the mediation model.

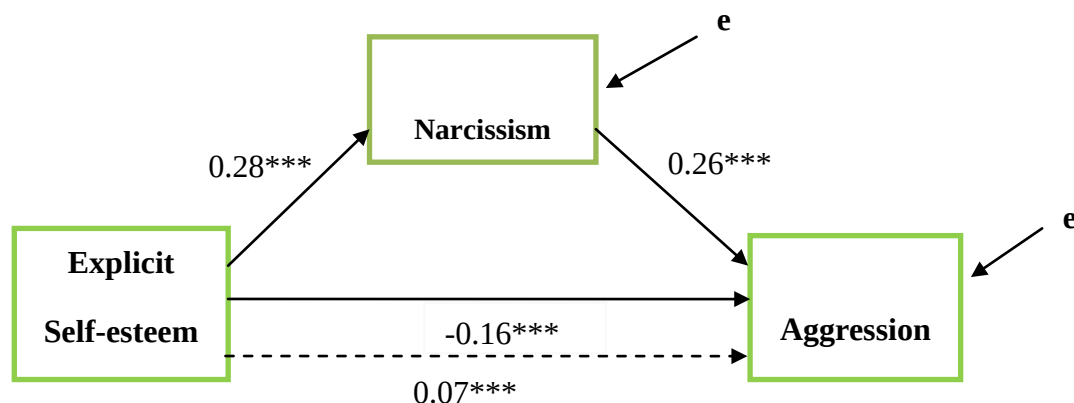


Figure 2 The Mediation Model for Predicting Aggression from Explicit Self-esteem and Narcissism

This result indicated that explicit self-esteem has a negative influence on aggression, however this effect could be suppressed by narcissism because explicit self-esteem leads to greater narcissism, and this variable has a positive effect on aggression. Therefore, although explicit self-esteem only can prevent aggression, it, mediated by narcissism, can contribute to aggression. This result leads to further investigation of how narcissism appears from explicit self-esteem.

The Moderation Effect of Implicit Self-esteem on the Relationship between Explicit Self-esteem and Aggression

To test the hypothesis that narcissism is a function of multiple risk factors, and are more specifically whether implicit self-esteem moderates the relationship between explicit self-esteem and narcissism, a hierarchical multiple regression analysis was conducted.

Table 2 Hierarchical Moderated Multiple Regression Analysis Summary for Model 1 (The Effect of Implicit Self-esteem on the relationship between Explicit Self-esteem and Narcissism)

Model 1	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
	<i>B</i>	Std. Error	Beta		
(Constant)	1.846	1.338		1.379	.168
Explicit Self-esteem	.487	.051	.284	9.632	.000
Implicit Self-esteem	-.242	.107	-.067	-2.260	.024

Dependent Variable: Narcissism

Note: $R^2 = .083$, $F(2, 1056) = 48.603$, $p = .000$

According to the result of the Model 1, a significant regression equation was found ($F(2, 1056) = 48.603$, $p = .000$) with an R^2 of .083. The result showed that both explicit self-esteem and implicit self-esteem significantly predicted narcissism when both variables were included. This indicated that nearly 8.3% of the variance in narcissism can be explained by Model 1.

$$\text{Narcissism} = .487\text{ESE} - .242\text{ISE} + 1.846$$

Note: ESE= Explicit Self-esteem

ISE = Implicit Self-esteem

According to the equation, it can be predicted that narcissism of university students will increase .487 unit for one unit increase in explicit self-esteem and will decrease .242 unit for one unit increase in implicit self-esteem.

Table 3 Hierarchical Moderated Multiple Regression Analysis for Model 2 (The Effect of Explicit Self-esteem, Implicit Self-esteem and their interaction on Narcissism)

Model 2	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
	<i>B</i>	Std. Error	Beta		
(Constant)	.151	1.493		.101	.919
Explicit Self-esteem	.551	.056	.321	9.764	.000
Implicit Self-esteem	1.981	.884	.544	2.240	.025
IntEI	-.084	.033	-.617	-2.533	.011

Dependent Variable: Narcissism

Note: $R^2 = .087$, $F(3, 1055) = 34.71$, $p = .000$

$\Delta R^2 = .006$, $\Delta F(1, 1055) = 6.414$, $p < .05$

According to the result of the Model 2, the result revealed that the interaction effect for explicit self-esteem and implicit self-esteem was significant for narcissism ($\beta = -.617, p < .05$)

$$\text{Narcissism} = .551\text{ESE} + 1.981\text{ISE} - .084\text{IntEI} + .151$$

Note: ESE= Explicit Self-esteem

ISE = Implicit Self-esteem

IntEI= interaction of Explicit Self-esteem and Implicit Self-esteem

Moreover, the R^2 change between Model 1 and Model 2 was significant at the .05 level. Therefore, the addition of the interaction term between explicit self-esteem and implicit self-esteem can increase the amount of the explained variance in narcissism. Then, the model 2 indicated that the addition of the interaction term can change the direction and magnitude of the effect of explicit self-esteem (IV) on narcissism (DV) ($\beta = .544, p < .05$). Therefore, this finding indicated that implicit self-esteem can moderate the relationship between explicit self-esteem and narcissism.

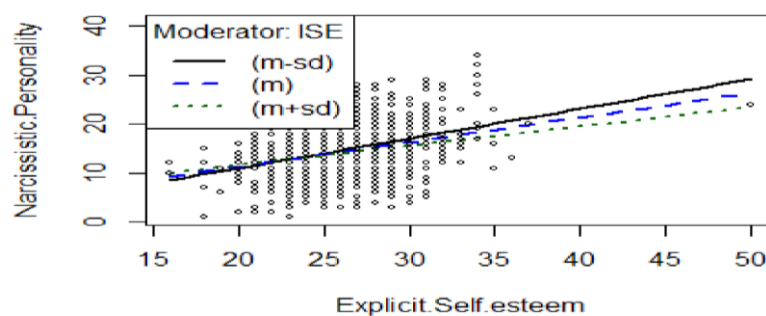


Figure 3 Mean Plot for the Significant Interaction between Implicit Self-esteem and Explicit Self-esteem as Predictors of Narcissism

Examining of the interaction plot showed a buffering effect that as implicit self-esteem increased the effect of explicit self-esteem on narcissism decreased. It can be concluded that the relation between explicit self-esteem and narcissism will be stronger for university students who have low, as compared to high, levels of overall implicit self-esteem.

The Moderated Mediation Model

The moderated mediation analysis was conducted to investigate the hypothesis that the indirect effect of explicit self-esteem on aggression through narcissism was moderated by implicit self-esteem. The proposed conceptual moderated mediation model is as follow:

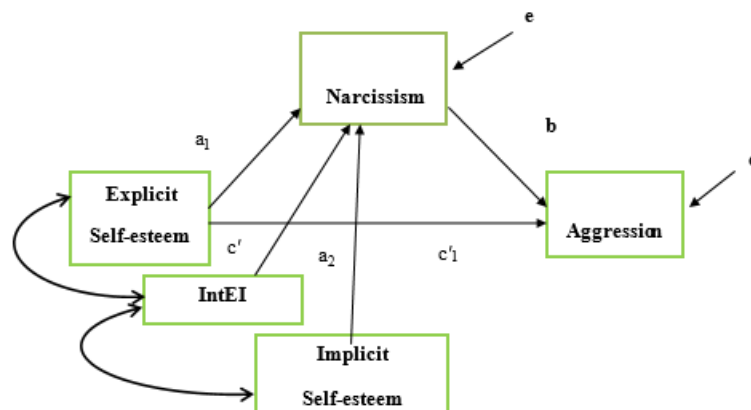


Figure 4 The Conceptual Model for Moderated Mediation

Table 4 Summary of All Fit Index for the Moderated Mediation Model

Fit Indexes	Ideal Standards	Observed Values
RMSEA	< 0.1	0.008
AGFI	> 0.9	0.994
RFI	≥ 0.9	0.998
NFI	≥ 0.95	0.999

The result showed that all the observed fit index values were within the allowable range for these specific types of fit indexes. Therefore, the observed data were well fitted with the proposed moderated mediation model.

Table 5 Model Summary for Explicit Self-esteem, Implicit Self-esteem, Narcissism and Aggression

	Outcome					
	Narcissism			Aggression		
Predictor	Path	Beta	<i>p</i>	Path	Beta	<i>p</i>
Explicit Self-esteem	a₁	.321	.000	c'1	-.161	.000
Implicit Self-esteem	a₂	.544	.025		–	–
ESEISE	c'2	-.616	.001		–	–
Narcissism	–	–	–	b	.264	.000
	$R^2 = .09$			$R^2 = .07$		

This table indicated that nearly 15% of the variance in aggression can be explained by the model.

Table 6 Conditional Indirect Effect of Explicit Self-esteem on Aggression at Values of Implicit Self-esteem

Implicit Self-esteem	Effect	Upper CI	Lower CI	<i>p</i>
Low (mean-1SD)	.577	.799	.402	.001
Medium (mean)	.458	.656	.312	.001
High (mean+1SD)	.339	.556	.196	.001

The model showed that the effect of explicit self-esteem depends on the values of implicit self-esteem ($p < 0.001$). This statistically significant interaction between explicit self-esteem and implicit self-esteem in the model for aggression indicates that the indirect effect of explicit self-esteem on aggression through narcissism is moderated by implicit self-esteem. The negative sign of the interaction effect ($c'_2 = -.616$, $p < 0.05$) is consistent with the interpretation that the indirect effect through narcissism is larger for university students who have low in implicit self-esteem.

Bootstrapped estimates of confidence intervals were produced to evaluate the conditional indirect effect at the different values of a moderator variable. At the mean of -1.406 a 95% CI was [0.799, 0.402], at .083 a 95% CI was [0.656, 0.312], and at 1.572 a 95% CI was [0.556, 0.196]. The conditional indirect effect at the sample mean, and 1 SD above the mean and 1 SD below the mean for implicit self-esteem was found significantly different from zero at $p = 0.001$. This supported the interpretation that the combination of high explicit self-esteem and the low implicit self-esteem predicted an increase in narcissism and as a consequence aggression will increase. In contrast, the combination of high explicit self-esteem and high implicit self-esteem predicted a decrease in narcissism and as a consequence aggression will decrease.

It was found that the value of significant conditional indirect effect was highest for low level of implicit self-esteem and lowest for high level. If implicit self-esteem of university students decreases, the magnitude of the conditional indirect effect also increases. Therefore, the lower the level of implicit self-esteem of university students possess, the higher the level of narcissism they have. The low level of implicit self-esteem of university students promote the degree to which explicit self-esteem is positively connected with narcissism of university students.

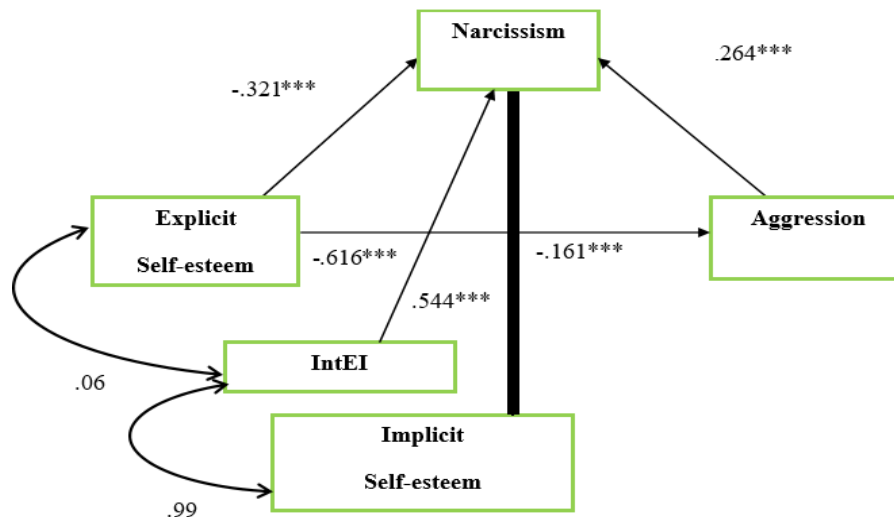


Figure 5 The Model for Moderation Effect of Implicit Self-esteem on the Mediation Analysis of Explicit Self-esteem, Narcissism and Aggression

Conclusion and Discussion

The Mediation Effect of Narcissism on the Relationship between Explicit Self-esteem and Aggression (H₁): In order to explore the relationship among explicit self-esteem, narcissism and aggression of university students in Sagaing Township, the Pearson Product- Moment Correlation was conducted. It was found statistically significant positive correlation between explicit self-esteem and narcissism, and positive correlation between narcissism and aggression. But, it was found significant negative correlation between explicit self-esteem and narcissism.

According to the mediation analysis, explicit self-esteem have direct negative effect on aggression and also indirect positive effect on aggression through mediation effect of narcissism. Therefore, H₁ was accepted.

Why university students with high explicit self-esteem show lower level of aggression can be explained as follows. According to the nature of explicit self-esteem, the individuals who really respect themselves, satisfy with their own qualities and possess optimistic view of themselves are less likely to involve in argumentative manners, destroy others with the aim of protecting themselves and more likely to control their anger and anger-related behaviors. Moreover, Rosenberg (1965) also revealed that low self-esteem weakens the connectivity of people with their society. According to the social-bonding theory, this decreases conformity with societal norms which leads to delinquency (Hirschi, 1969; cited in Anwar, 2016). So, individuals who have high explicit self-esteem will have low level of aggression.

Why university students with high explicit self-esteem have higher level of narcissism was discussed as follows. Individuals with high explicit self-esteem explicitly see themselves as they possess so many qualities and this may lead them to the desire to become a leader and as a

consequent they may hunger for authority and which is one of the narcissistic features. Moreover, this aspect of high explicit self-esteem is related to other narcissistic features such as self-sufficiency (they need not to learn anymore), superiority (see themselves as extraordinary and special ones) and like their appearance (vanity).

Why higher level of narcissism lead to higher aggression was discussed as follows. E Because of the exploitative tendency of narcissism, highly narcissistic people tend to spread gossip about people they don't like (indirect aggression) and also show more physical aggression. In line with the nature of exhibitionism that highly narcissistic people get upset when other people don't notice how they look when they go out in public and tend to demand others' attention and they are hypersensitive to others' evaluations. When these people cannot get the desired attention and negatively evaluated, they protect themselves against feelings of inferiority and shame by externalizing blame for their failures, which leads to feelings of hostility (do not trust others) and anger (get very angry for no apparent reason). Moreover, superiority also lead to physical aggression (will have to resort to violence to protect their rights) and indirect aggression (give silent treatment to others). By considering above these reasons, individuals with highly narcissistic people have high level of aggression.

The Moderation Effect of Implicit Self-esteem on the Relationship between Narcissism and Aggression (H₂): In order to explore the moderation effect of implicit self-esteem on the relationship between narcissism and aggression, the hierarchical moderated multiple regression analysis was conducted. According to the moderation analysis, it was found that the relation between explicit self-esteem and narcissism will be stronger for university students who have low, as compared to high, levels of overall implicit self-esteem. Therefore, H₂ was accepted.

Why university students with high explicit self-esteem and low implicit self-esteem lead to narcissism was discussed as follows. If an individual harbor positive self-feelings both consciously and nonconsciously, priming feelings of self-worth that do not require repeated validation. In this emotional state, they are in the state of psychological well-being. In contrast, if individuals nonconsciously harbor negative self-feelings but consciously hold positive feelings, priming the negative implicit system may heighten the activation of insecure feelings, thereby promoting greater self-serving responses. They may adopt the mistaken belief that if they can support their conscious self-feelings, their insecurities will disappear. In fact they are not dealing with the basic underlying deficit in implicit self-esteem. Lacking a firm foundation on which to base their feelings of self-worth, they may be especially likely to exhibit self-protective and self-aggrandizing strategies when unfavorable feelings are primed. These strategies may lead them to be narcissistic. According to the Mask model of narcissism, the narcissist's surface-level grandiosity masks deep-seated feelings of inferiority.

The Moderation Effect of Implicit Self-esteem on the Mediation Analysis of Explicit Self-esteem, Narcissism and Aggression (H₃): In order to explore the moderation effect of implicit self-esteem on mediation analysis, the moderated mediation analysis was conducted. It was found that the values of significant conditional indirect effect was highest for low level of implicit self-esteem and lowest for high level. Therefore, H₃ was accepted.

If implicit self-esteem of university students decreases, the magnitude of the conditional indirect effect also increases. Therefore, the lower the implicit self-esteem of university students possess, the higher the level of narcissism they have. The low level of implicit self-esteem of university students promote the degree to which explicit self-esteem is positively connected with narcissism of university students. The combination of high explicit self-esteem and the low implicit self-esteem predicted an increase in narcissism and as a consequence aggression will

increase. In contrast, high explicit self-esteem and high implicit self-esteem predicted a decrease in narcissism and as a consequence aggression will decrease.

In conclusion, the findings of the study assist as an advice for greater enhancement of Educational Guidance and Counseling sector of higher education to reduce narcissism and its related negative effects, aggression. Future researchers should examine whether discrepancy between implicit self-esteem and explicit self-esteem can contribute to other psychological problems rather than narcissism and narcissism can also contribute to other problems rather than aggression.

Acknowledgements

First of all, we would like to offer our respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) who allowed us to do this study. Then, we would like to express our honourable thanks and the deepest appreciation to Dr. Khin Hnin Nwe (Professor, Head of Department, Department of Educational Psychology, Sagaing University of Education) for her invaluable suggestions, encouragement and precious comments for our study.

References

- Amad, S. (2015). *Self-Esteem and Aggression: The Relationships between Explicit-Implicit Self-Esteem, Narcissism, and Reactive-Proactive Aggression*.
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders (3rd Ed.)*. Washington, DC: Author.
- Anwar. M., Mahmood B. & HanifM. K. (2016). Mental Health Issues in Young Adults of Pakistan: The Relationship of Narcissism and Self -Esteem With Aggression. *Journal of Behavioral Sciences*, Vol. 26 (2).
- Brumfield, B. (2013). *Selfie Named Word of the Year for 2013*. Retrieved June 23, 2019 from <http://edition.cnn.com/2013/11/19/living/selfie-word-of-the-year/>.
- Buss, A. H. & Warren. W. L. (2000). *The Aggression Questionnaire: Manual*. Western Psychological Services.
- Carroll, L., Hoenigmann-Stovall, N., King, A., Wienhold, J. & Whitehead, G. I. (1998). Interpersonal consequences of narcissistic and borderline personality disorders. *Journal of Social and Clinical Psychology*, Vol. 17(1).
- Deyan, G. (2020). *Out of This World Smartphone Statistics*. Retrieved January 23, 2020 from <https://techjury.net/stats-about/smartphone-usage/#gref>.
- Emily J. H. (2012). Understanding and Exploring Narcissism: Impact on Students and College Campuses. *CMC Senior Theses*, Vol. 381.
- Hibbard, S. (1992). Narcissism, shame, masochism, and object relations: An exploratory correlational study. *Psychoanalytic Psychology*, Vol. 9(4).
- Internet World Statistics: Usage and Population Statistics (2020). Retrieved January 23, 2019 from www.internetworldstats.com/stats.htm.
- Kaur, S., Maheshwari, S. K. & Preksha (2018). Narcissistic Personality and Selfie Taking Behavior among College Students. *International Journal of medical and health research*, Vol. 3.
- Lima, E. N. (2007). *The Association between Narcissism and Implicit Self-Esteem: A Test of the Fragile Self-Esteem Hypothesis*. Retrieved August 21, 2019 from http://purl.flvc.org/fsu/fd/FSU_migr_etd-1346.
- Nuttin, J. M. Jr. (1985). Narcissism beyond Gestalt and awareness: The name letter effect. *European Journal of Social Psychology*, Vol. 15.
- Ostrowsky, M. K. (2010). Are violent people more likely to have low self-esteem or high self-esteem? *Aggression and Violent Behavior*, Vol. 15(1).

- Pilch, I. & Hyla, M. (2017). Narcissism and self-esteem revisited: The relationships between the subscales of the NPI and explicit/implicit self-esteem. *Polish Psychological Bulletin*, Vol. 48 (2).
- Raskin, R. & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validation. *Journal of Personality and Social Psychology*, Vol. 54.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Sharma, M. K & Marimuthu, P. (2014). Prevalence and psychosocial factors of aggression among youth. *Indian Journal of Psychological Medicine*, Vol. 36.
- Stinson, F., Dawson, D., Goldstein, R., Chou, S., Huang, B., Smith, S., Ruan, W., Pulay, A., Saha, T., Pickering, R. & Grant, B. (2008). Prevalence, Correlates, Disability, and Comorbidity of DSMIV Narcissistic Personality Disorder: Results from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions. *The Journal of clinical psychiatry*, Vol. 69.
- Twenge, J. M. & Foster, J. D. (2010). Birth cohort increases in narcissistic personality traits among American college students, 1982-2009. *Social Psychological and Personality Science*, Vol. 1(1).
- Twenge, J., Konrath, S., Foster, J., Campbell, W. K. & Bushman, B. (2008). Egos Inflating Over Time: A Cross-Temporal Meta-Analysis of the Narcissistic Personality Inventory. *Journal of personality*, Vol. 76.
- Wiersbe, W. W. (2007). *The Wiersbe Bible Commentary: Old Testament*, 2 nd edn. David C. C., Italy.

AN INTERVENTION BASED STUDY ON REDUCING PUBLIC SPEAKING ANXIETY OF HIGH SCHOOL STUDENTS

Hnin Wai Linn¹, Yar Zar Chit²

Abstract

The main aim of the study was to investigate the intervention practices to reduce public speaking anxiety of high school students from Pyin Oo Lwin Township. This study was divided into two parts (Study I and Study II). For Study I, the sample consists of 460 Grade 9 students (222 males and 238 females) from four Basic Education High Schools and three Basic Education High Schools (Branch) of Pyin Oo Lwin Township in 2019-2020 Academic Year and 66 participants (30 males and 36 females) from selected school as Study II. Personal Report of Public Speaking Anxiety (PRPSA) (Mc Croskey, 2013), Self-Consciousness Scale- Revised (SCS-R) (Scheier & Carver, 2013) and Rosenberg Self-esteem Scale (Rosenberg, 1965) were used as instrument. According to the result, there was a significant positive correlation ($r= 0.45, p<0.001$) between self-focused attention and public speaking anxiety and also there was a significant negative correlation ($r=-0.34, p<0.001$) between self-esteem and public speaking anxiety. The result showed that 26.4% of public speaking anxiety can be explained by self-focused attention and self-esteem. And then, the result also revealed that the students' self-focused attention and public speaking anxiety after first intervention were significantly lower than before first intervention. Besides, students' self-esteem after second intervention was significantly higher than before second intervention and students' public speaking anxiety after second intervention was decrease due to the effectiveness of intervention practices or increase self-esteem. Finally, there was a significant difference among the mean value of public speaking anxiety across interventions ($p<0.001$). The results of the study highlighted all intervention activities were taken in this study were very effective for reducing public speaking anxiety of high school students.

Keywords: Self-focused attention, self-esteem, public speaking anxiety, intervention

Introduction

In today's time and age, good communication skills are essential in every academic and public field. Being able to communicate is a huge advantage for people. And yet, most people don't really learn public speaking formally in school. However, their ability to communicate definitely affects their performance as a student, and it will certainly impact the trajectory of her career and life. Since today's students are the world's future leaders, they also need to have good public speaking skill. Moreover, today's curriculum changes in Myanmar emphasize on the expression of students' opinions and ideas by themselves. For all mentioned above reasons, public speaking is very important for all students as future leaders of a country.

However, people who are speaking for living also experience anxiety about public speaking. This anxiety interferes their speaking performance and it terms as public speaking anxiety. According to North and Rives (2010) and Burnley et al. (1993) stated that approximately 85% of the general inhabitants' report experiencing some level of anxiety about speaking in public. Grewe and Seurer (2013) stated that public speaking anxiety (PSA) is known as one of the most prevalent problems in the educational setting. In some severe cases, this has led to more extreme anxiety and complete social withdrawal (Goberman et al., 2011).

There are many factors that affect public speaking anxiety. Among them, excessive self-focused attention plays an important role that can cause the public speaking anxiety among students. Excessive self-focused attention is suggested to negatively impact a person self-concept and enhance social anxiety (Bogels & Lamers, 2002).

¹ Senior Teacher, Basic Education High School (Pyin Sar), Pyin Oo Lwin Township, Mandalay Region

² Dr, Lecturer, Department of Educational Psychology, Sagaing University of Education

And then, low self-esteem can be one of the main factors for increasing public speaking anxiety in students. Lower level of self-esteem has been linked to school performance and serious behavioral problems and psychological problems such as depression, social anxiety (public speaking anxiety), loneliness, alienation, etc. (Sharma & Agarwala, 2015).

For all reasons mentioned above, if a student can reduce excessive self-focused attention and possess high self-esteem, his/her public speaking anxiety will decrease automatically. The present research will study that whether public speaking anxiety will decrease by taking intervention activities based on Cognitive Behavioral Therapy. This research will become a guide for anxious students for public speaking because there is no similar research in education field of Myanmar. This investigation will assist the students in reducing their public speaking anxiety and practicing the effective ways to control and cope their excessive anxiety.

Objectives of the Study

The main aim of the study is to investigate the intervention practices to reduce public speaking anxiety of high school students. The specific objectives are:

1. To inspect the relationships among self-focused attention, self-esteem and public speaking anxiety
2. To explore a predictive model for public speaking anxiety
3. To compare mean values of public speaking anxiety by school
4. To examine the differences between the students' self-focused attention and public speaking anxiety before and after first intervention
5. To examine the differences between the students' self-esteem and public speaking anxiety before and after second intervention
6. To inspect the students' public speaking anxiety decreases across interventions

Review of Related Literature

Excessive self-focusing may be especially problematic in the public speaking arena since successful public speaking performances are linked to attention to audience and environment. The ability to adapt, to grasp whether one's point is being understood, indeed to sense the effectiveness of a speech, is tied directly to the speaker's attention to the audience and environment. When speakers focus mostly on self, their opportunities to carefully monitor their environment and audience decrease, thereby reducing their capacity to effectively communicate (Bogels & Lamers, 2002).

Dual and Wicklund's Theory of Objective Self-awareness: Dual and Wicklund (1972) proposed two forms of conscious attention and used the terms 'objective' and 'subjective' self-awareness to describe them. Objective self-awareness occurs when a person's attention is focused on the self as an object. Subjective self-awareness occurs when attention is directed away from the self towards external objects, as the person is then the subject of his or her consciousness. If a person is aware that he or she is the object of someone else's attention that may be sufficient to trigger objective self-awareness. When a person becomes aware of the self as an object, measures himself up against own standard of correctness. These individuals will become increasingly self-critical. Spending more time in a state that leads to negative self-evaluation is likely to result in an increased number of negative self-related thoughts, which in terms of a cognitive model would lead to increased anxiety.

According to Coopersmith (1967), self-esteem is defined as positive and negative attitudes towards oneself. However, low self-esteem can be one of the main factors for increasing public speaking anxiety in students.

Effect of Self-esteem on Public Speaking Anxiety: Rosenberg (1965), one of the pioneers in self-esteem domain, stated that self-esteem as an attitude (positive or negative) that individuals have about themselves, and it is a product of the influences of culture, society, family and interpersonal relationships. He added that high self-esteem consists of an individual respecting himself and considering himself worthy. It is also linked to depression and anxiety. A person's view of self affects how he or she behaves. Rosenberg characterized the person with high self-esteem does not consider himself better than others, but neither does he consider himself inferior to others. He also found that low self-esteem person is always worried about making a mistake, being embarrassed or exposing themselves to ridicule. They are more depressed and unhappier; they have greater levels of anxiety.

Therefore, all of the people need to know the effect of excessive self-focused attention and low self-esteem on public speaking anxiety and also need to practice to reduce public speaking anxiety by taking possible treatments. The Cognitive Behavioral Therapy (CBT), Acceptance-Based Behavioral Treatment (ABBT) and third wave therapies which integrate mindfulness practice are all possible treatments for public speaking anxiety. Besides, Virtual Reality Therapy (VRT) (Sandra et al., 2002) and Exposure Therapy (Finn et al., 2009) are also effective for reducing public speaking anxiety.

Among them, **Cognitive Behavioral Therapy for Public Speaking Anxiety** was also included as an effective therapy. CBT not only reduces negative self-biases among those suffering with public speaking anxiety but often trains to the speaker to learn to shift focus from the self to the audience, allowing a more fluid presentation as well as increased self-confidence and self-efficacy (as cited in Roccaforte, 2017). It is a combination of behavioural and cognitive therapies. There are many methods used in CBT to reduce public speaking anxiety. Among them, according to Allen et al., (1989), there were three main methods to reduce PSA: Systematic Desensitization (SD), Cognitive Restructuring (CR), and Skills Training (ST). These methods are applied in this study.

Method

Research Design and Method

Since this study included two parts, descriptive research design and survey method were used for Study I. And then, experimental research design and critical action research method were taken for Study II.

Sample of the Study

For Study I, the participants were 460 (222 males and 238 females) Grade 9 students. They were randomly selected from four Basic Education High Schools and three Basic Education High Schools (Branch) of Pyin Oo Lwin Township in 2019-2020 Academic Year. These schools' names were coded with representative numbers for their privacy.

For Study II, there were 66 (30 males and 36 females) participants from selected school.

Instruments

In this study, **Self-Consciousness Scale- Revised (SCS-R)** was used to measure self-focused attention of students and was developed by Scheier & Carver (2013). The total number of items used in this study was 22 items and all are four-point Likert type. The internal consistency (Cronbach's alpha) of the Self-Consciousness Scale was 0.805.

Rosenberg Self-Esteem Scale was used to assess students' self-esteem and was developed by Rosenberg (1965). It is a ten-item Likert-type scale with items answered on a four-point scale-from strongly agrees to strongly disagree.

As last instrument, **Personal Report of Public Speaking Anxiety (PRPSA)** was developed by Mc Croskey (2013) and was used to measure public speaking anxiety of students. It consists of 34 items. The internal consistency (Cronbach's alpha) of PRPSA was 0.854.

And then, **intervention plans for reducing excessive self-focused attention** were conducted. These plans consist six activities: (1) tongue twister, (2) tell us the history of, (3) connect the dots, (4) in the new today, (5) story starters, (6) the big fat lie. Each activity takes about 45minutes to conduct and aims to know the students to learn to balance their attention between self- focused and external attention.

Lastly, **intervention plans for changing low self-esteem to high self-esteem** were taken. In this plan, five activities were included namely (1) I am, (2) flip, (3) we are, (4) listing traits, (5) a letter to yourself. Each activity takes about 45 minutes. The main aim of these activities is to improve the level of students' self-esteem and to teach the students to learn to present a speech in front of a group comfortably.

Data Collection Procedure

In this study, firstly, the permission for data collection was requested from the Head of Educational Psychology Department and the supervisor. And then, gathering permission from the headmasters and headmistresses of the respective high schools to carry out the task of data collection for Study I was taken. Then, 460 (222 male and 238 female) Grade 9 students were randomly selected from seven Basic High Schools in Pyin Oo Lwin Township. The researcher explained the participants the purpose of this study and the important of their participation in this study. Next, the participants were requested to complete all items of measuring tool. Next, according to the getting data from the Study I, the students from School 2 were selected to take the interventions for reducing their public speaking anxiety based on the Cognitive Behavioural Therapy as Study II. The researcher requested the permission from the Headmistress of the selected school to carry out the intervention process.

Findings

The Relationships Among Self-focused Attention, Self-esteem and Public Speaking Anxiety of High School Students

In order to explore the relationships among self-focused attention, self-esteem and public speaking anxiety of high school students, the Pearson Product-Moment Correlation Coefficient was computed. The results were shown in Table 1.

Table 1 Correlations Among Self-focused Attention, Self-esteem and Public Speaking Anxiety of High School Students

Variables	Self-focused Attention	Self-esteem	Public Speaking Anxiety
Self-focused Attention	-	-.217**	.45**
Self-esteem		-	-.34**
Public Speaking Anxiety			-

Note: *** Correlation is significant at the 0.001 level.

According to the result of Table 1, high school students' self-focused attention had significant relationship with public speaking anxiety ($r=.45$, $p<0.001$). This means that the two variables were positively correlated. Moreover, it can be concluded that the more the high school students had excessive self-focused attention, the higher their public speaking anxiety was. This finding was consistent with Grisham, King and Femingham's (2014) research. They found that there was a positive correlation between self-focused attention and public speaking anxiety.

Furthermore, the result revealed that there was negatively correlated between self-esteem and public speaking anxiety of high school students at 0.001 level. This means that the better self-esteem the students possessed, the lower level of public speaking anxiety they possessed. This was consistent with Faria and Vijaya's (2019) research. They explored that self-esteem and public speaking anxiety were negatively correlated. And then, this result also consistent with the research of Kumar et al., (2017). They found that public speaking anxiety was the most commonly experienced type of anxiety and this is because the lower level of self-esteem.

Result of Multiple Linear Regression on Self-focused Attention, Self-esteem and Public Speaking Anxiety of High School Students

To find out how well students' self-focused attention and self-esteem predict their public speaking anxiety, simultaneously multiple regression was computed. To see vividly, the explanation was presented in the following Table 2.

Table 2 Model Summary for Self-focused Attention, Self-esteem and Public Speaking Anxiety

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517 ^a	.267	.264	16.04

Dependent Variable: Public Speaking Anxiety

According to Table 2, the multiple linear regression correlation coefficient (R) = .517 and adjusted R square was .264. Therefore, it can be concluded that 26.4% of public speaking anxiety can be explained by self-focused attention and self-esteem.

Table 3 Descriptive Statistics for the Public Speaking Anxiety of High School Students by School

Variable	Schools	Mean	Standard Deviation
Public Speaking Anxiety	School 1	115.13	19.51
	School 2	116.80	18.48
	School 3	111.36	22.53
	School 4	116.55	22.25
	School 5	112.87	15.74
	School 6	114.92	14.44
	School 7	116.65	16.47

According this result, mean value of public speaking anxiety of students from School 2 was the highest when comparing with the mean values of students from other schools and so this showed their high public speaking anxiety.

Table 4 Levels of Public Speaking Anxiety by School

Variable	School	Group		
		Low	Moderate	High
Public Speaking Anxiety	School 1	15	41	12
	School 2	9	45	12
	School 3	16	39	11
	School 4	10	40	12
	School 5	9	41	3
	School 6	5	53	6
	School 7	11	58	12

The result of Table 4 also revealed that School 1, 2, 4, 7 were included in high group of public speaking anxiety. Among them, the least number of low anxiety students was in School 2. Therefore, School 2 can be assigned as high public speaking anxiety school. For all the reason mentioned above Table 3 and Table 4, School 2 was chosen to take intervention to improve self-esteem and to lessen students' self-focused attention.

Data Analysis for Intervention Results

In order to compare the high school students' self-focused attention before and after first intervention, paired samples *t* test was used.

Table 5 Paired Samples *t* Test Result of Self-focused Attention Before and After First Intervention

School	Intervention1	Mean	Std. Deviation	Mean Difference	<i>t</i>	<i>df</i>	<i>p</i>
School 2	Before	65.79	9.53	11.47*	9.25	65	.000
	After	54.32	5.80				

Note: *** The mean difference is significant at the 0.001 level.

According to Table 5, it can be perceived that students' self-focused attention after first intervention was significantly lower than before intervention ($p < 0.001$ level). Therefore, it can be concluded that intervention activities based on the Cognitive Behavioural Therapy for reducing self-focused attention could decrease the high school students' self-focused attention.

Table 6 Paired Samples *t* Test Result of Public Speaking Anxiety Before and After First Intervention

School	Intervention1	Mean	Std. Deviation	Mean Difference	<i>t</i>	<i>df</i>	<i>p</i>
School 2	Before	116.80	18.48	30.09*	11.45	65	.000
	After	86.71	14.78				

Note: *** The mean difference is significant at the 0.001 level.

According to Table 6, it can be perceived that students' public speaking anxiety after first intervention was significantly lower than before first intervention ($p < 0.001$). This means that the effect of intervention could reduce self-focused attention and also this reducing of self-focused attention made the students' public speaking anxiety decrease.

Table 7 Paired Samples *t* Test Results of Self-esteem Before and After Second Intervention

School	Intervention 2	Mean	Std. Deviation	Mean Difference	<i>t</i>	<i>df</i>	<i>P</i>
School 2	Before	25.00	3.31	-3.89*	-7.31	65	.000
	After	28.89	3.79				

Note: *** The mean difference is significant at the 0.001 level.

According to Table 7, it can be perceived that students' self-esteem after second intervention was significantly higher than before intervention ($p < 0.001$). This means that intervention activities based on Cognitive Behavioral Therapy for increasing self-esteem could be effective and also this effect could improve students' self-esteem.

Table 8 Paired Sample *t* Test Result of Public Speaking Anxiety Before and After Second Intervention

School	Intervention 2	Mean	Std. Deviation	Mean Difference	<i>t</i>	<i>df</i>	<i>P</i>
School 2	Before	86.71	14.78	6.530*	3.46	65	.001
	After	80.18	18.91				

Note: ** The mean difference is significant at the 0.01 level.

According to Table 8, it can be perceived that students' public speaking anxiety after second intervention are significantly lower than before second intervention ($p < 0.01$). This may be due to the effect of intervention activities and self-esteem improvement.

Table 9 Descriptive Results of Students' Public Speaking Anxiety Across Interventions

	N	Minimum	Maximum	Mean	Std. Deviation
Before intervention	66	60	161	116.80	18.48
After first intervention	66	51	120	86.71	14.78
After second intervention	66	46	120	80.18	18.91

However, to access whether there were significant differences among the means of public speaking anxiety, a repeated measures ANOVA, with Huynh-Feldt correlation was conducted. The result was expressed in Table 10.

Table 10 Repeated Measures ANOVA Result of Mean Comparison Across Interventions

Source		Type III Sum of Squares	<i>df</i>	Mean Square	F	Sig.	Partial Eta Squared
Inter- vention	Huynh-Feldt	50362.86	1.69	29817.37	120.90	.000	.65
	Linear	44256.74	1	44256.74	158.24	.000	.71
	Quadratic	6106.12	1	6106.12	44.60	.000	.41

According to Table 10, the students' public speaking anxiety decrease were significantly different, $F=120.9$, $p < 0.001$, $\eta^2 = 0.65$. Polynomial contrasts indicated, in support of this, there was a significant linear trend ($p < 0.001$) and this finding was qualified by the significant quadratic trend, ($p < 0.001$), reflecting the lower public speaking anxiety for first intervention and second intervention than before intervention. To be clearer, a line graph showing public speaking anxiety changes was shown in Figure1.

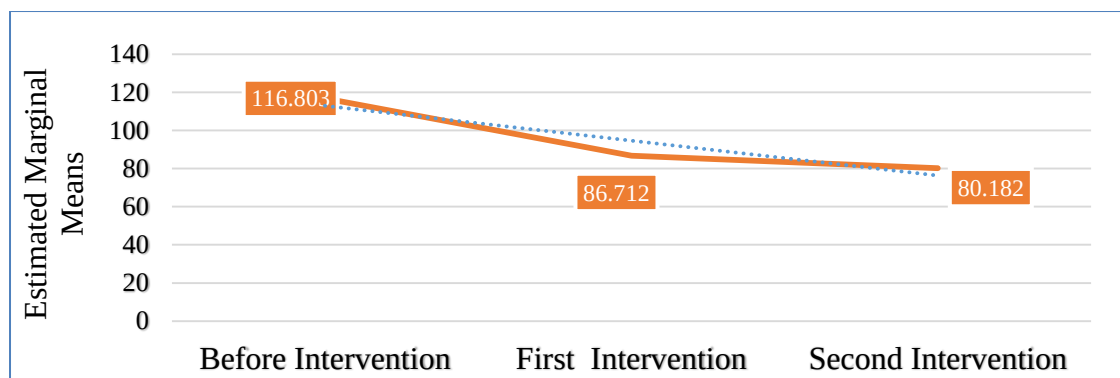


Figure 1 Comparisons of Mean Values for Public Speaking Anxiety Across Interventions

Students' Reflection on Their Public Speaking Anxiety

After conducting all intervention activities for reducing self-focused attention and improving level of self-esteem, all students included in Study II were asked to write or to reflect on their public speaking anxiety. Most of them reflected that they had no anxiety or no worry to give a speech in their class or in front of a group of people after doing the entire intervention process. According to their reflections and intervention results, the intervention activities have taken as Study II to reduce public speaking anxiety of high school students should be interpreted as the very effective and suitable activities.

Discussion and Conclusion

It is hoped that this research will provide a valuable insight to into the ways to reduce public speaking anxiety and effective ways to control their excessive anxiety. Since everyone who lives in social world, they need to communicate with others flexibly and also need to express what they want to say, what they want to express their own feelings and inner words conveniently. They also need to have good public speaking skill. Besides, today's students need to have a good public speaking skill especially. Because they are the world's future leaders and their leadership ability is closely entwined with their ability to connect with and motivate their audiences. For all reasons mentioned above, all teachers and parents should know that the importance of public speaking skill for students and also give a good guideline to the students to be a good person to speak publicly.

Furthermore, based on the findings of the present study to give a good speech publicly without anxiety, some interventions activities for reducing public speaking anxiety are also needed to give an effective speech. Therefore, the teachers and parents should also know that public speaking anxiety can be reduced by intervention activities based on the CBT and should also use the three methods: Systematic Desensitization, Cognitive Restructuring and Skill Training when implementing the lesson plans to reduce public speaking anxiety of students. It is hoped that lesson plans for interventions in this research are good models for the methods. Therefore, parents and teachers should try not only to know the effects of self-focused attention and self-esteem on public speaking anxiety but also to guide the intervention practices to lessen anxiety that causes the problematic behaviors when speaking before a group of people.

Acknowledgements

First and foremost, we would like to offer my respectful gratitude to Dr. Saw Pyone Naing (Rector), Dr. Myat Myat Thaw (Pro- Rector) and Dr. Khin Hnin Nwe (Head of Department, Department of Educational Psychology) from Sagaing University of Education for their permission to do this study and their invaluable suggestions, encouragements, necessary guidance, administrative supports, providing facilities throughout this study. Continually, we would give our deep gratitude to all administrators, teachers and all of participants in Pyin Oo Lwin Township for their active participations, co-operations and permission to do this study.

References

- Allen, M., Hunter, J. E., & Donohue, W. A. (1989). Meta-analysis of self-report data on the effectiveness of public speaking anxiety treatment techniques. *Communication Education*, 38, 58-60.
- Bogel, S. M., & Lamers, C. T. J. (2002). The causal role of self-awareness in blushing anxious, socially anxious, and social phobic individuals. *Behavior Research and Therapy*, 40, 1367-1384.
- Burnley, M., Cross, P., & Spanos, N. (1993). The effects of stress inoculation training and skills training on the treatment of speech anxiety. *Imagination, Cognition and Personality*, 12, 355-366.
- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco: W.H. Freeman & Co.
- Duval, S., & Wicklund, R. A. (1972). *A theory of objective self-awareness*. London: Academic Press.
- Faria, C., & Vijaya, R. (2019). Distress, self-esteem and public speaking anxiety among teaching faculty. *International Journal of Indian Psychology*, 7(2), 1078-1081.
- Finn, A. N., Sawyer, C. R., & Schrodt, P. (2009). Examining the effect of exposure therapy on public speaking state anxiety. *Communication Education*, 58, 92-109.
- Goberman et al. (2011). Get "real": Does practicing speeches before an audience improve performance? *Communication Quarterly*, 54, 111-125.
- Grewe, B., & Seurer, L. (2013). *Translating research into instructional practice: Public speaking anxiety*. Retrieved from: Teaching and Learning/Virtual Faculty Lounge/ TRIP%20 student %20public %20speaking%20anxiety.pdf.
- Grisham, R. J., King, J. B., Makkar, R. S., & Felningham, L. K., (2014). The contribution of arousal and self-focused attention to avoidance in social anxiety. *Journal of Anxiety, Stress and Coping*, 45 (7), 1-18.
- Ingram, R. E. (1990). *Self-focused attention in clinical disorders: Review and a conceptual model*. Washington, DC: ETATS-UNITS, American Psychological Association.
- Jangirand, S. K., & Govinda, R. B. (2017). Reducing public speaking anxiety with behaviour modification techniques among school students: A study. *International Journal of Indian Psychology*, 5 (1), 32-43.
- Kumar, M., et al. (2017). Overcoming the effect of low self-esteem on public speaking anxiety with mindfulness-based interventions. *Journal of Educational Psychology*, 44 (4), 287-296.
- McCroskey, J. C., (2013). Personal Report of Public Speaking Anxiety (PRPSA). Measurement Instrument Database for the Social Science. Retrieved from www.midss.ie.
- Morgan, T., & Schmidt, T. (2012). Reducing public speaking anxiety for native and non-native English speakers: The value of systematic desensitization, cognitive restructuring, and skills training. *Cross-Cultural Communication*, 8(5), 16-19.
- North, M., & Rives, J. (2001). Virtual reality therapy in aid of public speaking. *International Journal of Virtual Reality*, 3, 2-7.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Roccaforte, C. (2017). Social anxiety disorder is common, and its symptoms can be debilitating, but it's highly treatable. Retrieved from: www.anxiety.org/social-anxiety-disorder-sad-can-be-debilitabing-but-responds-well-to-treatments-like-cbt.
- Scheier, M. F., & Carver, C. S. (2013). *Self-consciousness Scale-(SCS-R)*. Measurement Instrument Database for the Social Science. Reterived from: www.midss.ie.
- Sandra, R. H., Robert, L. K., Max, M. N. (2002). Brief virtual Reality therapy for public speaking anxiety. *Cyber Psychology & Behavior*, 5(6), 543-550.
- Sharma, S., & Agarwala, S. (2015) . Self-esteem and collectives self-esteem among dolescents: An interventional approach . *Psychological Thought*, 8, 105-113.

THE MODERATION EFFECT OF FEAR OF MISSING OUT ON THE RELATION BETWEEN MINDFULNESS AND NOMOPHOBIA OF UNDERGRADUATE STUDENTS FROM SAGAING UNIVERSITY OF EDUCATION

Pyae Wai Shan¹, Wai Wai Than²

Abstract

The main purpose of this study was to investigate the moderation effect of fear of missing out on the relationship between mindfulness and nomophobia of undergraduate students from Sagaing University of Education. The quantitative research design and stratified random sampling method were used in this study. This study was conducted through correlational design. The sample of the study comprised 1000 undergraduate students (496 female and 504 male) who were randomly chosen from first year, second year, third year, fourth year and fifth year students in Sagaing University of Education as participants of the study. In this study, Nomophobia Questionnaire (Yildirim & Correia, 2015), Five Facets Mindfulness Questionnaire (Baer, Smith, Hopkins, Kiretemeyer & Toney, 2006) and Fear of Missing Out Scale (Przybylski, Murayama, DeHaan & Gladwell, 2013) were used to measure nomophobia, mindfulness and fear of missing out of students. The results revealed that most of the students in Sagaing University of Education showed moderate (56.5%) and severe (35.2%) level of nomophobia. The moderated hierarchical multiple regression analysis result showed that fear of missing out acts as a moderator between mindfulness and nomophobia.

Keywords: Nomophobia, Mindfulness, Fear of Missing Out

Introduction

Nowadays, technologies such as mobile smartphones and the Internet are rapidly growing. Mobile smartphones constitute the greatest inventions in modern world. Because of their convenience and ease of use, most people in developed and developing countries use smartphones. According to Global Digital 2019 report, there are 5.11 billion active mobile subscriptions in the world today with an official population of 7.7 billion. So, mobile technology has spread rapidly around the globe.

The advances in mobile information and communication technologies have paved the way for the worldwide adoption of mobile phones. In particular, smartphones, as the latest evolution of ICTs, have signaled the start of the mobile age (Yildirim & Correia, 2015). According to Digital 2019 Myanmar, the number of mobile active subscriptions exceeds the total population with more than 56.57 million subscriptions compared to a total population of 54.10 million. There is a high penetration rate of smartphones (105 percent of all mobile owners) in Myanmar. Therefore, mobile devices are almost accessible for Myanmar young people.

The revolution of information and technology (ICT) has not only changed the way we communicate and access information, but it has also resulted in the emergence of new phobias and mental disorders. One of the disorders caused by the use of smartphones is nomophobia, which is defined as an intense and irrational fear of being out of mobile phone contact. The term is an abbreviation for “No-Mobile-phone Phobia” which was coined during a 2008 study by the UK post office who commissioned YouGov, a UK-based research organization, to look at anxieties suffered by mobile phone users. A study conducted in the UK (SecurEnvoy, 2012, cited in Yildirim & Correia, 2015) surveyed 1000 employees and showed that the number of people suffering from nomophobia increased from 53% to 66%. This shows that the researches need to investigate the problems emanating from smartphone use, such as nomophobia.

¹ Senior Assistant Teacher, B.E.H.S (B), Warr Khwa, Mahlaing Township, Mandalay Region

² Lecturer, Department of Educational Psychology, Sagaing University of Education

According to Yildirim & Correia (2015), nomophobia refers to the feelings of discomfort or anxiety experienced by individuals when they are unable to use their mobile phones or utilize the affordances these devices provide. Nomophobia affects individual daily lives in a negative way both physically and psychologically. In nomophobia, individuals start to feel anxious in variety of situations: forgetting it at home, running out of the battery, or when mobile phone losses its signal. This anxiety demotivates individuals to focus their daily routines (Dixit, Shukla, Bhagwat, Bindal, Goyal, Zaidi & Shrivastava, 2010, cited in Gezgin, Cakir, & Yildirim' 2017). And, nomophobia spreads among young individuals, deteriorating the quality of life of young individuals due to anxiety and fear (Dixit et al., 2010, cited in Gezgin, Cakir, & Yildirim' 2017). According to Gezgin, Cakir and Yildirim (2017), the prevalence rate of nomophobia is increasing among university students. So, this study aims to investigate the prevalence of nomophobia of undergraduate students from Sagaing University of Education.

Prevalence of nomophobia may lead to physical and psychological problems. For this reason, prevention activities must be prioritized when dealing with the intense and uncontrolled usage of smartphones. To reduce the level of nomophobia, one has to be aware the problem and well-equipped with knowledge. Mindfulness has been shown to be effective in relieving stress and attention is considered by many as one of the prerequisites to start a self-regulation process and, nomophobia at its part is known to facilitate self-regulation and management in college students (Shonin, Van Gordan, Slade & Griffiths, 2013). Mindfulness is used effectively in various behavioral dependencies (Shonin et al., 2013). In addition, mindfulness has been theorized to have effects on behavioral addictions, depression, mood disorder, and anxiety disorder (Shonin et al., 2013) and nomophobia (Sakiroglu, Gulada, Ugurcan, Kara & Gandur, 2017).

And then, as the next objective, this study aims to contribute by investigating effects of mindfulness on nomophobia. Perhaps the most cited definition of mindfulness is that of Kabat-Zinn (2003), which describes it as the “awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003). Therefore, mindfulness facilitates positive mood and can reduce depressive symptoms and stress (Kristeller & Hallett, 1999). Therefore, this study hypothesized that high mindfulness would be associated with low nomophobia. In other words, there would be a negatively significant effect of mindfulness on nomophobia.

In studying the prevalence of nomophobia, there are many factors that affect on nomophobia. Among them, fear of missing out (FoMO) is one of the factors that can cause nomophobia. According to Self-Determination Theory (Deci & Ryan, 1985), humans are naturally seeking fulfillment of three basic psychological needs: competence, autonomy, and closeness. Through this theoretical lens, the FoMO phenomenon can be understood as arising from situational or chronic deficits in psychological need satisfactions. Therefore, low levels of basic need satisfaction may relate to FoMO. Individuals who are low in basic need satisfaction may gravitate towards social media use because it is perceived as a resource to get in touch with others, a tool to develop social competence, and an opportunity to deepen social ties (Przybylski, Murayama, DeHaan, & Gladwell, 2013). According to Turkle (2012, Yildiz-Durak, 2017), excessive online communication had brought nomophobia which means fear of lacking communication, not being able to develop social skills needed for face to face communication and a negative psychological effect. For this reason, fear of missing out could be a factor that can cause nomophobia.

Fear of missing Out (FoMO) can become nomophobia, which can negatively affect people's life. It is important to seek ways to reduce the level of nomophobia. To reduce the level of nomophobia, one has to be aware the problem and well-equipped with knowledge.

Mindfulness has been shown to be effective in relieving stress and attention is considered by many as one of the prerequisites to start a self-regulation process and, nomophobia at its part is known to facilitate self-regulation and management in college students (Shonin, Van Gordan, Slade & Griffiths, 2013). Mindfulness is used effectively in various behavioral dependencies (Shonin et al., 2013). In addition, mindfulness has been theorized to have effects on behavioral addictions, depression, mood disorder, and anxiety disorder (Shonin et al., 2013) and nomophobia (Sakiroglu, Gulada, Ugurcan, Kara & Gandur, 2017).

After assuming that mindfulness as a protective factor of nomophobia and fear of missing out as a risk factor of nomophobia, it is needed to study whether mindfulness can reduce nomophobia of students or mindfulness cannot reduce nomophobia when the increasing effect of FoMO. In studying the previous researches, the effect size of FoMO on nomophobia is more than that of mindfulness on nomophobia. If only it would be interaction term, nomophobia would be increased when the increasing effect of fear of missing out still mindfulness. Just because fear of missing out drives social media use which is often accessed through smartphones (Maeng & Arbeau, 2018). Thus, people who enjoy interpersonal, transaction and entertainment phone use pattern than information seeking use pattern tend to play nomophobia (Jiang & Zhao, 2016). But, individuals with high mindfulness use social media for information seeking. However, individuals with high mindfulness and high fear of missing out may use social media for interpersonal, transaction and entertainment use pattern than information seeking pattern and may lead to nomophobia. For this reason, it is needed to study the interaction effect of fear of missing out and mindfulness on nomophobia.

For the above reasons, it is anticipated that the present study will provide some preliminary evidence for the prevalence of nomophobia and add the powerful evidences about the effect of fear of missing out and mindfulness on nomophobia that contribute to other future research directions.

Aims of the Study

The main aim of the research was to study the moderation effect of Fear of Missing Out on Mindfulness and Nomophobia of Undergraduate Students from Sagaing University of Education.

The specific objectives were as follows:

- To investigate the level of nomophobia of undergraduate students, and
- To investigate whether fear of missing out moderate the relationship between mindfulness and nomophobia of undergraduate students.

Definitions of Key Terms

Fear of Missing Out is a pervasive apprehension that others might be having rewarding experiences from which one is absent and a desire to stay continually connected what others are doing. (Przybilski et al., 2013)

Nomophobia refers to the feelings of discomfort or anxiety experienced by individuals when they are unable to use their mobile phones or utilize the affordances these devices provide (Yildirim & Correia, 2015).

Mindfulness is defined as the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment (Kabat-Zinn, 2003).

Method and Procedure

Sampling

By using stratified random sampling technique, the students were selected from Sagaing University of Education. The number of students participated in the study are mentioned in Table 1.

Table 1 Number of Students who Participated in this Study

No.	Year	Number of Selected Students		Total
		Male	Female	
1	First Year	101	100	201
2	Second Year	100	100	200
3	Third Year	100	100	200
4	Fourth Year	100	96	196
5	Fifth Year	103	100	203
Total		504	496	1000

Method

Correlational research design was used in this study.

Instrumentation

The 20-items Nomophobia Questionnaire (NMP-Q) developed by Yildirim & Correia (2015) was used in this study. There were 4 sub-scales such as not being able to access information, giving up convenience, not being able to communicate and losing connectedness. The internal consistency (Cronbach's Alpha) for Nomophobia Questionnaire was 0.911.

Five Facets Mindfulness Questionnaire (FFMQ) is a 36-items measure of measure developed by Baer et al. (2013). There were 5 sub-scales such as observing, describing, acting with awareness, non-judging and non-reactivity. The internal consistency (Cronbach's Alpha) for Five Facets Mindfulness Questionnaire was 0.757.

Fear of Missing Out scale (FoMOs) developed by Przybylski et al. (2013) included 10 items. The internal consistency (Cronbach's Alpha) for Fear of Missing Out Scale was 0.764.

Data Analysis

In order to investigate the research objectives, quantitative data analysis technique was utilized. The quantitative data were analysed by descriptive statistics, independent samples *t* test, one-way analysis of variance (ANOVA), and moderated hierarchical multiple regression analysis with the help of the Statistical Package for the Social Sciences (SPSS 20.0).

Results

Examining Nomophobia (NOMO) of Undergraduate Students

Nomophobia level of students was identified by using the following four subscales including not being able to access information, giving up convenience, not being able to communicate, and losing connectedness. In terms of descriptive statistics, minimum-maximum scores, means and standard deviations of nomophobia were calculated and described in Table 2.

Table 2 Descriptive Statistics for Nomophobia of Undergraduate Students in SUOE

Variables	No. of items	Minimum	Maximum	Mean	Mean%	SD
NRI	4	4	28	18.41	65.75	4.914
GUC	5	5	35	22.74	64.97	6.189
NC	6	6	42	29.02	69.09	7.210
LC	5	5	35	20.18	57.66	6.393
Overall Nomophobia	20	20	138	90.35	65.47	20.06

Note: NRI = Not being able to access information
 GUC = Giving up convenience
 NC = Not being able to communicate
 LC = Losing connectedness

As shown in Table 2, the mean score for nomophobia was 90.35. The score range for moderate nomophobia is (60-99), as identified by Yildirim and Correia (2015). The observed mean falls in this range. Therefore, it means that most of the undergraduate students in Sagaing University of Education suffer moderate and severe level of nomophobia.

Among the subscales, the mean percent for not being able to communicate (69.09%) was the highest. Not being able to access information was the second highest scale (65.75%) and giving up convenience was the third highest scale (64.97%) for the students. Among the subscales, losing connectedness was the lowest level (57.66%) for the students. Finally, overall nomophobia level of students had 65.47%.

Nomophobia of undergraduate students were divided into four groups such as severe, moderate, mild and absence level of nomophobia group. To know the number and percentage of students in each group, distribution of students in different nomophobia groups was described in Table 3.

Table 3 Distribution of Undergraduate Students in Different Nomophobia Groups

Nomophobia	Range	Frequency	Percentage
Severe level	$100 \leq \text{NOMO} \leq 140$	352	35.2%
Moderate level	$60 \leq \text{NOMO} \leq 99$	565	56.5%
Mild level	$21 \leq \text{NOMO} \leq 59$	82	8.20%
Absence level	$\text{NOMO} = 20$	1	.010%

Table 3 showed that 1 student (.010%) was in the absence level of NOMO group, 82 students (8.20%) was in the mild level of NOMO group, most of the students 565 students (56.5%) were in the moderate level of NOMO group and unfortunately founded that 352 students (35.2%) were in the severe level NOMO group. Therefore, it can be interpreted that generally most of the students in the current study had moderate level and severe level of nomophobia.

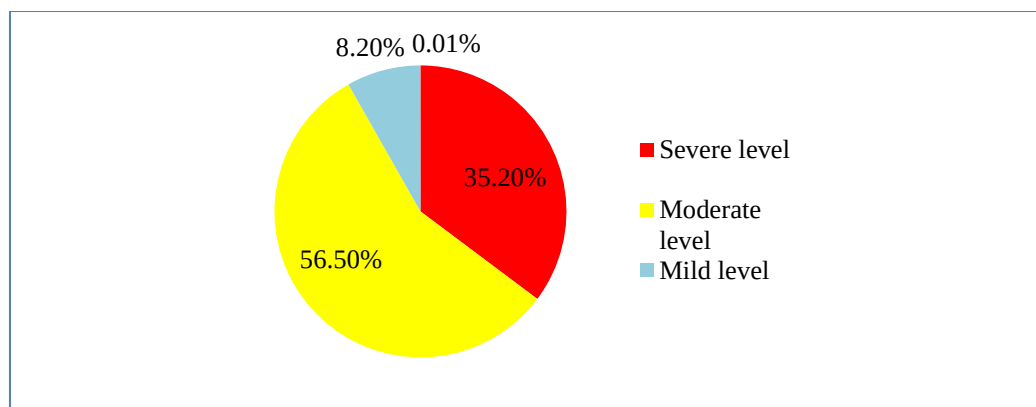


Figure 1 Pie Chart Showing the Percentage of Nomophobia Level of Undergraduate Students in SUOE

The Moderation Effect of Fear of Missing Out on the Relationship between Mindfulness and Nomophobia of Undergraduate Students

Moderated hierarchical multiple regression analysis was used to examine whether fear of missing out can serve as the moderator between mindfulness and nomophobia. In step 1, fear of missing out and mindfulness were also entered in independent variable box and nomophobia was entered in dependent variable box. In step 2, the interactive term between fear of missing out and mindfulness was entered into independent variable box.

Table 4 Results of Moderated Hierarchical Multiple Regression Analysis for Model 1 (The Effect of Fear of Missing Out and Mindfulness on Nomophobia)

Model 1	B	SEB	β	t
(Constant)	55.419	6.770		8.185
FoMO	1.814	.093	.531***	19.439
Mind	-.199	.051	-.107***	-3.916

Dependent Variable: Nomophobia

Note: $R^2 = .329$, $F(2, 997) = 244.902$, $p < .001$

*** $p < .001$

According to the result for Model 1, a significant regression equation was found ($F(2, 997) = 244.902$, $p < .001$) with an R^2 of .329. The result showed that both fear of missing out and mindfulness significantly predicted nomophobia when both variables were included. This indicates that nearly 33% of the variance in nomophobia can be explained by Model 1.

$$\text{Nomophobia} = 55.419 + 1.814 \text{ FoMO} - .199 \text{ Mind}$$

Note: FoMO = Fear of Missing Out

Mind = Mindfulness

According to the equation, it can be predicted that nomophobia of students will increase 1.814 units for one unit increase in fear of missing out and will decrease .199 unit for one unit increase in mindfulness.

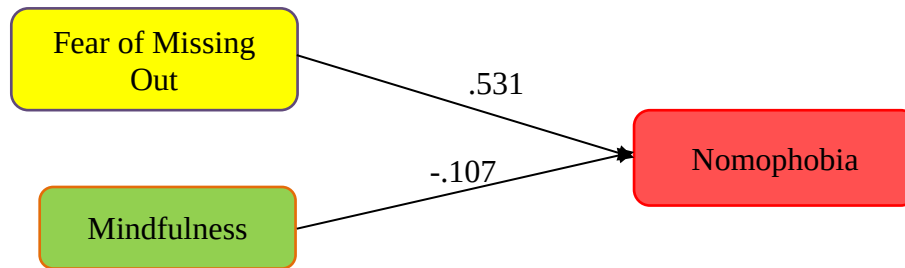


Figure 2 Multiple Regression Model for Predicting Nomophobia from Fear of Missing Out and Mindfulness

In the Model 2, a significant regression equation was found ($F(3,996) = 165.976$, $p < .001$) with an R^2 of .333. The results of Model 2 were displayed in Table 4.6.

Table 4.6 Results of Moderated Hierarchical Multiple Regression Analysis for Model 2 (The Effect of Fear of Missing Out, Mindfulness and their Interaction on Nomophobia)

Model 2	B	SEB	β	t
(Constant)	112.553	24.710		4.555
FoMO	-.059	.785	-.017	-.075
Mind	-.746	.233	-.400**	-3.202
FoMO $\times$ Mind	.018	.008	.538*	2.404

Dependent Variable: Nomophobia

Note: $R^2 = .333$, $F(3,996) = 165.976$, $p < .001$

$\Delta R^2 = .004$, $\Delta F(1,996) = 5.778$, $p < .05$

*** $p < .001$, * $p < .05$

According to the result of the Model 2, the result revealed that the interaction effect for fear of missing out and mindfulness was significant for nomophobia ($\beta = .538$, $p < .05$).

$$\text{Nomophobia} = -.059 \text{ FoMO} - .746 \text{ Mind} + .018 (\text{FoMO} \times \text{Mind})$$

Note: FoMO = Fear of Missing Out

Mind = Mindfulness

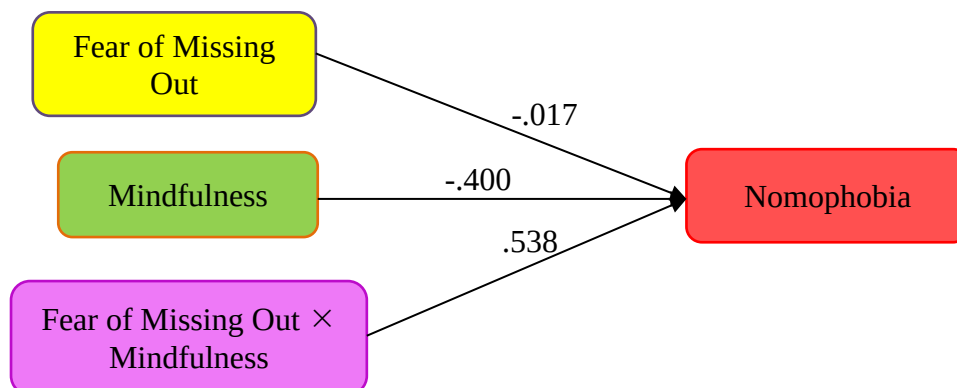


Figure 3 Multiple Regression Model for Predicting the Effect of Fear of Missing Out, Mindfulness and their Interaction on Nomophobia

Moreover, the R^2 change between Model 1 and Model 2 was also significant at the .05 level. Therefore, the addition of the interaction term between FoMO and Mind can increase the amount of the explained variance in Nomophobia. Then, the Model 2 indicated that the addition

of the interaction term can change the magnitude of the effect of Mindfulness (IV) on Nomophobia (DV) ($\beta = -.400, p < .001$). Therefore, this finding indicated that Fear of Missing Out can moderate the relationship between Mindfulness and Nomophobia.

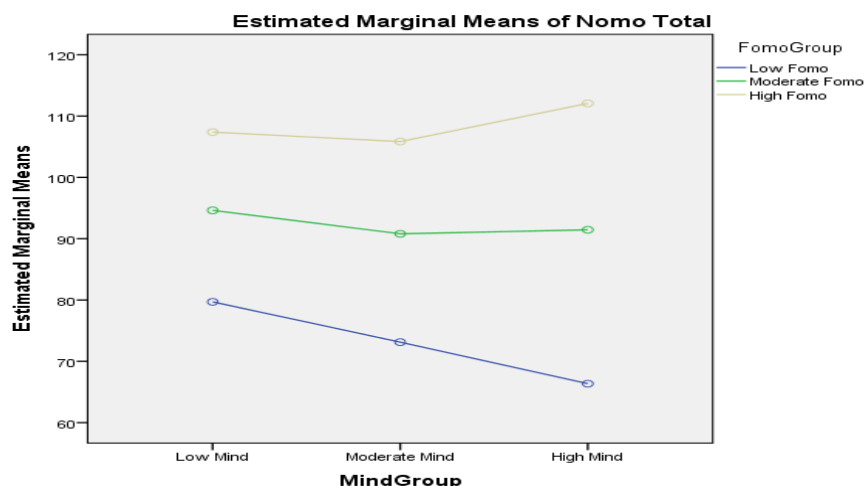


Figure 4 Simple Slopes for the Moderation Effect of Fear of Missing Out on the Relationship between Mindfulness and Nomophobia

Examination of the interaction plot showed an enhancing effect that as Fear of Missing Out increased, the relationship between Mindfulness and Nomophobia will eventually change from negative direction to positive direction. That is, as Fear of Missing Out increased, the negative relationship between Mindfulness and Nomophobia become weak. At low Fear of Missing Out, students with high Mindfulness showed lower Nomophobia than students with moderate and low Mindfulness. At moderate Fear of Missing Out, students with high Mindfulness also showed lower Nomophobia than students with moderate and low Mindfulness, but with lower effect size. Surprisingly, at high Fear of Missing Out, students with high Mindfulness showed even higher Nomophobia than others. Therefore, it can be concluded that in SUOE population, mindfulness can control the risk of nomophobia for students with low level of fear of missing out, but, mindfulness cannot control the risk of nomophobia for students with high level of fear of missing out.

Conclusion and Discussion

Examining Nomophobia Level of Undergraduate Students in SUOE. According to the result of descriptive analysis for nomophobia described that most of the students in Sagaing University of Education had moderate and severe level of nomophobia. Moreover, the mean percent of “not being able to communicate” subscale was the highest among the subscales of nomophobia. It can be concluded that most of the students in Sagaing University of Education had the highest anxiety about not being able to communicate.

This finding is somewhat in line with the results of those previous studies (Gezgin, Sumuer, Arslan, & Yildirim, 2016; Gezgin, Cakir & Yildirim, 2017; Gezgin, Hamutoglu, Sezen-Gultekin & Ayas, 2018; Yogurtcu, 2018; Yildiz-Durak, 2018 and Sezer & Atilgan, 2019), showing moderate level of nomophobia in participants.

The reasons why **most of undergraduate students in SUOE show moderate and severe level of nomophobia** can be discussed as the followings.

Firstly, capabilities of smartphones (e.g, getting information, ease of mobility, convenience and safety, facilitating in the process of communicating, passing time and

alleviation) make people more dependent on smartphones (LaRose & Eastine, 2004). Those benefits offered by smartphone may also cause students to spend more time for using smartphones. Thus, increase dependency in life on mobile phones can lead to nomophobia.

In addition, when examining the responses of students to questionnaire items, respondents have the highest mean scores (5.43) in Item 10 (communication with family and friends), in Item 7 (Mean=5.29) (connect Wi-Fi or Internet access), in Item 4 (Mean=5.13) (use smartphone and/or capabilities), in Item 2 (Mean=5.06) (get novel information), and in Item 15 (Mean=5.06) (constant connection with family and friends). To conclude, students excessively use smartphones because of their desires to communicate with family and friends, use capabilities of smartphone and get novel information. According to Cognitive Behavioral Model, cognitive maladaptation may lead to excessive smartphone usage by imagining that their above desires can be fulfilled only from smartphones. Furthermore, according to Piaget's theory, adolescents before age 20 will lead to cognitive maladaptation. Since most of the students in Sagaing University of Education are under 20, they can mislead to use smartphones excessively for fulfilling their desires, and eventually can suffer greater risk of nomophobia.

In brief, excessive smartphone usage, fear of not being able to access information, fear of not being able to communicate with family and friends, cognitive maladaptation, desire for immediate rewards, desire for self-efficacy and satisfaction are the factors causing nomophobia.

Examining the Moderation Effect of Fear of Missing Out on the Relationship between Mindfulness and Nomophobia of Undergraduate Students in SUOE. According to the results of Moderated hierarchical multiple regression analysis, it was found that Fear of Missing Out is a risk factor of nomophobia and Mindfulness is a protective factor of nomophobia without considering their interaction, but after adding the interaction term, as Fear of Missing Out increases, the negative relationship between Mindfulness and Nomophobia become weak. Therefore, it can be concluded that among SUOE population, mindfulness can control the risk of nomophobia for students with low level of fear of missing out, but, mindfulness cannot control the risk of nomophobia for students with high level of fear of missing out.

Why mindfulness can lower the risk of nomophobia at the low level of fear of missing out can be explained as follows. Two components of mindfulness—interoceptive awareness and nonjudgmental acceptance—improve self-control by amplifying and drawing attention to the conflict-related affect that instantiates it (Brown, Teper & Inzlicht, 2017). People with high self-control use patterns of information seeking rather than interpersonal, transaction and entertainment in using smartphones (Jiang & Zhao, 2016). High self-control can reduce problematic mobile phone use and nomophobia via information seeking use patterns (Jiang & Zhao, 2016). Therefore, in SUOE population, mindfulness can control the risk of nomophobia for students.

Why mindfulness cannot control the risk of nomophobia for students with high level of fear of missing out was discussed as follows. According to Self Determination Theory, people have three basic needs of autonomy, relatedness and competence. People with low levels of basic need satisfaction suffer from high level of fear of missing out (Przybylski et al., 2013). Fear of missing out drives social media use which is often accessed through smartphones (Maeng & Arbeau, 2018). Social media users enjoy interpersonal, transaction and entertainment than information seeking so that they face anxiety out of mobile phones, that is, nomophobia (Jiang & Zhao, 2016). Thus, fear of missing out can predict nomophobia highly.

Because of this serious effect of fear of missing out on nomophobia, high mindfulness cannot control risk of nomophobia when combined with high fear of missing out. Students with high mindfulness and high fear of missing out may reach to social media (e.g, Facebook,

Youtube, Skype, Pinterest, Opera Mini etc.) with the aim of searching information. Because of attractiveness of social media, they turn from information seeking pattern to interpersonal, transactional and entertainment seeking patterns in using smartphones, favouring the probability of nomophobia. In this way, nomophobia only cannot control the risk of nomophobia when interacting with fear of missing out.

Recommendations for Future Researches

Based on the results of this study, some recommendations are suggested for the future researches. Since Mindfulness only can't reduce risk of Nomophobia when FoMO interact with it, the future researches should study other factors which can control the effect of FoMO or reduce FoMO for better mental health of university students. In considering the above discussions described in the previous section, other controlling factors for nomophobia may be self-control, mobile phone use patterns, cognitive maladaptation, self-efficacy and satisfaction.

Acknowledgements

At the outset, our warmest thanks go to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education), for offering us opportunities to do this study. We would also like to acknowledge Chairperson, Dr. Khin Hnin Nwe (Professor and Head of Department, Department of Educational Psychology, Sagaing University of Education) for her expert advice and encouragement to me throughout the study. Deep thanks and appreciation must go to teachers in Department of Educational Psychology for their continuous support and patience, for their professional guidance, coaching, mentoring and reassurance which has enabled us to carry out this research up to this rightful conclusion.

References

- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), 27–45.
- Baer, R.A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., & Walsh, E. (2008). Construct Validity of the Five Facet Mindfulness Questionnaire in Meditating and Nonmeditating Sample. *Assessment*, 13(1), 27–45.
- Brown, N.E., Teper, R., & Inzlicht, M. (2017). How mindfulness enhances self-control. Canada.
- Deci, E. I., & Ryan, R.M. (1985). Intrinsic motivation and self-determination in human behavior, New York: Plenum.
- Ei Ei Shorn Aung. (2019). Facebook addiction and loneliness from university from Sagaing district. Unpublished Thesis, Sagaing University of Education, Myanmar.
- Gezgin, D. M., Sumuer, E., Arslan, O., & Yildirim, S. (2016). Nomophobia Prevalence among Preservice Teachers: A case of Trakya University. *ResearchGate*, 7(1), 86-95.
- Gezgin, D. M., Cakir O., & Yildirim S. (2017). The relationship between levels of Nomophobia prevalence and internet addiction among adolescents. *Eurasian Journal of Educational Research*, 67 (in press).
- Gezgin, D.M. Hamutoglu, N.B., Sezen-Gultekin, G. & Gemikonakli, O. (2018). Relationship between nomophobia and fear of missing out among Turkish university students. *Cypriot Journal of Educational Science*, 13(4), 549–561.
- Jiang, Z., & Zhao, X. (2016). Self-control and problematic mobile phone use in Chinese college students: the mediating role of mobile phone use patterns. *BMC Psychiatry*, 16, 416(2016).
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10, 144–156.
- Kristeller, J. L., & Hallett, C. B. (1999). An exploratory study of a meditation-based intervention for binge eating disorder. *Journal of Health Psychology*, 4, 357–363. Doi: 0.1177/1359105390 040305
- LaRose, R., & Eastin, M. (2004). A social cognitive explanation of internet uses and gratifications: Toward a new model of media attendance. *Journal of Broadcasting and Electronic Media*, 48, 358-377. <http://dx.doi.org/10.1207/s15506878jobem48032>

- Maeng, S., & Arbeau, K. (2018). The struggle is real: Fear of missing out (FoMO) and Nomophobia can, but do not always occur together. Trinity Western University: Dr. Kelly J.Arbeau.
- Przybylski, A.K., Murayama, K., DeHaan, C.R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841-1848.
- Şakiroğlu, M., Gülada, G., Uğurcan, S., Kara, N., & Gandur, T. (2017). The Mediator Effect of Mindfulness Awareness on the Relationship between Nomophobia and Academic University Adjustment Levels in College Students. *International Journal of Psycho-Educational Sciences*, 6 (3), 69-79.
- Sezer, B., & Atilgan, S. B. C. (2019). The dark side of smartphone usage (Nomophobia): Do we need to worry about it? *Tip Eğitimi Dünyası 2019*; 17(54): 30-43.
- Shonin, E., Van Gordon, W., Slade K., & Griffiths, M. D. (2013). Mindfulness and other Buddhist-derived interventions in correctional settings: a systematic review. *Aggress Violent Behav* 2013; 18 (3): 365-372. [Doi: 10.1016/j.avb.2013.01.002]
- Tozkoparan, S. B., & Kuzu, A. (2019). The relationship between Fear of Missing Out (FoMO) levels and Cyberloafing behaviors of teacher candidates. *Anadolu Journal of Educational Sciences International*, 9(1), 87-110.
- Woodlief, D. T. (2017). Smartphone use and mindfulness: Empirical tests of a hypothesized connection. (Doctoral dissertation). Retrieved from <https://scholarcommons.sc.edu/etd/4241>
- Yildirim, C., & Correia, A. P. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computers in Human Behavior*, 49, 130-137.
- Yildiz-Durak, H. (2017). Investigation of nomophobia and smartphone addiction predictors among adolescents in Turkey: Demographic variables and academic performance. *The Social Science Journal* (2017). Retrieved July 18, 2019 from <https://www.sciencedirect.com/science/article/abs/pii/S0362331918301289>
- Yildiz-Durak, H. (2018a). What would you do without your smartphone? Adolescents' social media usage, locus of control, and loneliness as a predictor of nomophobia. *Addicta: The Turkish Journal on Addiction*, 5(2), 151-163.
- Yogurtcu, D. D. (2018). The Relationship between Five Factor Personality Traits and Nomophobia Levels among University Students. Yeditepe University: Assoc. Prof. Gonca Kizilkaya Cumaoglu.

SOCIAL INTELLIGENCE AND ADJUSTMENT OF HIGH SCHOOL STUDENTS

Sai Ba Nyan¹, Pa Pa Nyein²

Abstract

The main aim of this study is to investigate social intelligence and adjustment of high school students. The research design for the study is quantitative research design and survey method. A total of 1000 high school students from selected six basic high schools in Aungmyaytharsan Township, Mandalay Region, participated in this study. They were selected by using simple random sampling method. Tromso Social Intelligence Scale (TSIS) developed by Silvera, et al. (2001) and Adjustment Inventory for School Students (AISS) developed by Sinha and Singh (1993) were used. The reliability coefficient of TSIS and AISS were 0.620 and 0.821. The results of independent samples *t* test indicated that although there was no significant difference in social intelligence, there was significant difference in adjustment of high school students by gender ($p < 0.01$). The female students were more adjusted than male students. The results of ANOVA indicated that there were significant differences in social intelligence of high school students by parents' education level ($p < 0.01$). Students whose parents with high education level possessed more social intelligence score than those of with low education level. Moreover, the results also indicated that there were no significant differences by parents' job in social intelligence as well as by parents' education level and parents' job in adjustment of high school students. Pearson Product-moment Correlation revealed that social intelligence was positively and significantly correlated with adjustment ($r = 0.351$, $p < 0.001$). Therefore, it can be said that students who possessed more social intelligence may also well in adjustment.

Keywords: Intelligence, Social Intelligence, Adjustment

Introduction

Humans live in many different sizes of societies from small societies like home to cities consisting of millions of people living in close proximity. Although some insects and animals live in colonies comprising millions of individuals, no other species lives in such a variety of social groups as humans. Humans have many needs, derives, motives, goals and desires in their life. Some of them achieved easily or with small efforts. Some are difficult to be fulfilled and some create conflicting and frustrating situations. In such situations humans try their best to fulfill their needs. However, it is important to fulfill their needs according to the norms, ethics, cultures and traditions of society. In this context, social intelligence and well adjustment are essential weapons for humans in trying to fulfill their needs and live in a successful life.

Purpose of the Study

The purpose of the study is to investigate social intelligence and adjustment of high school students.

Definition of Key Terms

Intelligence: Intelligence is a general capacity of an individual consciously to adjust his thinking to new requirements. It is the general mental adaptability to new problems and conditions of life (Stern, 1914, cited in Mangal, 2012).

Social Intelligence: Social intelligence is the ability to understand other people and how they will react to different social situations (Silvera et al., 2001).

¹ Senior Teacher, B.E.H.S (Branch) Man Sant, Mongyai Township, Northern Shan State

² Assistant Lecturer, Department of Educational Psychology, Sagaing University of Education

Adjustment: Adjustment is a continual process by which a person varies his behavior to produce a more harmonious relationship between himself and his environment (Gates & Jersild, 1970, cited in Rohit, 2013).

Review of Related Literature

Social intelligence is the construct including social skills, being intelligent in making relationship which has focus on the successful interactions with other persons (Hopkins & Bilimoria, 2008). It allows an individual to form friendships and alliances and it assists a person against being taken advantage. According to Joseph and Lakshmi (2010), social intelligence paves the way for social reform and activities that seek to develop human well-being, intensify civic culture, increase commitment to other human beings, and bring about positive changes in society.

Social intelligence is something which individuals can work over and improve by paying attention to social world around, by becoming an active listener and a better speaker or conservationist. For people to have social intelligence, they must be aware of their surroundings (Joy, 2019). Consequently, individuals who are socially intelligent appear to experience better patience, cooperativeness, sensitivity, recognition, tactfulness, confidence level, sense of humor, a rich and meaningful life as well as have enhanced social problem-solving abilities (Nagra, 2014).

But behaviors and characteristics considered socially intelligent in one culture may not be considered socially intelligent in other culture. In different cultures, there may be different aims and objectives of the behaviors assumed as socially intelligent (Praditsang, Hanafi & Walters, 2015). In short, social intelligence is regarded as a function of a particular culture where the person lives (Dong, Koper & Collaco, 2008).

The first psychologist who is recognized as to academically use the term “social intelligence” is Dewey (1909, cited in Bennett, 2015). In his book *Moral Principles in Education*, Dewey defined social intelligence as “the power of observing and comprehending social situations”. Later in 1920, Thorndike would popularize the construct where he suggested that social intelligence was one of the three components of intelligence, the others being abstract and mechanical intelligence. Thorndike defined social intelligence as “the ability to understand and manage men and women, boys and girls—to act wisely in human relations”.

According to Goleman (2006), social intelligence can be organized into two broad categories: (a) social awareness: what a person senses about others and (b) social facility: what a person then does with that awareness.

(a) Social Awareness

Social awareness refers to a spectrum that runs from instantaneously sensing another’s inner state, to understanding her feelings and thoughts, to “getting” complicated social situations. It includes:

- Primal empathy: Feeling with others; sensing non-verbal emotional signals.
- Attunement: Listening with full receptivity; attuning to a person.
- Empathic accuracy: Understanding another person’s thoughts, feelings, and intentions.
- Social cognition: Knowing how the social world works.

(b) Social Facility

Simply sensing how another feels, or knowing what they think or intend, does not guarantee fruitful interactions. Social facility builds on social awareness to allow smooth, effective interactions. The spectrum of social facility includes:

- Synchrony: Interacting smoothly at the nonverbal level.

- Self-presentation: Presenting ourselves effectively.
- Influence: Shaping the outcome of social interactions.
- Concern: Caring about others' needs and acting accordingly.

Adjustment is the main component part of human life. Living is a process of adjustment and it is a process of unique importance in human life. It is a satisfactory and harmonious relationship of an organism to its environment. Therefore, the term adjustment may be defined as "the process of finding and adopting modes of behavior suitable to the environment or to the changes in the environment" (Brar & Singh, 2014). In another word, adjustment is defined as a process wherein one builds variations in the behavior to achieve harmony with oneself, others or the environment with an aim to maintain the state of equilibrium between the individual and the environment. This equilibrium has three major components; firstly, the individual's capacity for learning new social skills which would allow him or her to deal with the new environment, secondly, his or her motivation to succeed in a new environment and thirdly, his or her personal characteristics which would create the psychological climate in which the first two factors can function (Mechanic, 1974, cited in Sharp-Paul, 2000).

The term adjustment is often used as a synonym for accommodation and adaptation to represent the alternations of oneself or environment as a means of adjustment (Piaget, 1952, cited in Sarsani, 2007). It is used to emphasize the individual's struggle to along or survive in his or her social and physical environment (Raju & Rahamtulla, 2007). According to Gates and others, the term adjustment has two meanings (Sharma, 2016b). In one sense it is a continuous process by which a person varies his behavior to produce a more harmonious relationship between himself and environment; in another sense adjustment is a state i.e. the condition of harmony arrived at by the person whom we call adjusted. Psychologists have also interpreted the term adjustment from two important aspects. One is achievement aspect and second one is adjustment as a process. Achievement aspect involves success in adjustment, while adjustment as a process deals with the modes and ways of adjusting to various demands (Lazarus 1976, cited in Pachore, 2012).

The concept of adjustment was originally a biological one and was used in Darwin's (1859, cited in Sharma & Saini, 2013) "Theory of Evolution". It was termed as adaption. Darwin maintained that only those species that who are fit to adapt to the hazards survived (Survival of the Fittest). The biological concept of adaptation has been borrowed by the physiologist and renamed as "adjustment". Adjustment and adaptation together represent the functional perspective for view and understanding human behavior i.e. behavior is seen as having the function of mastering demands that are made upon the individuals by his environment human behavior can be understood by conceiving it as an adjustment to psychological demands (Sharma & Saini, 2013).

Freud postulated the imaginary concepts of 'id', 'ego' and 'superego' for the adjustive and non-adjustive behavior patterns. A person's behavior remains normal and in harmony with his self and his environment to the extent that his ego is able to maintain the balance between the evil designs of his id and the moral ethical standard dictated by his superego. In case the ego is not strong enough to exercise proper control over one's id and superego, malfunction of behavior would result. Two different situations could then arise:

- If the superego dominates then there is no acceptable outlet for expression of the repressed wishes, impulses and appetites of the id. Such a situation may give birth to neurotic tendencies in the individual.

- If the id dominates, then the individual pursues his unbridled pleasure seeking impulses, without care for the social and moral norms. In such a situation the individual may be seen to be engaged in unlawful or immoral activities resulting in maladaptive problem or delinquent behavior (cited in Mangal, 2012).

Methodology

Descriptive research design and survey method were used to examine social intelligence and adjustment of high school students.

Participants of the Study

The participants of this study were Grade 10 and Grade 11 students from six Basic Education High Schools in Aungmyaytharsan Township, Mandalay Region. All of the participants involved in this study were 1000 students (500 males, 500 females) in (2019-2020) academic year.

Instrumentation

For the purpose of measuring social intelligence, Tromso Social Intelligence Scale (TSIS) developed by Silvera, et al. (2001) was used. TSIS is composed of three factors: (a) Social Information Processing (SP), (b) Social Skills (SS) and (c) Social Awareness (SA). Each factor is composed of 7-item. Among the total items of 21, 10 items were positively stated and 11 items were negatively stated.

To measure adjustment of high school students, Adjustment Inventory for School Students (AISS) developed by Sinha and Singh (1993) was used. AISS was composed of three subscales: (a) social adjustment, (b) emotional adjustment and (c) educational adjustment. Each of these subscales is composed of 20 items. Among the total items of 60, 22 items were positively stated and 38 items were negative stated. Individual students responded to both questionnaires using a five-point Likert scales, ranging from “5= strongly agree”, “4= agree”, “3= undecided”, “2= disagree” and “1= strongly disagree” for positive items and “1= strongly agree”, “2= agree”, “3= undecided”, “4= disagree” and “5= strongly disagree” for negative items.

The instruments used in this study were translated from English version to Myanmar version. After preparing the measuring instruments, expert review was conducted for face validity and content validity from Department of Educational Psychology in Sagaing University of Education. After getting permission from the authority concerned, pilot study was made to determine the time necessary for the students to complete the questionnaires and whether there were any unclear statements for them. After making pilot study, the reliability analysis of the instruments was conducted by using Statistical Package for Social Sciences (SPSS) software. As internal consistency, the Cronbach's alpha reliability coefficient of the instruments was 0.620 for social intelligence and 0.821 for adjustment. So, it is acceptable to use the instruments as a reliable tool for this study.

Data Collection Procedure

First, for collecting accurate data for this study, the researcher requested permission from the Head of the Department of Educational Psychology, Sagaing University of Education. Second, permission to collect data was acceded from the respective principals of high school in Aungmyaytharsan Township, Mandalay. With the permission of the respective principals, the data were collected with Grade 10 and Grade 11 students from selected Basic Education High Schools in Aungmyaytharsan Township, Mandalay Region. The questionnaires were administered to Grade 10 and Grade 11 students in the regular classrooms by permission of the assistance of teachers from each selected school. The researcher explained the purpose and the importance of their participation in this study to the participants. Moreover, the researcher

assured the participants about the confidentiality of the study and that their responses would be used only for research purpose. Then the questionnaires were distributed and instructions were given to the participants on how to answer the questionnaires. On average, the students spent about 40 minutes to complete questionnaires.

Findings

The objectives of this study are to explore social intelligence and adjustment of high school students in relation to their gender, parents' job and parents' education and to find out whether there is the relationship between social intelligence and adjustment of high school students.

Table 1 The Results for Independent Samples *t* Test of High School Students' Social Intelligence by Gender

Variable	Gender	N	Mean	Std. Deviation	MD	<i>t</i>	<i>df</i>	<i>p</i>
Social Intelligence	Male	500	65.38	7.720	0.6	1.196	998	.232
	Female	500	64.78	7.980				

As shown in Table 1, the result mentioned that there was no significant difference between male and female students ($t = 1.196$, $p = 0.232$). Therefore, it can be concluded that male and female students have almost equal social intelligence. This may be due to the fact that parents as well as teachers did not discriminate between male and female in paying attention for developing social skills of their children. This result agrees with the study carried out by Gnanadevan (2011), Al-Makahleh and Ziadat (2012), Vardini (2013), See Sir (2014), Dixit and Kaur (2015), Prabu (2015), Rathod (2017), Rani (2017) and Saw Saw Mon (2018). But it is not in line with the studies conducted by Saxena and Jain (2013), Rathore and Mishra (2015).

Table 2 ANOVA Result for Social Intelligence by Father's Job

Variable	Father's Job	N	Mean	Std. Deviation	<i>F</i>	<i>p</i>
Social Intelligence	Civil Servant	118	66.71	8.132	1.762	.118
	Driver	142	65.15	8.112		
	Merchant	203	65.43	7.951		
	Craftsman	139	64.89	7.504		
	Laborer	186	64.80	7.956		
	Others	212	64.16	7.478		

Table 2 pointed out that there was no significant difference of students' social intelligence level in relation to their father's job ($F(5, 994) = 1.762$, $p = 0.118$).

Table 3 ANOVA Result for Social Intelligence by Mother's Job

Variable	Mother's Job	N	Mean	Std. Deviation	<i>F</i>	<i>p</i>
Social Intelligence	Civil servant	67	65.15	9.460	.032	.992
	Dependant	536	65.01	7.768		
	Merchant	258	65.18	7.989		
	Others	139	65.12	7.125		

According to Table 3, there was no significant difference among high school students' social intelligence with their mother's job ($F(3,996) = 0.032, p = 0.992$). It can be interpreted that mother's job may not affect on social intelligence of high school students.

Therefore, both father's and mother's job have no impact on social intelligence of high school students in the current study. This may be due to the fact that although parents have different jobs, they may originally be good in social communication so that they are able to teach their children how to behave and what to speak for better social communication. The result is in line with the studies conducted by Gnanadevan (2011) and See Sir (2014).

Table 4 ANOVA for Social Intelligence by Father's Education Level

Variable	Father's Education Level	N	Mean	Std. Deviation	F	p
Social Intelligence	Primary	260	64.42	8.101	5.041**	.007
	Middle	426	64.63	7.212		
	High and above	314	66.23	8.361		

Note: **The mean difference is significant at 0.01 level.

Table 4 showed that there was significant difference of students' social intelligence regarded with their father's education level ($F(2,997) = 5.041, p = 0.007$) at 0.01 level. Next, post hoc test was consequently executed to examine which level of father's education influenced social intelligence of the students by using Tukey (HSD) method.

Table 5 Results of Post Hoc Test by Tukey (HSD) Method for High School Students' Social Intelligence by Father's Education Level

Variable	Father's Education I Type	Father's Education J Type	Mean Differences (I-J)	p
Social Intelligence	High and above	Primary	1.817*	.016
		Middle	1.599*	.017

Note: * The mean difference is significant at 0.05 level.

According to the Table 5, students whose father's education level are high school and above education level possessed more social intelligence than those of father's education level are primary and middle school education levels. Therefore, it can be concluded that father's education level was one of the factors that has an impact on social intelligence of their children.

Table 6 ANOVA Result for Social Intelligence by Mother's Education Level

Variable	Mother's Education Level	N	Mean	Std. Deviation	F	p
Social Intelligence	Primary	349	64.38	8.192	4.823**	.008
	Middle	393	64.88	7.043		
	High and above	258	66.33	8.418		

Note: **The mean difference is significant at 0.01 level.

Table 6 showed that there was significant difference in students' social intelligence regarded with their mother's education level ($F(2,997) = 4.823, p = 0.008$) at 0.01 level. Next, post hoc test was consequently executed to examine which level of mother's education influenced social intelligence of the students by using Games-Howell method.

Table 7 Results of Post Hoc Test by Games-Howell Method for High School Students' Social Intelligence by Mother's Education Level

Variable	Mother's Education I Type	Mother's Education J Type	Mean Differences (I-J)	p
Social Intelligence	High and above	Primary	1.951*	.012
		Middle	1.449	.058

Note: *The mean difference is significant at 0.05 level.

According to the Table 7, students whose mother's education level are high school and above education level possessed more social intelligence scores than those whose mother's education level are primary school education level. From this point, mother's education level should be considered as one of the factors that affect on students' social intelligence level.

Therefore, in the current study, it was found that both father's and mother's education level had an impact on social intelligence of their children somewhat. This may be due to the fact that parents with high education level themselves possessed good social skills, the ability in understanding others' intentions and valued aspects of others so that they are enable to train their children to become a person good in social skills like them. The result agrees with the study carried out by See Sir (2014).

Table 8 The Results for Independent Samples *t* Test of High School Students' Adjustment by Gender

Variable	Gender	N	Mean	Std. Deviation	MD	<i>t</i>	<i>df</i>	<i>p</i>
Adjustment	Male	500	208.82	24.162	-4.32	-2.930**	998	.003
	Female	500	213.14	22.512				

Note: ** The mean difference is significant at the 0.01 level.

As shown in Table 8, the result mentioned that there was a significant difference between male and female students ($t = -2.930$, $p = 0.003$) at 0.01 level. According to the Table 8, the mean score of female students (213.14) was higher than male students (208.82) so it can be concluded that female students were better in adjustment than male students. This may be due to the fact that female students are better in understanding of the lessons taught in the class and so, they are satisfied with the progress in their studies. Generally, they also do not show any impertinence (arrogance) towards others. As a result, they become more adjusted towards themselves as well as towards their peers, teachers and others. The result agrees with some studies carried out by Patel (2013), Bharvad (2015), Rathore and Mishra (2015), Preeti, et al. (2016), Sharma (2016), Hsu MyatNwe (2017) and Thet Thet Mar (2017). Some studies explored that there was no significant difference between male and female (Sarsani, 2007; Ghaonta, 2013; Dixit & Kaur, 2015; Sharma & Godiyal, 2015; Kundu, Saha, & Mondal, 2015; Sarita & Singh, 2018). But some studies found that males are better adjustment than females (Srivastava & Barmola, 2012; Jain, 2017).

Table 9 ANOVA Results for Adjustment by Father's Job

Variable	Father's Job	N	Mean	Std. Deviation	F	p
Adjustment	Civil Servant	118	215.58	22.692	1.573	.165
	Driver	142	211.04	25.044		
	Merchant	203	209.10	22.137		
	Craftsman	139	209.72	22.607		
	Laborer	186	212.57	22.537		
	Others	212	209.61	25.051		

Table 9 pointed out that there was no significant difference of students' adjustment in relation to their father's job ($F(5, 994) = 1.573, p = 0.165$).

Table 10 ANOVA for Adjustment by Mother's Job

Variable	Mother's Job	N	Mean	Std. Deviation	F	p
Adjustment	Civil servant	67	209.24	23.589	1.279	.280
	Dependant	536	211.78	23.809		
	Merchant	258	208.86	22.869		
	Others	139	212.66	22.899		

According to Table 10, there was no significant difference among high school students' adjustment with their mother's job ($F(3, 996) = 1.279, p = 0.280$). Therefore, it can be concluded that mother's job does not affect on high school students' adjustment.

Hence, it can be concluded that both father's and mother's job have no affect on adjustment of students in the current study. This may be due to the fact that although parents have different jobs, they may be able to maintain a balance between their children's needs and their capacity to fulfill these needs so that their children generally become adjusted individuals. The result is not consistent with the study conducted by Raju and Rahamtulla (2007).

Table 11 ANOVA Result for Adjustment by Father's Education Level

Variable	Father's Education Level	N	Mean	Std. Deviation	F	p
Adjustment	Primary	260	210.53	22.789	.704	.495
	Middle	426	210.30	23.567		
	High and above	314	212.27	23.819		

Table 11 showed that there was no significant difference of students' adjustment regarded with their father's education level ($F(2, 997) = 0.704, p = 0.495$).

Table 12 ANOVA Result for Adjustment by Mother's Education Level

Variable	Mother's Education Level	N	Mean	Std. Deviation	F	p
Adjustment	Primary	349	209.32	23.616	1.725	.179
	Middle	393	211.23	23.448		
	High and above	258	212.85	23.121		

Table 12 showed that there was no significant difference of students' adjustment regarded to their mother's education level ($F(2,997) = 1.725, p = 0.179$). It can also be concluded mother's education level was not a factor that affect on adjustment of high school students.

Therefore, in the current study, it can be concluded that both father's and mother's education level did not influence on adjustment level of students. This may be due to the fact that although parents have different education levels, they may not be absent in teaching their children to have good will, avoid verbal pathologies and abandon toxic behaviors so that they can live harmoniously with other people. The result is not in line with the study conducted by Raju and Rahamtulla (2007).

Table 13 Relationship between Social Intelligence and Adjustment

Variables	Social Intelligence	Adjustment
Social Intelligence	1	.351**
Adjustment	.351**	1

Note: ** Correlation is significant at the 0.01 level (2-tailed).

By the result of Table 13, there was a statistically significant positive relationship between social intelligence and adjustment at 0.01 level and it was a moderate correlation. Henceforth, it can be interpreted that the high in social intelligence indicates the high in adjustment. The result is consistent with the findings of the studies conducted by Kundu, Saha and Mondal (2015) and Dixit and Kaur (2015).

Conclusion

For a student or any person to be socially intelligent and have adjustment, he needs to mould himself according to the needs of the society. He has to think rationally, act purposefully and deal effectively with the environment. While living in a society, he should live with love, co-operation and kindness. It is because every society has certain customs, traditions, norms and ideals, the fulfillment of which is the primary responsibility of man, so that he can reside well in the society.

Acknowledgements

We would like to offer respectful appreciation to Dr. Saw Pyone Naing (Rector, Sagaing University of Education), Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education), Dr. Khin Hnin Nwe (Professor and Head of Department, Department of Educational Psychology, Sagaing University of Education) and Headmasters and Headmistresses from selected high schools from Aungmyaytharsan Township, Mandalay for their permission to conduct this study.

References

- Al-Makahleh, A. A. A., & Ziadat, A. H. (2012). Social intelligence and personal characteristics of talented secondary school students in King Abdullah II schools for excellence, Jordan. *Educational research*, 3(10), 785-798.
- Bennett, R. (2015). *Social Intelligence of Undergraduates Enrolled in Traditional vs. Distance Higher Education Learning Programs*. Ph.D. thesis, Walden University.
- Bharvad, M. B. (2015). A study of emotional intelligence and adjustment among school students. *The International Journal of Indian Psychology*, 2(2), 24-31.
- Brar, S. & Singh, A. J. (2014). Personality traits of female prisoners in relation to their adjustment problems. *International Journal of Education and Management Studies*, 4(4), 293-299.
- Dixit, M., & Kaur, P. (2015). Study of social intelligence and adjustment among pupil teachers in relation to their gender and locality. *International Journal of Applied Research*, 1(7), 90-93.

- Dong, Q., Koper, R. J., & Collaco, C. M. (2008). Social intelligence, self-esteem, and intercultural communication sensitivity. *Intercultural Communication Studies*, 17(2), 162-172.
- Ghaonta, I. (2013). *Academic motivation and adjustment of secondary school students as related to self-confidence and certain demographic variables*. Retrieved September 2, 2019, from <https://shodhganga.inflibnet.ac.in/bitstream/10603/203598/1/thesis.pdf>
- Gnanadevan, R. (2011). Social intelligence of higher secondary students in relation to their socioeconomic status. *Journal of Education Studies, Trend and Practice*, 1(1), 61-66.
- Goleman, D. (2006). *Social intelligence: the new science of human relationships*. Random house.
- Hopkins, M. M., & Bilimoria, D. (2008). Social and emotional competencies predicting success for male and female executives. *Journal of Management Development*, 27(1), 13-35.
- Hsu MyatNwe. (2017). *A study on emotional intelligence and adjustment of students from the selected teacher education institutions in Sagaing Region*. Unpublished master thesis. University of Education, Sagaing.
- Jain, P. (2017). Adjustment among college students. *International Journal of Advances in Scientific Research and Engineering (ijasre)*, 3(5), 10-12.
- Joseph, C., & Lakshmi, S. S. (2010). Social intelligence, a key to success. *The IUP Journal of Soft Skills*, 4(3), 15-21.
- Joy, M. (2019). Social intelligence and flexible locus of control among college students. *IOSR Journal of Computer Engineering (IOSR-JCE)*, 21(2), 79-83.
- Kundu, M., Saha, B., & Mondal, B. C. (2015). Adjustment of undergraduate students in relation to their social intelligence. *American Journal of Educational Research*, 3(11), 1198-1201.
- Mangal, S. K. (2012). *Advanced educational psychology (2nd edition)*. New Delhi: Asoke K. Ghosh, PHI Learning Private Limited.
- Nagra, V. (2014). Social intelligence and adjustment of secondary school students. *Paripex - Indian Journal of Research*, 3(4), 86-87.
- Nazir, A., Tasleema, & Ganai, M. Y. (2015). Social intelligence and academic achievement of college students – A study of District Srinagar. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, 20(2), 74-76.
- Pachore, S. S. (2012). *A study of adjustment, anxiety and neurotic tendencies of old age people*. Retrieved September 6, 2019, from https://shodhganga.inflibnet.ac.in/bitstream/10603/77684/8/08_chapter-1.pdf
- Patel, H. T. (2013). A study on emotional intelligence and adjustment of 9th standard students. *International Journal for Research in Education*, 2(6), 24-25.
- Prabu, P. S. (2015). A study on social intelligence among arts and science college students. *Scholarly research journal for humanity science and English language*, 2(3), 1050-1056.
- Praditsang, M., Hanafi, Z., & Walters, T. (2015). The Relationship among Emotional Intelligence, Social Intelligence and Learning Behaviour. *Asian Social Science*, 11(13), 98-107.
- Preeti, Kumar, R., Behmani, R., & Singh, K. (2016). Impact of self esteem and adjustment on academic performance of adolescents. *Indian Journal of Health and Wellbeing*, 7(1), 133-135.
- Raju, M. V. R., & Khaja Rahamtulla, T. (2007). Adjustment problems among school students. *Journal of the Indian Academy of Applied Psychology*, 33(1), 73-79.
- Rani, P. (2018). Social intelligence of B.Ed. students in relation to their gender and locality. *Scholarly Research Journal for Humanity Science & English Language*, 6(26), 7732-7736.
- Rathod, S. K. (2017). A study of social intelligence and personality among adolescence. *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 6(5), 36-39.
- Rathore, Y., & Mishra, S. (2015). A comparative study of adjustment and social intelligence of urban higher secondary school students in relation to their gender. *International Journal of Multidisciplinary Research and Development* 2015, 2(2), 149-151.
- Rohit. V. K. (2013). The psychological adjustment among male and female willing to take divorce: a comparative study. *The International Journal of Indian Psychology*, 1(1), 39-46.

- Sarita, k. & Singh, S. (2018). A study of an adjustment of prospective teachers in relation to introversion-extroversion. *Educational Quest; New Delhi*, 9(1), 99-106.
- Sarsani, M. R. (2007). A study of the relationship between self-concept and adjustment of high school students. *i-manager's Journal on Educational Psychology*, 1(2), 10-18.
- Saw Saw Mon. (2018). *A study on social intelligence and social problem solving skills of Grade 9 students in Kanbalu Township*. Unpublished master thesis. University of Education, Sagaing.
- Saxena, S. & Jain, R. K. (2013). Social intelligence of undergraduate students in relation to their gender and subject stream. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 1(1), 1-4.
- See Sir. (2014). *A study on social intelligence of high school students in Homalin and Leshi Township*. Unpublished master thesis, University of Education, Sagaing.
- Sharma, P., & Saini, N. (2013). Health, social and emotional problems of college students. *Journal of humanities and social science*, 5(14), 21-34.
- Sharma, S. & Bhatia, R. B. (1989). *Dictionary of Psychology*. New Delhi: Anmol Publication.
- Sharma, S. (2016). Comparison of adjustment of school teachers of below 35 years of age with the teachers of 35 years of age or above. *Online International Interdisciplinary Research Journal*, 5 (3), 211-217.
- Sharma, S., & Gordiyal, S. (2015). Adjustment of the secondary schools teachers. *Indian Streams Research Journal*, 5(10), 1-4
- Sharp-Paul, C. F. (2000). *A study of the adjustment problems experienced by workers undertaking short term international relocation*. Retrieved August 30, 2019, from <https://ro.ecu.edu.au/theses/1395>.
- Silvera, D. H., Martinussen, M. & Dahl, T. I. (2001). The Tromso Social Intelligence Scale, a self-report measure of social intelligence. *Scandinavian Journal of Psychology*, 42, 313-319.
- Srivastava, S. K. & Barmola, K. H. (2012). Social support and adjustment of students. *Social Science International*, 28(2), 303-317.
- ThetThet Mar. (2017). *The effect of emotional autonomy and parent-adolescent communication on the adjustment of undergraduate students in Sagaing District*. Unpublished master thesis. University of Education, Sagaing.
- Vardhini, S. V. (2013). Social intelligence of university students. *Conflex Journal*, 1(3), 1-5.

PERSONALITY TRAITS AND INTERPERSONAL COMMUNICATION SKILLS OF GRADE 9 STUDENTS IN KAWLIN TOWNSHIP

Htun Naing Oo¹, Tin Mar Naing²

Abstract

The main purpose of this study was to investigate personality traits and interpersonal communication skills of Grade 9 students in Kawlin Township. The quantitative research design and survey method were used in this study. A total of 1008 (male=504, female=504) Grade 9 students were randomly chosen from Kawlin Township. In this study, Big Five Inventory (BFI) developed by John and Srivastava (1999) and Interpersonal Communication Inventory (ICI) developed by Bienvenu (1974) to explore the personality traits and interpersonal communication skills of Grade 9 students were used. The reliability coefficients of BFI and ICI questionnaires were 0.811 and 0.737. After that, the data were analyzed by using descriptive statistics, independent samples *t* test and ANOVA. Most of the students possess Conscientiousness and less of the students were Neuroticism. In examining the gender differences in percentage of participants' personality traits, the percentage of males had higher than females in Openness to Experience, Conscientiousness, Agreeableness, Neuroticism, and Mix Traits while the number of females was more than males in Extraversion. According to the descriptive statistics, the Grade 9 students from Kawlin Township were good in interpersonal communication skills. The result of independent samples *t* test showed that there was significant difference in interpersonal communication skills in which females were greater than males. By subject combination, there was significant difference in interpersonal communication skills. The Combination-1 students were stronger in interpersonal communication skills than the Combination-7 students. Furthermore, the result of ANOVA showed that there was significant difference in interpersonal communication skills in which the Grade 9 students from School-2 were the highest. According to mother's job, there was significant difference in interpersonal communication skills in which farmers were greater than others. Then, the Grade 9 students from Kawlin Township had different interpersonal communication skills by personality traits.

Keywords: Personality, Personality Traits, Interpersonal Communication Skills

Introduction

The human being is a social being and requires communication with others. The exchange of ideas, beliefs, and feelings initiates through the process of communication. Communication is an active process; therefore, it can be influenced by various environmental or interpersonal factors. The personality pattern of individuals seems to be one of the important factors influencing individuals' communication pattern. Personality is the largest, most powerful, and most effective factor of stability affecting the attitude, feelings, beliefs, and behaviors of the humankind.

Importance of the Study

There is a fundamental, powerful and universal desire among humans to interact with others. The communication process is different for different people because different people have different interpersonal communication skills. In order for any relationship to work properly, people have to learn to communicate effectively with each other. The success of any relationship relies on the ability to communicate well. Effective interpersonal communication skills are based on the way people talk, listen, write and respond through people's body language because they take more than words to create a safe and secure relationship. Communication importance is not shared by everyone. Some people value the ability to communicate effectively more than others.

¹ Senior Assistant Teacher, Basic Education High School, Gyodaung, Wuntho

² Lecturer, Department of Educational Psychology, Sagaing University of Education

Personality is a key phenomenon for explanation of interpersonal communication skills. Human's activities determine the features of the personality to the largest extent, and accordingly humans have deciding role in its interpersonal communication skills. In order to live in a congenial environment, the most basic factor is the individual's interpersonal communication skills which plays an important role in human development (Bateson, 1980, cited in Sias, Krone, & Jablin, 2002).

Interpersonal communication is an important thing in our daily life. Almost every day a person will communicate with each other either at work, at school, at college, at home or in public places. According to Beebe, Beebe and Redmond (1999), most people spend as much as 80 to 90 percent of the time awake with interpersonal communication.

To develop interpersonal communication skills, one of the essential things is personality. Good personality plays a crucial role for one's interpersonal communication skills. Personality helps individuals to express their interpersonal communication skills in the most convincing way. Depending on the way humans understand personality, humans are going to regard the influence of the personality on the interpersonal communication skills in the same way. Perception of a personality as a collection of multitudes of features requires that a research should be directed towards finding those characteristics of the personality that are important for the interpersonal communication skills.

Personality traits and interpersonal communication skills are main foundations for people's interaction with others, the potential for impact of these influences on student retention appears worthy of examination. Not all people are blessed with excellent interpersonal communication skills and good personality; people acquire the same with time and practice. People with great interpersonal communication skills tend to have a better and impressive personality than those who have problems in communicating as interacting with others is not a challenge for them. Individuals with effective interpersonal communication skills can easily converse with other people around be individual's fellow workers, peers, family and so on. Therefore, the study of human's personality traits and interpersonal communication skills is a major assistant in the advancement of learning process as good personality and effective interpersonal communication skills can support good learning process.

Based on the above reasons, this study aimed to investigate personality traits and interpersonal communication skills of Grade 9 students in Kawlin Township. It is essential to produce future generations of Myanmar with winning personality traits and interpersonal communication skills. In Myanmar, as the nation is emphasizing on promotion of quality socialization, researches on personality traits and interpersonal communication skills are still in need.

Aim of the Study

The main aim of the research is to investigate personality traits and interpersonal communication skills of Grade 9 students in Kawlin Township.

The specific objectives of the study are as follows:

- (i) To study personality traits of Grade 9 students with respect to gender.
- (ii) To explore interpersonal communication skills of Grade 9 students by gender, subject combination, and school.
- (iii) To find out interpersonal communication skills of Grade 9 students according to mother's job.
- (iv) To examine the differences in interpersonal communication skills of Grade 9 students by personality traits.

Definitions of the Key Terms

Personality may be defined in terms of attributes or qualities, that are highly typical of an individual and is an important part of the overall impression created on others (Hall & Lindzey, 1991, cited in Paraveen, 2007).

Personality traits refer to enduring patterns of thought, emotion and behavior that are not likely to change over time and explain people's behavior across different situations (McCrae & John, 1992).

Interpersonal communication skills are defined as ability to work well with people and involve the acceptance of others without prejudice (Smith, 2009).

Review of Related Literature

Big-Five Personality Traits: Waston (1990) defined personality as "personality is the sum of activities that can be discovered by actual observations over long enough period of time to give reliable information" (as cited in Mangal, 2004). Traits may be defined as relatively permanent and relatively consistent general behavior patterns that an individual exhibit in most situations. If a person behaves honestly in several situations, his behavior may be generalized and he may be labelled as honest and honesty is then said to be a behavioral trait of his personality.

Personality refers to be important and relatively stable aspects of behavior. Personality deals with a wide range of human behavior. To most theorists, personality includes virtually everything about a person - mental, emotional, social, and physical. Some aspects of personality are unobservable, such as thoughts, memories, and dreams whereas others are observable, such as overt actions. Personality also includes aspects that are concealed from yourself, or unconscious, as well as those that are conscious and well within your awareness (Ewen, 2003).

Every personality is the product of heredity and environment. Both these contribute significantly towards the development of the child's personality. Therefore, not only heredity but also factors like constitutional make-up, social and cultural influences as well as experience and training etc., all affect one's personality. Personality is sometimes subjected to disorganization and disintegration, leading to serve personality disorders on account of factors and conditions like severe anxiety, stress, traumatic experiences, prolonged illness, infections, and damage to the brain and nervous system. Every person's personality has one more distinguishing feature that is aiming to an end or towards some specific goals.

Personality is often interpreted as the sum of one's subjective ways of identifying oneself in distinction to the environment. The term "personality" confused, however, with the idea of the "self". The self is regarded as a representation of the whole human being whereas personality is merely a portrayal of a portion of the entire identity of an individual (Priddy, 2012). The concept of personality is not exclusive to the concept of the self, but is in fact fundamentally linked, providing theorists in the field of psychology with a more coherent set of principles to explore the personal aspects of the self (Brinich & Shelly, 2002).

Some psychologists define personality in terms of its social stimulus value. Generally, people use this concept of personality in selecting applicants for various jobs and courses. The interviewers take into consideration the total picture of an individual's organized behavior. An individual attempt to adjust the environment. Every individual develops own unique way of adjustment in the society. The unique impression that a person makes on others is equally important in understanding personality. Therefore, personality is an individual's characteristic pattern of behavior.

The Big-Five traits are the best predictors for describing personality traits today. These big-five personality traits are Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (Costa & McCrae, 1992; McCrae & John, 1992; John & Srivastava, 1999). Openness to Experience refers to the tendency of the individual to be imaginative, sensitive, original in thinking, appreciative of art, intellectually curious, and sensitive to beauty (Costa & McCrae, 1992; John & Srivastava, 1999). Conscientiousness is an individual's propensity for planning, organizing, carrying out tasks, and for being reliable, purposeful, strong-willed and determined (Costa & McCrae, 2006, cited in Corcoranl & Flaherty, 2016). Extraversion is indicated by positive feelings (emotions) and tendency to seek company of others. Agreeableness refers to the tendency to be trusting, compliant, caring, considerate, generous, and gentle. Neuroticism is the tendency to experience negative emotions, such as anger, anxiety, or depression. It is sometimes called emotional instability (Costa & McCrae, 1992). The development of personality is influenced by major five factors namely: heredity, physique, family, school, and early experience (as cited in Ewen, 2003).

Interpersonal Communication Skills: Communication is the transfer of information from one person to another. Interpersonal communication skill is a pretty common feature of our daily lives. The concept of interpersonal communication skills was firstly introduced in 1950s (Berko, 1998, cited in Htet Htet Win, 2013). It is related with interpersonal intelligence. Personal intelligence is important for interpersonal communication skills because a person who is good in personal intelligence will be good in interpersonal communication skills.

The Latin term for communication is “*communitas*”, which means to share, or commonness (Gayeski, 1993, cited in Graham, 1998). In simplest terms, the goal of communication is to develop a commonness of meaning allows two or more people to transfer information, and to define or understand respective realities, so other human activities can be achieved (Northcraft & Neal, 1994, cited in Graham, 1998). According to Knapp and Augustine (2002), interpersonal communication skill is defined as the ability to relate to people in non-verbal as well as verbal communication. This type of communication can occur in both a one-on-one and a group setting (as cited in Tin Zar Win Pyae, 2018). Interpersonal communication is a specific area within the domain of communication that usually refers to face-to-face interactions among two or more persons (Gibson, Ivancevich, & Donnelly, 1994, cited in Graham, 1998).

Constructivism is a communication theory that seeks to explain individual differences in people's ability to communicate skillfully in social situations (Griffin, 2009). Constructivism is largely focused on functional communication skills, which concern producing messages and interpreting the message of others in ways that facilitate goal achievement. Functional communication skills are very important in everyday life, and mastery of these skills leads to several forms of personal and professional success. Constructivism maintains that people actively interpret their experiences, and these interpretations are the major influence on their behavior. People differ in the complexity have important implications for social perception skills, message production skills, and message reception skills. Childhood socialization factors influence the development of cognitive complexity and associated communication skills. Delia (1977) stated that man's constructs are responsive to their own reality and transforms into greater complexity as people give reason to broader and more refined experience constructs.

Howard Gardner (1983) defined interpersonal and intrapersonal intelligences as personal intelligence that is important for interpersonal communication skills because a person who is good personal intelligence will be good in interpersonal communication skills. According to Bienvenu (1974), being an effective communicator was based on five interpersonal

components (as cited in Pfeiffer et al., 1974). They are: self-concept, listening, clarity of expression, coping with feelings and emotions, and self-disclosure.

Methodology

Research Design and Method

In this study, descriptive survey research design and quantitative research method were used.

Participants

Table 1 Number of Grade 9 Students Participated in the Study

No.	Name of School	Male	Female	Total
1	No.1 B.E.H.S Kawlin	126	126	252
2	No.2 B.E.H.S Kawlin	126	126	252
3	B.E.H.S Mingyan	126	126	252
4	B.E.H.S Oakkan	126	126	252
	Total	504	504	1008

Instrumentation

Big Five Inventory (BFI): In order to determine the personality traits of Grade 9 students, Big Five Inventory (BFI) developed by John and Srivastava (1999) was used. It was composed of 44 items. To collect the responses, four-point Likert scales was used.

Interpersonal Communication Inventory (ICI): For investigating interpersonal communication skills of the participants, Interpersonal Communication Inventory (ICI) developed by Bienvenu (1974) was adapted and applied. It was composed of 40 items. To analyze the responses, four-point Likert scales was used.

Data Analysis and Findings

Number of Participants for Big Five Personality Traits

Personality traits consisted of five dimensions; Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. The number of participants in describing students' personality traits was shown in Table 2.

Table 2 Number of Participants for Personality Traits

Personality Traits	No. of Participants
Openness to Experience	174
Conscientiousness	298
Extraversion	190
Agreeableness	225
Neuroticism	42
Mix Traits	79
Total	1008

Table 2 showed that the number of participants in describing students' personality traits was a little different from each other. The number of participants for Openness to Experience, Conscientiousness, Extraversion, Agreeableness, Neuroticism, and Mix Traits was 174, 298, 190, 225, 42, and 79. Most of the students possess Conscientiousness and less of the

students were Neuroticism. The number of Mix Traits was 79 that is the number of students who possess more than one personality trait.

Therefore, the Grade 9 students from Kawlin Township had the highest in Conscientiousness characters such as persistent, ambitious, thorough, self-disciplined, consistent, predictable, controlled, reliable, resourceful, hardworking, energetic, persevering, planner, and so on. It can be concluded that schools from Kawlin Township act in socially acceptable ways and behaviors that facilitate goal-directed behaviors. These actions can improve Grade 9 students' propensity for planning, organizing, carrying out tasks, and for being reliable, purposeful, strong-willed and determined. Thus, Grade 9 students from selected schools may possess more in Conscientiousness character. And all of them have the lowest in the Neuroticism subscale. So, they are typically very calm and relatively unaffected by stress that might result in ineffective behavior in others. They are less easily upset and are less emotionally reactive.

Comparison for Personality Traits of Grade 9 Students by Gender

The number of participants in describing students' personality traits by gender was shown in Table 3.

Table 3 Number of Participants for Personality Traits by Gender

Personality Traits	Gender		Total
	Male	Female	
Openness to Experience	94(18.65%)	80(15.87%)	174
Conscientiousness	153(30.36%)	145(28.77%)	298
Extraversion	62(12.30%)	128(25.40%)	190
Agreeableness	116(23.02%)	109(21.63%)	225
Neuroticism	31(6.15%)	11(2.18%)	42
Mix Traits	48(9.52%)	31(6.15%)	79
Total	504	504	1008

In examining the gender differences in percentage of participants' personality traits, the percentage of males had higher than females in Openness to Experience, Conscientiousness, Agreeableness, Neuroticism, and Mix Traits while the number of females were more than males in Extraversion. It was consistent with the previous research conducted by Shoaib Kiani (2010) who indicated that females had higher mean scores in Extraversion than males. The female Grade 9 students were higher in Extraversion than male Grade 9 students. It may be due to the fact that females had more confidence in arguing about something and more talkative than males.

According to the result, male students had more anger, anxiety, depression, and pressure than female students. It was not consistent with the real state because females were more anxious and had more pressure than males in reality. This may be because male students in the study were under 17 and they were not mature and so they may not be careful about their future planning and cautious for their surroundings and accommodating and helping others to resolve issues by creating win-win situation by their flexible attitude. It was consistent with the previous research of Ei Ei Mar (2016) that boys were higher than girls in Neuroticism.

With age of males and females, Neuroticism, Extraversion, and Openness to Experience decrease whereas Agreeableness increases. Conscientiousness increases until 55 or 60 years of age and decreases thereafter. Roughly speaking, with age, people tend to become less Openness to Experience but more sociable. Some major life events might also have an

impact on the expression of personality traits. The expression of traits depends on the environment, and each person's behavior has to be adapted to the moment and to the circumstances. Thus, a person's level of anxiety varies all of the time according to circumstances, but his or her usual or average level of anxiety might be the expression of the underlying disposition (Zuckerman, 1991, cited in Rossier, 2013).

Descriptive Statistics for Interpersonal Communication Skills of Grade 9 Students

In order to compare the mean scores of Grade 9 students' interpersonal communication skills, the descriptive statistics was conducted (see Table 4).

Table 4 Descriptive Statistics for Interpersonal Communication Skills of Grade 9 Students

Component	No. of items	Minimum	Maximum	Mean	SD
Interpersonal Communication Skills	40	79	145	116.40	9.972

In Table 4, the observed mean score of Grade 9 students' interpersonal communication skills (116.40) was greater than the theoretical mean score of Grade 9 students' interpersonal communication skills (100). Therefore, it can be said that the interpersonal communication skills of Grade 9 students from Kawlin Township were satisfactory.

Comparison for Interpersonal Communication Skills of Grade 9 Students by Gender

Descriptive statistics was conducted to compare interpersonal communication skills of Grade 9 students by gender (see Table 5).

Table 5 Comparison of Means and Standard Deviations, and Results of Independent Samples *t* Test for Interpersonal Communication Skills of Grade 9 Students by Gender

Component	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Interpersonal Communication Skills	Male	504	113.83	10.270	-8.466***	1006	0.000	-5.141
	Female	504	118.97	8.965				

Note: *** The mean difference was significant at 0.001 level.

When the interpersonal communication skills of Grade 9 students were compared with respect to gender, the female students had slightly higher mean scores in interpersonal communication skills than the male students.

According to the Table 5, there was significant difference in interpersonal communication skills. In this way, the female students were higher in interpersonal communication skills than the male students. It may be due to the fact that females had higher social intelligence than males in reality. This finding was consistent with the previous researches of Ahmetar (2012), and Win Than Kyaw (2016).

Comparison for Interpersonal Communication Skills of Grade 9 Students by Subject Combination

To find the differences for Grade 9 students' interpersonal communication skills between Combination-1 and Combination-7, descriptive statistics was conducted (see Table 6).

Table 6 Comparison of Means and Standard Deviations, and Results of Independent Samples *t* Test for Interpersonal Communication Skills of Grade 9 Students by Subject Combination

Component	Sub: Com:	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Interpersonal Communication Skills	Com-7	504	115.50	10.072	-2.888**	1006	0.004	-1.808
	Com-1	504	117.31	9.798				

Note: **The mean difference was significant at 0.01 level.

When the interpersonal communication skills of Grade 9 students were compared with respect to subject combination, the Combination-1 students had slightly higher mean scores in interpersonal communication skills than the Combination-7 students.

According to Table 6, the result of *t* test showed that there was significant difference in interpersonal communication skills in which the Combination-1 students were stronger than the Combination-7 students. This may be due to the fact that the Combination-7 students were prouder and had the stronger desire for arguing for their opinions and stronger willing to succeed than the Combination-1 students. Thus, the Combination-7 students had a few times to communicate with other people than the Combination-1 students.

Comparison for Interpersonal Communication Skills of Grade 9 Students by School

To find the differences for interpersonal communication skills of Grade 9 students by school, descriptive statistics was conducted. The means and standard deviations of Grade 9 students' interpersonal communication skills were presented in Table 7.

Table 7 Descriptive Statistics for Interpersonal Communication Skills of Grade 9 Students by School

Component	Schools	N	Mean	SD
Interpersonal Communication Skills	School-1	252	111.902	9.321
	School-2	252	121.01	8.792
	School-3	252	117.53	10.299
	School-4	252	115.17	9.179

When the mean scores of Grade 9 students from the four schools were compared with respect to the interpersonal communication skills, it was found that the Grade 9 students from School-2 had slightly higher mean scores in interpersonal communication skills than the Grade 9 students from School-1, School-3, and School-4.

To observe clearly, the significant difference in interpersonal communication skills among Grade 9 students according to school, One Way Analysis of Variance (ANOVA) was conducted again.

Table 8 ANOVA Results for Interpersonal Communication Skills among Grade 9 Students by School

Component		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Interpersonal Communication Skills	Between Groups	11158.241	3	3719.414	41.967***	0.000
	Within Groups	88982.425	1004	88.628		
	Total	100140.66	1007			

Note: *** The mean difference was significant at 0.001 level.

According to ANOVA results, there was significant difference in interpersonal communication skills of Grade 9 students according to school at the 0.001 level.

To obtain more detailed information about this, post-hoc test was executed by Games-Howell method for interpersonal communication skills.

Table 9 Results of Games-Howell for Grade 9 Students' Interpersonal Communication Skills by School

Component	School(I)	School(J)	Mean Difference(I-J)	p
Interpersonal Communication Skills	School-1	School-2	-9.107***	0.000
		School-3	-5.627***	0.000
		School-4	-3.262***	0.000
	School-2	School-1	9.107***	0.000
		School-3	3.480***	0.000
		School-4	5.845***	0.000
	School-3	School-1	5.627***	0.000
		School-2	-3.480***	0.000
		School-4	2.365*	0.034
	School-4	School-1	3.262***	0.000
		School-2	-5.845***	0.000
		School-3	-2.365*	0.034

Note: * The mean difference was significant at 0.05 level.

Note: *** The mean difference was significant at 0.001 level.

The result of post hoc test by Games-Howell Multiple Comparison showed that the Grade 9 students from School-2 possessed higher in interpersonal communication skills than the Grade 9 students from School-1, School-3, and School-4. Moreover, the Grade 9 students from School-3 possessed higher in interpersonal communication skills than the Grade 9 students from School-1, and School-4.

As all schools were under Ministry of Education, curriculum, co-curriculum, contents, and activities were the same. However, the communication skills and school environment of Grade 9 students may not be equal.

Comparison for Interpersonal Communication Skills of Grade 9 Students by Mother's Job

To find the differences for interpersonal communication skills of Grade 9 students by mother's job, descriptive statistics was conducted (see Table 10).

Table 10 Descriptive Statistics for Interpersonal Communication Skills of Grade 9 Students by Mother's Job

Component	Mother's Job	N	Mean	SD
Interpersonal Communication Skills	Civil Servant	44	115.43	9.159
	Merchant	131	116.25	9.857
	Farmer	470	117.76	9.923
	Others	363	114.82	9.958

When the mean scores of Grade 9 students by mother's job were compared with respect to interpersonal communication skills, it was found that the Grade 9 students by mother's job of farmer had slightly higher mean scores in interpersonal communication skills than the Grade 9 students by mother's job of civil servant, merchant, and others.

To observe clearly, One Way Analysis of Variance (ANOVA) was conducted again.

Table 11 ANOVA Results for Interpersonal Communication Skills among Grade 9 Students by Mother's Job

Component		Sum of Squares	df	Mean Square	F	p
Interpersonal Communication Skills	Between Groups	1823.873	3	607.958	6.208***	0.000
	Within Groups	98316.793	1004	97.925		
	Total	100140.666	1007			

Note: *** The mean difference was significant at 0.001 level.

According to ANOVA results, there was significant difference in interpersonal communication skills of Grade 9 students according to mother's job at the 0.001 level.

To obtain more detailed information about this, Tukey HSD method was executed.

Table 12 Results of Tukey HSD for Grade 9 Students' Interpersonal Communication Skills by Mother's Job

Component	Mother's Job (I)	Mother's Job (J)	Mean Difference(I-J)	p
Interpersonal Communication Skills	Farmer	Others	2.944***	0.000
	Others	Farmer	-2.944***	0.000

Note: *** The mean difference was significant at 0.001 level.

The result showed that the Grade 9 students of mothers with farmer were higher in interpersonal communication than the Grade 9 students of mothers with others. This may be due to the fact that farmers were honest, kind-hearted, warm, helpful, cooperative, and friendly in communication with other people than others.

Mean Comparison for Grade 9 Students' Interpersonal Communication Skills by Personality Traits

In order to explore the differences in interpersonal communication skills by personality traits, the descriptive statistics was calculated. The mean scores and standard deviations were displayed in Table 13.

Table 13 Descriptive Statistics for Grade 9 Students' Interpersonal Communication Skills by Personality Traits

Interpersonal Communication Skills	Personality Traits	No. of Participants	Mean	SD
Interpersonal Communication Skills	Openness to Experience	174	113.57	9.40
	Conscientiousness	298	118.64	10.07
	Extraversion	190	120.52	8.93
	Agreeableness	225	113.86	9.49
	Neuroticism	42	112.93	11.86
	Mix Traits	79	113.39	7.94

According to Table 13, the mean score of Grade 9 students with Extraversion was higher than that of Grade 9 students with Openness to Experience, Conscientiousness, Agreeableness, Neuroticism, and Mix Traits in interpersonal communication skills. Moreover, the mean score of Grade 9 students with Conscientiousness was higher than that of Grade 9 students with Openness to Experience, Agreeableness, Neuroticism, and Mix Traits in interpersonal communication skills.

To observe clearly, the significant difference in interpersonal communication skills by personality traits, One Way Analysis of Variance (ANOVA) was conducted again.

Table 14 ANOVA Results for Interpersonal Communication Skills among Grade 9 Students by Personality Traits

Component		Sum of Squares	df	Mean Square	F	p
Interpersonal Communication Skills	Between Groups	8783.319	5	1756.664	19.267***	0.000
	Within Groups	91357.347	1002	91.175		
	Total	100140.66	1007			

Note: *** The mean difference was significant at 0.001 level.

According to ANOVA results, there was significant difference in interpersonal communication skills of Grade 9 students according to personality traits at 0.001 level. It can be said that Grade 9 students from Kawlin Township had different interpersonal communication skills by personality traits.

Conclusion

Having good personality traits could help the Grade 9 students' better social life, Arora (2018) suggested some ways to improve personality. These ways are; Dress up well, Learn social skill, Do not avoid social interactions, Don't fear failure, and Make yourself known.

Interpersonal communication skill is one of the skills needed in every type of setting. According to Burleson et al. (2000), there are some strategies in order to develop students' interpersonal communication skills. They are; Be aware of your gestures, Smile or nod, Establish rapport, Show interest, and Use active listening.

According to the result, the Grade 9 students from Kawlin Township had different interpersonal communication skills by personality traits. Therefore, the study of human's personality traits and interpersonal communication skills is a major assistant in the advancement of learning process as good personality and effective interpersonal communication skills can support good learning process.

Acknowledgements

Initially, we wish to express our sincere appreciation to Dr. Saw Pyone Naing, Rector of Sagaing University of Education for his kind permission to submit this thesis. We would like to offer sincere thanks to Pro-Rector Dr. Myat Myat Thaw for giving us permission to write this paper.

We would like to offer special acknowledgement to Dr. Khin Hnin Nwe (Professor, Head of Department, Department of Educational Psychology, Sagaing University of Education) for her expert guidance, instruction and invaluable suggestions and encouragement in writing this paper.

Finally, a special wish goes to our colleagues who helped us to attain our destination without any trouble.

References

- Ahmetar. (2012). *An investigation into the social skills of middle school students in Moegaung Township*. Unpublished Master's Thesis. Sagaing University of Education, Myanmar.
- Arora, M. (2018). Personality development tips. <https://catchupdates.com/personality-development-tips/>
- Beebe, S. A., Beebe, S. J. & Redmond, M. V. (1999). "Interpersonal Communications: Relating to Others." *United States of America: Allyn and Bacon*.
- Brinich, P., & Shelly, C. (2002). *The self and personality structure*. Philadelphia, PA: Open University Press.
- Burleson, B. R., Metts, S., & Kirch, M. W. (2000). Communication in close relationships. In C. Hendrick & S. S. Hendrick (Eds), *Close relationship: A sourcebook*. Thousand Oaks, CA: Sage.
- Corcoranl, R. P. & Flaherty, J. (2016). Personality development during teacher preparation. *Frontiers in psychology*.<https://www.familyschool.org.au/files/3013/8451/Family-school-partnerships-framework.pdf>
- Costa, P. T. Jr., & McCrae, R. R. (1992). Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) Professional Manual. *Odedsa, Fl: Psychological Assessment Resources, Inc*.
- Delia, J. G. (1977). Constructivism and the study of human communication. *The Quarterly Journal of Speech*, 63(1), 60-78.
- Ei Ei Mar. (2016). *The Relationship between personality and career interests of Grade 10 students in Yamethin Township*. Unpublished Master's Thesis. Sagaing University of Education, Myanmar.
- Ewen, R. B. (2003). *An Introduction to Theories of Personality (6th ed.)*. Mahwah, New Jersey, London: Lawrence Erlbaum Associates, Inc.
- Gardner, H. (1983). 9 Types of Intelligence-Infographic. <https://blog.adioma.com/9-types-of-intelligence-infographic/>.
- Graham, J. L. (1998). An analysis of sport managers' interpersonal communication skills in selected Ontario amateur sport organization. <https://scholar.Uwindsor.ca/cgi/viewcontent.cgi-pdf>.
- Griffin, E. A. (2009). A first look at communication theory. <http://rosalia.mercubuana-yogya.ac.id/wp-content/uploads/2006/04/ebooksclub.org-A-First-Look-at-Communication-Theory-8-th-Edition-pdf>.
- Htet Htet Win. (2013). *A study of interpersonal communication skills of early adolescents in Patheingyi Township*. Unpublished Master's Thesis. Sagaing University of Education. Myanmar.
- John, O.P., & Srivastava, S. (1999). *The big five trait taxonomy: History, measurement and theoretical perspectives*, University of California: Berkeley.
- Kiani, S. (2010). *Personality and Vocational Interests in High School Students*. Islamabad, Pakistan: Centre of Excellence, Quaid-I-Azam University.
- Mangal, S. K. (2004). *Advanced Educational Psychology, (2nd ed.)* Prentice. Hall of Indian Pvt.Ltd.
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor-model and its application. *Journal of Personality*.
- Paraveen, A. (2007). Effect of home environment on personality and academic achievement of students of Grade 12 inPawalpindiDivision.<http://citeseerx.ist.psu.Edu/viewed/download?Do: =10.1.1.474.1140&reptype=pdf>.

- Pfeiffer, J. W., & Jones, J. E. (Eds). (1974). Interpersonal Communication Inventory. The Annual Handbook for Group Facilitators. San Diego, CA: University Associates. <http://www.csus.edu/indiv/s/stonerm/coms.5-ipcskillinventory1.pdf>.
- Priddy, R.(2012).The human personality and the ego vs. the self. Retrieved from <https://robertcpriddy.wordpress.com/2012/06/07/the-human-personality-and-the-ego-vs-the-self/>
- Rossier, J. (2013). Personality Assessment and Career Interventions. *Lives Working Paper 2013/26. Swiss National Centre of Competence in Research*. <http://dx.doi.org/10.12682/lives.2296-1658.2013.26.ISSN2296-1658>
- Sias, M. P., Krone, K. J., & Jablin, F. M., (2002). An ecological systems perspective on workplace relationships. <http://engine.koduleht.net/templates/kajatampere/files/mdl-files:php/article-about-relationship-management.pdf>.
- Smith, M. (2009). Essential business skills for project managers. <http://www.AssociatedContent.com>.
- Tin Zar Win Pyae. (2018). *An investigation into self-control and interpersonal communication skills of Grade 9 students in Amarapura Township*. Unpublished Master's Thesis. Sagaing University of Education. Myanmar.
- Win Than Kyaw. (2016). *A study on peer relationships of middle school students upon their perception of interpersonal conflicts in Natmauk Township*. Unpublished Master's Thesis. Sagaing University of Education. Myanmar.

ATTACHMENT STYLES AND DEPRESSION OF GRADE 11 STUDENTS IN NYAUNG OO TOWNSHIP

Kyaw Soe Kyi¹, Myo Ko Aung²

Abstract

The main purpose of the present study is to examine attachment styles and depression of Grade 11 students in Nyaung Oo Township. This study was conducted on a survey research design and employed with a quantitative method. In this study, 896 Grade 11 students including 446 males and 450 females were randomly selected from the schools in Nyaung Oo Township, Mandalay Regions as participants of this study. Data of this study were collected by administering 21-items attachment styles questionnaire (ASQ) as developed by (Hofstra, et al., 2005) was used. The key adapted to measure depression of high school students was a 30-items Reynolds Adolescent Depression Scale (RADS) as developed by Reynolds (2002). In this research data were analyzed by descriptive statistics, independent samples *t* test, one way ANOVA, Pearson Product Moment Correlation and Multiple Regression. Internal consistency reliability with Cronbach's Alpha of attachment styles was 0.533 and that of depression was 0.739. According to the results, there was a significant difference in students' attachment styles by gender. The result of independent samples *t* test showed that male students were higher secure attachment style than the female students. And, the female students were higher depression than the male students according to independent samples *t* test. The ANOVA result showed that there was a significant difference in their depression for anhedonia according to their father's job. Post-Hoc test indicated that 'farmer' was higher level of anhedonia in depression than others and government service. Then, Pearson Product Moment Correlation revealed that there was a positive correlation between insecure attachment style and depression of Grade 11 students ($r = 0.246, p < 0.001$). But, there was a negative correlation between secure attachment style and depression of Grade 11 students ($r = -0.241, p < 0.001$).

Keywords: Attachment, Attachment Styles, Depression

Introduction

A person's ability to have close relationships with other people is one of the most important features of a healthy personality. Close relationships influence the personal and social development processes of people considerably. From a perspective of attachment theory, the quality of one's closest relationships beginning in infancy set the stage for subsequent development. When these relationships are secure, they promote self-reliance, confident exploration of the environment, and resiliency in dealing with life's stresses and crises (Bowlby, 1979, cited in Daniel, 2013). Attachment behavior is not only a part of infancy but also is a part of childhood, adolescence, and adulthood (Bowlby, 1980).

Adolescence is characterized by change in various developmental domains including cognitive, social, affective and biological areas. These simultaneous changes can increase the vulnerability for developing symptoms of depression, known to be prevalent during mid-teens, increasing the risk for negative outcomes, including functional impairment, distress, poorer quality of life, suicidal ideation and the trajectory to a clinical depression in adulthood. Depression is common in our society and therefore it is important to learn about its development in order to establish effective prevention and intervention programs (DSM-5, 2013, cited in Bernaras E, et al., 2019).

¹ Senior Assistant Teacher, Basic Education High School, Bagan, Nyaung Oo

² Dr, Associate Professor, Department of Educational Psychology, Sagaing University of Education

Purpose of the Study

The main aim of this study is to investigate attachment styles and depression of high school students in Nyaung Oo Township. The specific objectives are as follows;

1. To compare attachment styles of high school students by gender, subject combination, family type, and father's job.
2. To compare depression of high school students by gender, subject combination, family type, and father's job.
3. To find out the four dimensions of attachment styles by father's job and father's education.
4. To find out the dimensions of depression by father's job and father's education.
5. To investigate the extent to which the impact of attachment styles' dimensions on depression of Grade 11 students.
6. To explore whether there is a relationship between attachment styles (secure and insecure) and depression of high school students.

Definition of Key Terms

Attachment: Attachment is one's feelings of physical and emotional closeness, comfort, and trust in others, including parents, peers or significant others (Bowlby, 1982). **Attachment Styles:** Attachment styles refer to the motivational systems underlying social relationships that explain differences in how people connect with and relate to others (Konarth, 2014).

Depression: WHO defines depression as a disorder characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disordered sleep or appetite, decreased energy and poor concentration (WHO, 2011).

Review of Related Literature

Attachment is an emotional bond with another person. Bowlby (1960) believed that the earliest bonds formed by children with their caregivers have a tremendous impact that continues throughout life. The central theme of attachment theory is that primary caregivers who are available and responsive to an infant's needs allow the child to develop a sense of security. The infant knows that the caregiver is dependable, which creates a secure base for the child to then explore the world.

In infants, physical separation can cause anxiety and anger, followed by sadness and despair. By the age of three or four, physical separation is no longer such a threat to the child's bond with the attachment figure. Threats to security in older children and adults arise from prolonged absence, breakdowns in communication, emotional unavailability, or signs of rejection or abandonment (Bowlby, 1982).

Childhood and adolescence allows the development of an internal working model useful for forming attachments. The organization of an internal working model is generally seen as leading to more stable attachments in those who develop such a model, rather than those who rely more on the individual's state of mind alone in forming new attachments (Marvin & Britner, 2008).

The opportunity for attachment and quality caregiving are the essential foundation for attachment. Here are the attachment style differences during adolescence. Secure adolescents are expected to hold their mothers at a higher rate than all other support figures, including father, significant others, and best friends. Insecure adolescents identify more strongly with

their peers than their parents as their primary attachment figures. Their friends are seen as a significantly strong source of attachment support (cited in Kerns, et al., 2005).

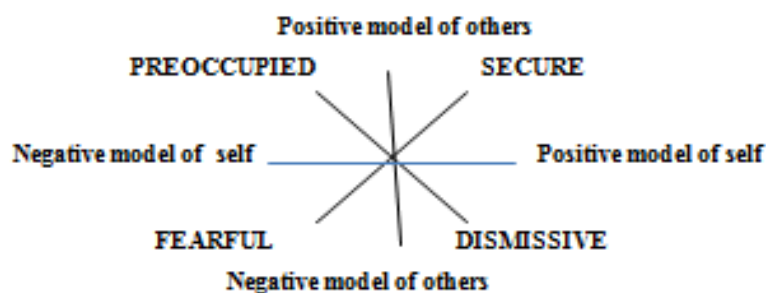


Figure 2.1 The Four-category model of attachment styles proposed by Bartholomew and Horowitz (1991)

Secure attachment style: Bartholomew & Horowitz (1991) stressed that securely attached adolescents are less in need of others' approval and can relatively develop intimacy with others easily. In addition, these individuals can manage to remain self-reliant. While these individuals regard themselves as worth loving, they have the expectations that others are reliable and accessible.

Preoccupied attachment style: While the individuals with preoccupied attachment style do not regard themselves as worth loving, they see others as quite positive. They are obsessive with their relationships. They are afraid of both being abandoned and of others abandoning them in their affiliations (Cooper, Shaver & Collins, 1998).

Fearful attachment style: The individuals with fearful attachment style tend to believe that they are worthless and others are unreliable. They ask for intimateness in their relationships, but avoid social relationships since they do not trust others and in order to eliminate the possibility of being rejected (Sumer & Gungor, 1999).

Dismissive attachment style: The individuals with dismissive attachment style tend to consider them precious. Their attitudes towards others are generally negative. They abstain from close relationships, are extremely attached to their freedom and believe that close relationships are not important at all (Sumer & Gungor, 1999).

Attachment styles can be secure or insecure. A secure attachment forms when the child believes they are safe and protected from harm (Bowlby, 1988; Ainsworth, 1979; Lee & Hankin, 2009). Secure attachment is based on how responsive and accessible the primary caregiver is to the child's needs. Furthermore, the caregiver must be sensitive to the child's needs throughout their life not just in early childhood (Ainsworth, 1979).

Moreover, insecure attachment is related to higher levels of distress because the child lacks a secure base, and parental attachment is a frame of reference persists through adulthood (Ainsworth, 1979; Lee & Hankin, 2009). Insecure attachment can lead to negative developmental outcomes such as a predisposition for depression, low self-esteem, and anxiety. Secure attachment leads to more intimate relationships in later life and results in higher rates of emotional well-being (Riggs & Han, 2009; Lee & Hankin, 2009).

Haaga et al. (2002) found that attachment style affects depression and suggests that insecure attachment is a stable factor for vulnerability to depression and not an artifact of current sad mood. Research shows that insecurely attached people are, in fact, more prone to depression and depressive symptoms.

Finally, attachment styles are an important factor that affects depression in such relationships. The aim in conducting this research was to determine the relationships among attachment styles and depression.

Cognitive Therapy (Beck, 1987). Individuals suffering from depression are taught cognitive and behavioral skills to help them develop more positive beliefs about themselves, others, and the world. Méndez (1998) argues that therapists working with depressed children should pursue three changes: (1) Learn to value their own feelings; (2) Replace behaviors which generate negative feelings with more appropriate behaviors; and (3) Modify distorted thoughts and inaccurate reasoning. The number of sessions varies between 8 and 16 in patients with mild symptoms.

Method

Design of this study is cross sectional in nature and descriptive survey method.

Participants of the Study

Participants of this study were Grade 11 students from selected regions in the academic year of 2019-2020. In this study, 896 (59.53%) participants were from Nyaung Oo Township. (446 participants of the 896 participants are male students and so 450 participants are female students.) There are 446 male students and 450 female students out of 896 students.

Instrumentation

In this study, research instrument was composed of three parts: students' demographic data, the attachment styles questionnaire (Hofstra et al., 2005) and Reynolds adolescent depression scale (RADS). For the purpose of measuring attachment styles, a 21-items attachment styles questionnaire (ASQ) as developed by (Hofstra, et al., 2005) was used. ASQ is composed of four subscales: (a) secure attachment style, 8 items (b) fearful attachment style, 4 items (c) preoccupied attachment style, 6 items and (d) Dismissing, 3 items. Among the total items of 21, 18 items were positively stated and 3 items were negatively stated. The key adapted to measure depression of high school students was a 30-items Reynolds Adolescent Depression Scale (RADS) as developed by Reynolds (2002). RADS was composed of four subscales: (a) dysphoric mood, 8 items, (b) anhedonia, 7 items, (c) negative self-evaluation, 8 items and (d) somatic complaints, 7 items. Among the total items of 30, 23 items were positively stated and 7 items were negative stated. Individual students responded to attachment styles questionnaire using a five-point Likert scales, strongly agree, agree, undecided, disagree and strongly disagree and Reynolds adolescent depression scale using a four-point Likert scales, almost never, hardly ever, sometimes and most of the time (Reynolds, 2002).

Data Collection Procedure

First, for collecting accurate data for this study, the researcher requested permission from the Head of the Department of Educational of Psychology. Second, permission to collect data was acceded from the respective principals of high school in Nyaung Oo Township, Mandalay. With the permission of the respective principals, the data were collected with Grade 11 students from selected Basic Education High Schools and Private Schools. The questionnaires were administered to Grade 11 students in the regular classrooms from each selected school. The researcher explained the purpose and the importance of their participation in this study to the participants.

Moreover, the researcher assured the participants about the confidentiality of the study and that their responses would be used only for research purpose. Then the questionnaires were

distributed and instructions were given to the participants on how to answer the questionnaires. On average, the students spent about 35 minutes to complete questionnaires.

Findings

The main aim of the study was to explore the relationship between attachment styles (secure and insecure) and depression. In this study, Grade 11 students' attachment styles and depression were investigated among the selected schools from Nyaung Oo Township. The findings and results for attachment styles and depression of grade 11 students were discussed according to gender, family types, father's education, father's job. Therefore, descriptive statistics, independent sample *t* test, one way analysis of variance (ANOVA), multiple regression and linear regression were used in this paper.

Table 1 Descriptive Statistics for Attachment Styles of Grade 11 Students

Dimensions	N	No. of items	Minimum	Maximum	Mean	Mean percentage	Std. Deviation
Secure	896	8	17	39	28.09	70.23%	3.687
Fearful	896	4	6	20	15.46	77.30%	2.379
Preoccupied	896	6	6	29	17.95	59.83%	3.661
Dismissive	896	3	5	15	10.90	72.67%	2.005
Attachment styles	896	21	54	95	72.39		6.359

According to Table 1, the mean and standard deviation for the whole sample were 72.39 and 6.359, the maximum and minimum scores were 95 and 54. It was found that fearful attachment style is more than secure, preoccupied, dismissive attachment styles.

According to Bowlby (1988), attachment styles can be classified into two main styles, namely; secure attachment style and insecure attachment style. Insecure attachment style consists of preoccupied, fearful, and dismissive attachment styles. Therefore, their minimum score, maximum score, mean and standard deviation were presented in table 2.

Table 2 Descriptive Statistics for Attachment Styles (Secure and Insecure) of Grade 11 Students

Dimensions	Number	No. of items	Minimum	Maximum	Mean	Mean percentage	Std. Deviation
Secure	896	8	17	39	28.09	70.23%	3.687
Insecure	896	13	28	61	44.30	66.62%	4.885
Attachment styles	896	21	54	95	72.39		6.359

It was found that the total mean score of attachment styles was greater than the theoretical mean score of Grade 11 students' attachment styles. Therefore, it can be interpreted that the attachment styles of Grade 11 students is fairly good. In other words, the mean percent of secure attachment style was 70.23% and the mean percent of insecure attachment style was 66.62%. So, the secure attachment style was higher than the insecure attachment style of Grade 11 students. Again, it can be interpreted that the attachment styles of Grade 11 students are also fairly good.

Table 3 Results of *t* Test for Attachment Styles of Grade 11 Students by Gender

Variable	Gender	Number	<i>t</i>	<i>df</i>	<i>p</i>	MD
Attachment Styles	Male	446	4.522***	894	0.000	1.901
	Female	450				

It was found that there was a significant difference in attachment styles by gender. The finding is that male students generally had higher attachment styles than female students. Based on their attachment styles, their relationships are different. If the students have secured attachment style, their relationship with their chums is comfortable. In contrary, if the students have insecure attachment style, they are hand in glove their companions difficultly and their relationship is disrupted in short time.

Table 4 Results of *t* Test for Attachment Styles of Grade 11 Students by Family Type

Variable	Family types	Number	<i>t</i>	<i>df</i>	<i>p</i>	MD
Attachment Styles	Nuclear	626	-1.508	894	0.132	-0.726
	Extended	270				

In attachment styles of Grade 11 students, there was no significant difference by family types. Parents are equal love and nurture on their children in any family types according to the Myanmar's culture. Therefore, the children who live in depend on neither extended family nor nuclear family in their family. Therefore, the attachment styles of Grade 11 students may not be different by family types.

Table 5 ANOVA Results of Students' Attachment Styles for Four Dimensions by Father's Job

Attachment Styles	Groups	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Secure	Between Groups	14.322	2	7.161	.526	.591
	Within Groups	12150.989	893	13.607		
	Total	12165.311	895			
Fearful	Between Groups	24.928	2	12.464	2.208	.111
	Within Groups	5041.287	893	5.645		
	Total	5066.214	895			
Preoccupied	Between Groups	2.994	2	1.497	.112	.895
	Within Groups	11990.644	893	13.427		
	Total	11993.638	895			
Dismissing	Between Groups	6.252	2	3.126	.777	.460
	Within Groups	3591.095	893	4.021		
	Total	3597.347	895			

There was no significant difference in their attachment styles for secure, fearful, preoccupied and dismissing attachment styles among the different kinds of father's job.

Table 6 ANOVA Results of Students' Attachment Styles by Father's Education

Attachment Styles	Groups	Sum of Squares	df	Mean Square	F	p
Secure	Between Groups	59.267	4	14.817	1.091	.360
	Within Groups	12106.044	891	13.587		
	Total	12165.311	895			
Fearful	Between Groups	30.147	4	7.537	1.333	.256
	Within Groups	5036.067	891	5.652		
	Total	5066.214	895			
Preoccupied	Between Groups	59.001	4	14.750	1.101	.355
	Within Groups	11934.637	891	13.395		
	Total	11993.638	895			
Dismissing	Between Groups	13.149	4	3.287	.817	.514
	Within Groups	3584.199	891	4.023		
	Total	3597.347	895			

There was no significant difference in their attachment styles for secure, fearful, preoccupied and dismissing attachment styles among the different kinds of father's education.

Since fathers had to get the duties of the family development, they are equally and fairly having the attachment style on their children according to Myanmar's culture. The four different styles of attachment associated with the quality of early relationships between caregiver and the child were assessed. So, the attachment styles between the children and their father or secondary caregiver are independent on both their father's job and their father's education.

Table 7 Descriptive Statistics for Depression of Grade 11 Students

Dimensions	N	No. of Items	Minimum	Maximum	Mean	Mean %	Std. Deviation
Dysphoric mood	896	8	8	30	16.90	52.81%	3.681
Anhedonia	896	7	7	23	12.55	44.82%	2.638
Negative self-evaluation	896	8	8	30	14.23	44.47%	3.576
Somatic complaints	896	7	7	25	15.50	55.36%	3.092
Depression	896	30	36	92	59.18		8.806

The total mean score of depression of Grade11 students was less than the theoretical mean score of depression. Therefore, it can be assumed that the depression of Grade 11 students is acceptable.

Table 8 Results of t Test for Depression of Grade 11 Students by Gender

Variable	Gender	Number	t	df	p	MD
Depression	Male	446	-3.208***	894	0.001	-1.878
	Female	450				

It can be assumed that female students are more anxiety than male students about the exam pass or fail in my classroom. Kobak and others (1991) claim that being female constitutes a significant risk factor for depression, particularly in adolescents. Female participants are nearly as likely as male participants to be diagnosed with depression. Some mood changes and depressed feelings occur with normal hormonal changes. But, hormonal changes alone don't cause depression. Other biological factors, inherited traits, and personal life circumstances and

experiences are associated with a higher risk of depression. Another reason, female participants are more sad than male participants according to the biological explanations.

Table 9 Results of *t* Test for Depression of Grade 11 Students by Family Type

Variable	Family types	Number	<i>t</i>	<i>df</i>	<i>p</i>	MD
Depression	Nuclear	626	0.159	894	0.874	0.102
	Extended	270				

There was no significant difference between extended family type and nuclear family type in depression of Grade 11 students. Because the depression depends on the inherited individual student's behavior and withstand level, traumatic experience, and negative views of the self. So, depression is independent on the family types.

Table 10 ANOVA Results of Students' Depression for Anhedonia by Father's Job

Dimension	Groups	Sum of Squared	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Anhedonia	Between Groups	71.224	2	35.612	5.166**	0.006
	Within Groups	6156.205	893	6.894		
	Total	6227.429	895			

To obtain more information of how different in students' depression by father's job, Post-Hoc test was computed by Tukey (HSD) method.

Table 11 Result of Tukey (HSD) Multiple Comparison for Anhedonia in Depression of Grade 11 Students by Father's Job

(I) Father's job	(J) Father's job	Mean Difference (I-J)	<i>p</i>
farmer	government servant	.747	.160
	others	.539**	.010

Among them, 'farmer' was the highest mean score all of the three groups. Students from this group had to spend most of their time in the fields, except their time in school. That is why these children could not play with their peer groups on holidays. Gradually, these students will become unhappy in their life.

Table 12 ANOVA Results of Students' Depression for Somatic Complaints by Father's Education

Dimension	Groups	Sum of Squared	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Somatic Complaints	Between Groups	95.479	4	23.870	2.514*	0.04
	Within Groups	8460.503	891	9.496		
	Total	8555.982	895			

To obtain more information of how different in students' depression by father's education, Post-Hoc test was computed by Tukey (HSD) method.

Table 13 Result of Tukey (HSD) Multiple Comparison for Somatic Complaints in Depression of Grade 11 Students by Father's Education

(I) Father's education	(J) Father's education	Mean Difference (I-J)	<i>p</i>
post degree	primary	-3.745	.426
	middle	-4.317	.278
	high	-3.922	.385
	bachelor	-3.872	.412

Among them, post graduated father whose child was the least mean score all of the five groups. There are several symptoms of somatic complaints such as flushing, stomach ache, nausea, and tremor, lethargy, and sleep disturbances. This may be because these students feel life is unfair according to their father's education.

Table 14 The Relationship between Attachment Styles for Each Dimension and Depression of students

Variable	Unstandardized Coefficient		Standardized Coefficient	<i>t</i>	<i>p</i>
	B	Std. Error	Beta		
Depression (D)	57.985	3.338		17.372	0.000
Predictor Variables					
Secure Attachment Style (SAS)	-0.601	0.077	-0.241	-7.817	0.000
Fearful Attachment Style (FAS)	0.432	0.119	0.117	3.636	0.000
Preoccupied Attachment Style (PAS)	0.555	0.077	0.231	7.188	0.000
Dismissing Attachment Style (DAS)	0.134	0.141	0.030	0.951	0.342

Among all subscales of attachment styles, secure attachment style, preoccupied attachment style, fearful attachment style were significant predictors of students' depression. And Then, secure attachment style was negative significant correlation to depression. But there was a positive significant correlation between preoccupied attachment style and depression, and between fearful attachment style and depression. But, dismissing attachment style was not significant predictor of students' depression.

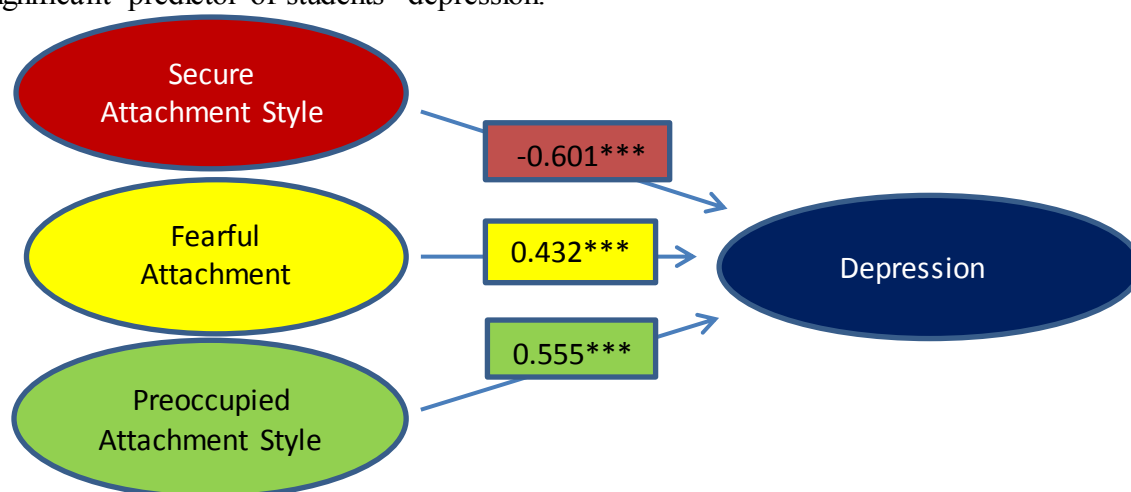


Figure 1 Predictive Powers for Subscales of Attachment Styles on Depression of Students

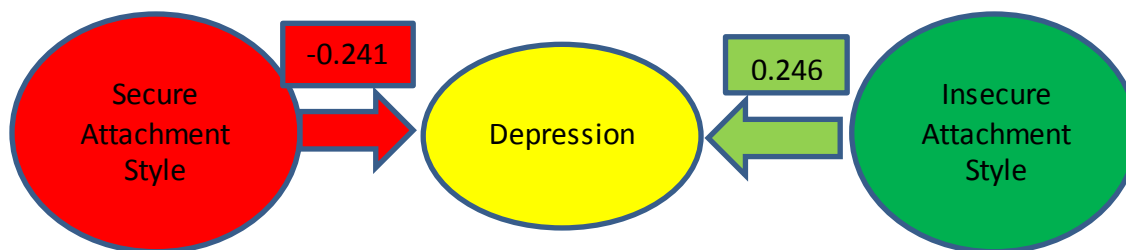


Figure 2 Relationship Model between Secure, Insecure Attachment Styles and Depression of Grade 11 Students

It can be interpreted that if they had the more insecure attachment, the depression would be high, but secure attachment style was not. That is, there was a positive correlation between insecure attachment style and depression. But, there was a negative correlation between secure attachment style and depression.

Table 15 Results of Simple Linear Regression on Secure, Insecure Attachment Styles and Depression of Students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.330 ^a	.109	.107	8.322

a. Predictors: (constant), secure, insecure

According to Table 16, the simple linear regression correlation coefficient (R) = 0.330 and adjusted R square was 0.107. Therefore, it can be conducted that about 11 % of depression can be explained by secure and insecure attachment styles.

Conclusion

According to this result, it can be said that the attachment styles are important factors that affect interpersonal relationships and determine depression level of individuals. A person's ability to have close relationships with other people is one of the most important features of a healthy personality. When these relationships are secure, they promote self-reliance, confident exploration of the environment, and resiliency in dealing with life's stresses, pressure and anxiety. On the other hand, insecure attachment style is accompanied by lack of self-confidence, fear from intimacy, lack of trust, and dependency. Primary caregiver provides love and adequate security, confidence will grow slowly and regularly, and adolescents achieve enough positive psychological development.

Then, adolescents who have insecure attachment style are more depressed than the adolescents who have the secure attachment style. Depressed adolescents generally suffer unfavorable environment and in particular defective relationship with the parents. Depressed human loses the ability to think clearly and is not able to analyze the situation. Depression in children and adolescents often is associated with irritability, withdrawal from family and peers, educational failure, reluctance to cooperate in family histories, irritability, feeling restless, negative behavior or anti-social and drug abuse.

It was found that there was a gender difference in attachment styles and depression. The male participants have more attachment styles than female participants and are more secure attachment than female participants. This is because female participants are more depressed than male participants. That is, the adolescents who have secure attachment style are less depressed

than the adolescents who have the insecure attachment styles. And, this finding is not surprising and is consistent with depression literature.

In Myanmar, depression is not much known or accepted as an illness. Nevertheless, people who suffer moderate to severe depression need specialist medical attention and treatment. Therefore, the present study is important in Myanmar's Education and Educational Psychology.

The present study needs to conduct further studies. The attachment styles not only concern with the relation primary caregiver and for their children but also need teacher-student attachment in teaching-learning area. Therefore, the further researches need to conduct attachment in classroom and teachers' attachment styles.

There may be more benefits in conducting a longitudinal study of the relationship between attachment styles and depression. depression plays in adolescent mental health and psycho-social development, so further studies and more detail analysis will be needed in greater depth how much of the individual differences in depression level. In addition, the future researcher should be conducted that the depressed adolescents should be treated one session in one week or two sessions in one week.

Acknowledgements

We would like to offer respectful appreciation to Dr. Saw Pyone Naing (Reactor), Dr. Myat Myat Thaw (Pro-Rector) and Dr. Khin Hnin Nwe (Head of Department, Department of Educational Psychology) from Sagaing University of Education, for their encouragement, administrative supports, official permission, and providing facilities throughout the research. We would like to express our indebtedness to Headmasters and Headmistresses from selected schools from Nyaung Oo Township for their permission to conduct this study.

References

- Ainsworth, M. (1979). Infant – mother attachment. *American Psychologist*, 34(10), 937. doi:doi.org/10.1037/0003-066X.34.10.932.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, 61(2), 226-244.
- Bernaras E, Jaureguizar J and Garaigordobil M (2019). Child and Adolescent Depression: A Review of Theories, Evaluation Instruments, Prevention Programs, and Treatments. *Front. Psychol.* 10:543. doi: 10.3389/fpsyg.2019.00543
- Bowlby J (1960). "Separation Anxiety". *International Journal of Psychoanalysis*. 41: 89–113. PMID 13803480.
- Bowlby, J. (1969, 1982). *Attachment and Loss: Attachment*. New York, NY: Basic Books.
- Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss*. New York: Basic Books.
- Bowlby, J. (1988). Developmental psychiatry comes of age. *Am. J. Psychiatry* 145, 1–10. doi: 10.1176/ajp.145.1.1
- Cooper ML, Shaver PR, Collins NL (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *J. Pers. Soc. Psychol.*, 74: 1380-1397.
- Daniel, K. (2013). Loneliness and depression among University students in Kenya. *Global Journal of Human Social Science*.
- Erozkan, A., (2011). The attachment styles bases of loneliness and depression. *International Journal of Psychology and Counselling Vol. 3(9)*, pp. 186-193, Available online at <http://www.academicjournals.org/IJPC>.
- Haaga D, Yarmus M, Hubbard S (2002). Mood dependency of self-rated attachment style. *Cogn. Ther. Res.*, 26: 57-71.
- Hofstra et al., (2005). *Attachment Styles and Majority Members' Attitudes towards Adaptation Strategies of Immigrants*.
- Kerns, Kathryn, A., Rhonda, A. & Richardson (2005). *Attachment in Middle Childhood*. Guilford Press.

- Koback, R., Sudler, N., and Gamble, W. (1991). Attachment and depressive symptoms during adolescence: a developmental pathways analysis. *Dev. Psychopathol.* 3, 461–474. doi: 10.1017/S095457940000763X
- Konarth, H. (2104). Changes in adult attachment styles. The society for Personality and Social Psychology, Inc.
- Lee, A., & Hankin, B. L. (2009). Insecure attachment, dysfunctional attitudes, and low self-esteem predicting prospective symptoms of depression and anxiety during adolescence. *Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology*, American Psychological Association, Division 53, 38(2), 219–31. doi:10.1080/15374410802698396.
- Marvin, R.S., & Britner, P.A., (2008). "Normative Development: The Ontogeny of Attachment". In Cassidy J, Shaver PR (eds.). *Handbook of Attachment: Theory, Research and Clinical Applications*. New York and London: Guilford Press. pp. 269–94. ISBN 978-1-59385-874-2.
- Riggs, S. a., & Han, G. (2009). Predictors of anxiety and depression in emerging adulthood. *Journal of Adult Development*, 16(1), 39–52. doi:10.1007/s10804009-9051-5.
- Sumer N, & Gungor D (1999). Assessment of Turkish adolescence attachment styles and a cross-cultural comparison. *Turk. J. Psychol.*, 14: 71-106.
- WHO | depression. World Health Organization. (2011). Available from: http://www.who.int/mental_health/management/depression/definition/en/.

A STUDY ON FOREIGN LANGUAGE ANXIETY AND ENGLISH READING COMPREHENSION SKILLS OF MIDDLE SCHOOL STUDENTS

Kay Thi Myint Aung¹, San San Aye²

Abstract

The main purpose of this study was to investigate foreign language anxiety and English Reading Comprehension Skills of middle school students from selected schools (2019-2020 Academic Year) in Tada-U Township. Moreover, the present study was to find out the differences in foreign language anxiety and English Reading Comprehension Skills of middle school students among demographic characteristics (gender, school type and parents' education level). The quantitative research design and descriptive survey method were used in this study. A total of 904 middle school students from selected Basic Education Schools in Tada-U Township were selected as participants by using simple random sampling technique. As research instruments, Foreign Language Classroom Anxiety Scale (FLCAS) developed by Horwitz, Horwitz and Cope (1986) and teacher made test for English Reading Comprehension Skills were used to measure students' foreign language anxiety and English Reading Comprehension Skills. After that, the data were analyzed by using descriptive statistics, Independent Samples *t* Test and one way ANOVA. The results revealed that there were significant differences in both foreign language anxiety and English Reading Comprehension Skills of students by gender. In foreign language anxiety, male students were higher in language anxiety than female students and in English Reading Comprehension Skills, female students performed better than male students. Although one of the demographic factors, school type, was not shown significant difference in foreign language anxiety, it was significant difference in English Reading Comprehension Skills. Moreover, according to parents' education level, there were significant differences in both foreign language anxiety and English Reading Comprehension Skills of students respectively. Moreover, Pearson Product Moment Correlation revealed that foreign language anxiety was negatively correlated with English Reading Comprehension Skills of students ($r = -.300, p < 0.01$). Therefore, if the students had less foreign language anxiety, they will perform better in English Reading Comprehension Skills.

Key words: Anxiety, Foreign Language Anxiety, English Reading Comprehension Skills

Introduction

Importance of the Study

Reading comprehension is the ability to make sense of text or to understand what is read. Additionally, reading comprehension involves reading to learn and not just learning to read (Chall, 1983). Learning to read involves learning and applying reading skills in order to decode unknown words and to read with fluency (Duken & Block, 2012; Lesaux, 2012). Chall (1983) maintained that reading to learn involves going beyond applying basic decoding skills to being able to extract meaning from text.

In order to achieve academic success, students must be able to comprehend written material in content-area textbooks. Comprehension is the ultimate goal of reading and is essential for success in school and throughout life (Eason, Goldberg, Young, Geist & Cutting, 2012). Reading for understanding is essential for students in all grade levels (Meyer & Ray, 2011). Because the academic demands of secondary students are more challenging, reading comprehension is even more critical to student achievement (Goldman, 2012). Foreign language reading comprehension is basic to its achievement. And so, Foreign Language Anxiety also plays an important role in reading comprehension of students.

¹ Senior Assistant Teacher, Basic Education High School, Sintkaing

² Lecturer, Department of Educational Psychology, Sagaing University of Education

There are many factors, variables, theories, and methodologies from which to draw research in anxiety and second language acquisition. Gardner (1985) wrote on the proficiency of language students who experience even moderate levels of anxiety. Gardner further added that anxiety can impact the student in a positive or negative way. Anxiety can contribute positively to students learning by giving them a slight push to achieve higher on assignments and tests.

Conversely, anxiety can play a negative role in educating English language learners by causing students to feel overwhelmed, highly nervous, and incapable of achieving successfully in school. Many adolescents struggle with comprehending content-related texts (Goldman, 2012). The lack of reading proficiency is especially problematic for these struggling readers because middle and high school teachers' priority is to teach content, resulting in less time devoted to teaching students literary practices needed to successfully comprehend texts. Therefore, middle school students' reading proficiency and their level of foreign language anxiety need to be studied.

Aim of the Study

The main aim of this study is to investigate the foreign language anxiety and English Reading Comprehension Skills of middle school students from Tada-U Township.

The specific objectives of this research are:

- (1) To investigate differences in Foreign Language Anxiety of middle school students from Tada-U Township by gender, school type and parents' education level.
- (2) To study differences in English Reading Comprehension Skills of middle school students from Tada-U Township by gender, school type and parents' education level.
- (3) To find out the relationship between Foreign Language Anxiety and English Reading Comprehension Skills of middle school students from Tada-U Township.

Scope of the Study

The participants in this study were the middle school students from Tada-U Township. A total of 904 middle school students were selected from the selected schools of Tada-U Township.

Definitions of Key Terms

Anxiety

Anxiety is a feeling of apprehension and fear, characterized by physical symptoms such as palpitations, sweating, and feelings of stress (William C. Shiel Jr., MD, FACP, FACR, 2018).

Foreign Language Anxiety

Anxiety when associated with learning a foreign language is termed as "second/ foreign language anxiety" related to the negative emotional reactions of the students towards language acquisition (Horwitz, 2001).

Reading

Reading is the process of creating meaning that involves: (a) the reader's existing knowledge; (b) the text information; and (c) the reading context (Wixon, Peters, Weber & Roeber, 1987).

Comprehension

Comprehension is a process in which readers make meaning by interacting with context through the combination of prior knowledge and previous experience, information in the text, and the views of readers related to the text (Duke, 2003).

Reading comprehension

Reading comprehension is the process of creating meaning from text (Kintsch, 1998; van Dijk & Kintsch, 1983).

Review of Related Literature

There are many factors, variables, theories and methodologies from which to draw research in second language acquisition. Among these theories, this study was based on Horwitz, Horwitz and Cope's Theory of Foreign Language Anxiety.

Horwitz, Horwitz and Cope's Theory of Foreign Language Anxiety

Horwitz, Horwitz and Cope (1986) defined Foreign Language Anxiety (FLA) as "a distinct complex construct of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of language learning process". According to Horwitz et al., no other fields of study implicate self-concept and self-expression to the same Graduate as foreign language study. This feature makes the anxiety caused by foreign language learning distinctive from other academic anxieties. It is possible that students with general anxiety are likely to experience FLA; however, it is not uncommon to find those who are very good at other subjects frustrated in learning a foreign language. Therefore, there must be something unique to the language learning experience that makes some students anxious.

According to Gardner, not all forms of anxiety would influence second or foreign language learning, but "a construct of anxiety which is not general but instead is specific to the language acquisition context is related to second language achievement". Other researchers also expressed their consensus by stating that the variety of anxiety types made it possible that the anxiety being studied was not the anxiety specific to language learning (MacIntyre, 1998; Young, 1994). Most recently, Horwitz (2010) reported a foreign and second language anxiety research timeline, in which she once again postulated that one of the reasons for such confusing results was the multi-faceted conceptualisation of anxiety which differentiates a number of types of anxiety, including trait anxiety, state anxiety, achievement anxiety, and facilitating-debilitating anxiety.

In order to achieve academic success, students must be able to comprehend written material in content-area textbooks. Basic reading involves the ability to pronounce and decode words. Among the theories of reading comprehension, this study was based on Kintsch's theory of comprehension.

Kintsch's Theory of Comprehension

Walter Kintsch (1974) (Kintsch & Vipond, in press) has proposed one of the most comprehensive and explicit theories of language comprehension. Kintsch proposes that the meaning of text can be represented in the form of a text base, which is a structured list of propositions. Propositions consist of a predicate with one or more arguments, and an argument is a concept, or a proposition itself. Concepts are realized at the language level by a word (or words if there are synonyms) or at times by a phrase. In Comprehension Theory and Measurement essence, propositions are idea units representing a single idea.

Kintsch has presented evidence to the effect that coherence in text is directly related to the ease of understanding of the text. Thus, a text which is highly coherent (having much argument repetition) will be easier to understand than one which is less coherent. In essence, what Kintsch is saying is that new information in text will be understood more easily if it has recently been preceded by related information. This principle can be extended to extratextual information. Text will be understood more easily if the incoming arguments can be related to

knowledge already in memory. Kintsch's theory contains a number of instances of the critical role of prior knowledge in constructing a memory representation for a linguistic event.

Kintsch proposed that the perceptual and semantic elements then combine to form an encoding for the event. Thus, prior knowledge, in the form of semantic memory elements, is involved very early in the comprehension process. Prior knowledge also influences memory representation in Kintsch's theory through the role of short-term memory. Propositions which are already in short-term memory are presumed to influence both the pattern matching phase and the encoding phase of the representational process. If needed, propositions can also be called from long-term memory to aid in text interpretation. This would occur, for example, when the propositions presently in short-term memory were not relevant to the interpretation of incoming propositions.

Thus, it seems obvious that the minimal comprehension principle is operative at a number of stages in Kintsch's theory. Another way in which knowledge would be beneficial in fact crucial in comprehension is in the inference processes that are required whenever an incoherent text base is constructed.

Methodology

In this study, descriptive research design and quantitative survey method were used.

Sample

A total of 904 (male = 452, female = 452) middle school students were selected as participants from selected schools by simple random sampling method.

Instrumentation

In this study, two instruments were used for studying Middle School students' foreign language anxiety and English Reading Comprehension Skills in English. They are Foreign Language Classroom Anxiety Scale (FLCAS) developed by Horwitz and Cope (1986) to measure foreign language anxiety of Middle School students and Teacher made test for English English Reading Comprehension Skills to measure English Reading Comprehension Skills of middle school students.

Foreign Language Classroom Anxiety Scale (FLCAS) was developed by Horwitz, Horwitz and Cope (1986). It consists of 33 items. All the items were adapted to Myanmar version. After preparing the instruments, expert review was conducted for content validity by three experts from Sagaing University of Education who are experts in the field of Educational Psychology.

Another instrument, English Reading Comprehension Test for middle school students was developed by the researcher with the help of supervisor. It includes a paragraph to read and a lot of items depending on this paragraph. These items are opposite words searching items, fill in the blanks with the help of the first letter items, true/ false items and short questions. The participants were asked about 45 minutes to answer this questions. After preparing the instrument, the test is administered by the Experts from English Department of Sagaing University of Education and Methodology Department who were specialized in English. The English Language Teachers from Basic Education High School were also asked to check whether the test is appropriate for Middle School Students. Based on their advices, necessary changes and modification were made by the researcher.

Procedures

To proceed this study, related literature, books, papers, dissertations, theses and research reports were obtained through libraries, Department of Educational Psychology and internet sources and so on. After collecting the relevant information, the instruments were prepared. In order to get the required data for middle school students' foreign language anxiety, Horwitz, Horwitz and Cope's (1986) foreign language anxiety scale was translated into Myanmar version. Then the instruments were administered and modified by researchers. After getting the validation from the experts, the instrument for English Reading Comprehension Skill Test for Middle School students was also developed. Then, expert review was conducted for content validity by experts from English Department of Sagaing University of Education, Methodology Department and Basic Education High School. After preparing the instrument according to the advices of educators, pilot testing was undertaken in Basic Education High School, Sintkaing. 125 middle school students participated. According to the results of the pilot study, some of the items were changed in order to validate the instruments.

Data Analysis and Findings

The main aim of this study is to investigate foreign language anxiety of middle school students in Tada-U Township by gender, school type and parents' education level. By using the Statistical Package for Social Science (SPSS), the descriptive statistics, Independent Samples *t* Test, One-way ANOVA and Pearson Product-Moment Correlation were conducted in this section.

Table 1 Descriptive Statistics for Foreign Language Anxiety of Middle School Students

Variable	N	Minimum	Maximum	Mean	SD
Foreign Language Anxiety	904	43	130	89.23	14.82

According to Table.1, the mean and standard deviation for foreign language anxiety of middle school students were 89.23 and 14.82 respectively. The mean score (89.23) is lower than the theoretical mean score (99). Thus, the students in Tada-U Township are low in foreign language anxiety.

Table 2 Descriptive Statistics for Foreign Language Anxiety of Students by Subscales

Subscales	No. of items	Minimum	Maximum	Mean	Mean %	SD
CA	8	8	36	21.25	53.13%	4.36
FNE	9	10	44	27.40	60.89%	5.86
TA	5	6	22	14.38	57.52%	2.88
AEC	11	11	45	26.20	47.64%	5.53
Overall anxiety	33	43	130	89.23	54.08%	14.82

Note: CA=Communication Apprehension, FNE=Fear of Negative Evaluation, TA=Test Anxiety, AEC=Anxiety of English Class

According to Table 2, it is found that the mean percentage of Fear of Negative Evaluation is the highest and the mean percentage of the Anxiety of English Class is the lowest.

Table 3 Descriptive Statistics and Results of Independent Samples *t* Test for Foreign Language Anxiety of Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Foreign Language Anxiety	Male	452	90.78	14.90	3.154**	902	.002
	Female	452	87.69	14.58			

Note: **The mean difference is significant at .01 level.

Based on the result of Independent Samples *t* Test, there was significant difference between male and female students in their foreign language anxiety at 0.01 level.

Table 4 Descriptive Statistics for Foreign Language Anxiety of Students by School Types

Variable	School Types	N	Minimum	Maximum	Mean	SD
Foreign Language Anxiety	BEHS	312	47	130	88.88	14.79
	BEHS(Branch)	282	43	130	90.75	15.95
	BEMS	310	52	128	88.21	13.66
	Total	904	43	130	89.23	14.82

Based on the result of Table 4, it can be concluded that there were differences in foreign language anxiety of students by school types. In order to make sure that there were significant differences or not, one-way analysis of variance (ANOVA) was conducted.

Table 5 ANOVA Result of Mean Comparison in Foreign Language Anxiety of Students by School Types

Variable		Sum of Squares	df	Mean Square	F	p
Foreign Language Anxiety	Between Groups	1012.693	2	506.347	2.314	.099
	Within Groups	197168.523	901	218.833		
	Total	198181.217	903			

The result revealed that there was no significant difference in students' foreign language anxiety by their school types although they had mean differences.

Table 6 Descriptive Statistics for Foreign Language Anxiety of Students by Father's Education Level

Variable	Father's Education Level	N	Minimum	Maximum	Mean	SD
Foreign Language Anxiety	Primary	461	51	130	90.06	14.42
	Middle	326	43	128	89.27	15.22
	High	75	54	122	86.91	14.32
	Graduate	42	47	117	84.05	15.74

Based on the result of the analysis, there were slightly differences in mean score of students according to their father's education level. To examine foreign language anxiety of middle school students regarding with their father's education level, one-way ANOVA was applied.

Table 7 ANOVA Result for Mean Comparison in Foreign Language Anxiety of Students by Father's Education Level

Variable		Sum of Squares	df	Mean Square	F	p
Foreign Language Anxiety	Between Groups	1848.19	3	616.06	2.824*	.038
	Within Groups	196333.03	900	218.15		
	Total	198181.22	903			

Note: * The mean difference is significant at .05 level.

According to the Table 7, there was significant difference in foreign language anxiety of students by father's education level at 0.05 level.

Table 8 Descriptive Statistics for Foreign Language Anxiety of Students by Mother's Education Level

Variable	Mother's Education Level	N	Minimum	Maximum	Mean	SD
Foreign Language Anxiety	Primary	538	51	130	90.34	14.25
	Middle	267	43	130	88.90	15.64
	High	51	63	126	87.43	13.53
	Graduate	48	47	111	80.54	14.87

Based on the result of the Table 8, there were slightly differences in mean score of students according to their father's education level. To examine foreign language anxiety of middle school students regarding with their mother's education level, it was computed with one-way ANOVA. The results were presented in the following table.

Table 9 ANOVA Result for Mean Comparison in Foreign Language Anxiety of Students by Mother's Education Level

Variable		Sum of Squares	df	Mean Square	F	p
Foreign Language Anxiety	Between Groups	448.25	3	1494.08	6.942***	.000
	Within Groups	193698.97	900	215.22		
	Total	198181.22	903			

Note: *** The mean difference is significant at .001 level.

In order to get more detail information of mother's education level of middle school students, Post-Hoc test was further computed and the results were given in table 10.

Table 10 Result of Tukey (HSD) in Foreign Language Anxiety of Middle School Students by Mother's Education Level

Mother's Education Level (I)	Mother's Education Level (J)	Mean Differences (I-J)	p
Graduate	Primary	-9.80***	.000
	Middle	-8.36**	.002
	High	-6.89	.091

Note: **The mean difference is significant at .01 level.

***The mean difference is significant at .001 level.

According to the Post-Hoc test, there was significant difference between the mean scores of students whose mothers were at graduate level and middle education level at .01 level. The mean difference was also significant between students with mother's education at graduate level and primary level at .001 level respectively. It could be interpreted that students whose mother's education at primary level were highest in foreign language anxiety than other students.

Table 11 Descriptive Statistics for English Reading Comprehension Skills of Middle School Students

Variable	N	Minimum	Maximum	Mean	SD
English Reading Comprehension Skills	904	0	20	11.81	4.33

In Table 11, the mean, standard deviation, maximum score and minimum score of English Reading Comprehension Skills of Middle School students were presented. Descriptive analysis stated that the mean and standard deviation of the variable were 11.81 and 4.33. The minimum score is 0 and the maximum score is 20 also. The mean score is 11.81 and is higher than the theoretical mean scores. Thus the middle school students from Basic Education Schools of Tada-U Township were high in English Reading Comprehension Skills.

Table 12 Descriptive Statistics and Results of Independent Samples *t* Test for English Reading Comprehension Skills of Middle School Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
English Reading Comprehension Skills	Male	452	10.63	4.26	-8.667***	894.456	.000
	Female	452	12.98	3.88			

Note: **The mean difference is significant at .001 level.

Based on the result of the table 12, there was significant difference between male and female students at 0.01 level. And female students possessed better performance in English Reading Comprehension Skills than male students.

Table 13 Mean Comparison for English Reading Comprehension Skills of Middle School Students by School Types

Variable	School Types	N	Minimum	Maximum	Mean	SD
English Reading Comprehension Skills	BEHS	312	0	20	12.89	4.01
	BEHS(Branch)	282	0	20	10.97	4.26
	BEMS	310	1	20	11.49	4.24
	Total	904	0	20	11.81	4.24

Based on the result of Table 13, it can be concluded that there were slightly differences in English Reading Comprehension Skills of students by school types. In order to examine there were significant differences or not, one-way analysis of variance (ANOVA) was conducted.

Table 14 ANOVA Result of Mean Comparison in English Reading Comprehension Skills of Middle School Students by School Types

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
English Reading Comprehension Skills	Between Groups	594.02	2	297.01	17.115***	.000
	Within Groups	15635.26	901	17.35		
	Total	16229.27	903			

Note: *** The mean difference is significant at .001level.

The result of ANOVA revealed the significant differences in English Reading Comprehension Skills of students. Then to attain more detail information about how different in students' English Reading Comprehension Skills in term of school types, Post-Hoc test was computed.

Table 15 Result of Post-Hoc Games-Howell Test in English Reading Comprehension Skills of Middle School Students by School Types

School Types (I)	School Types (J)	Mean Differences (I-J)	<i>p</i>
BEHS	BEHS (Branch)	1.920***	.000
	BEMS	1.398***	.000

Note: *** The mean difference is significant at .001level.

From the Post-Hoc result, it could be interpreted that the English Reading Comprehension Skills of students in BEHS were significantly different with that of students in BEHS (Branch) and BEMS at .001 level although the students in BEHS (Branch) and BEMS were not significantly different to each other.

Table 16 Descriptive Statistics for English Reading Comprehension Skills of Students by Father's Education Level

Variable	Father's Education Level	N	Minimum	Maximum	Mean	SD
English Reading Comprehension Skills	Primary	461	0	20	11.66	4.27
	Middle	326	1	20	11.80	4.10
	High	75	0	20	11.85	4.54
	Graduate	42	3	20	13.41	4.25

Based on the result of the Table 16, there were slightly differences in English Reading Comprehension Skills of students by father's education level. According to the result of ANOVA, it could be concluded that there was no significant difference among father's education levels of middle school students.

Table 17 Descriptive Statistics for English Reading Comprehension Skills of Students by Mother's Education Level

Variable	Mother's Education Level	N	Minimum	Maximum	Mean	SD
English Reading Comprehension Skills	Primary	538	0	20	11.44	4.34
	Middle	267	1	20	12.00	3.90
	High	51	4	20	12.41	4.08
	Graduate	48	2	20	14.29	4.23

Based on the result of the Table 17, there were slightly mean differences in English Reading Comprehension Skills of middle school students.

Table 18 ANOVA Result of Mean Comparison in English Reading Comprehension Skills of Students by Mother's Education Level

Variable		Sum of Squares	df	Mean Square	F	p
English Reading Comprehension Skills	Between Groups	399.79	3	133.26	7.577***	.000
	Within Groups	15829.49	900	17.59		
	Total	16229.27	903			

Note: *** The mean difference is significant at .001 level.

According to the result of ANOVA, there were significant differences in English Reading Comprehension Skills of middle school students by their mother's education level at .001 level. In order to get more detail information about English Reading Comprehension Skills of middle school students according to their mother's education level, Post-Hoc test was further computed and the results were given below.

Table 19 Result of Post-Hoc Games-Howell test in English Reading Comprehension Skills of Middle School Students by Mother's Education Level

Mother's Education level(I)	Mother's Education level (J)	Mean Differences (I-J)	p
Graduate	Primary	2.86***	.000
	Middle	2.29**	.005
	High	1.88	.118

Note: **The mean difference is significant at .01 level.

***The mean difference is significant at .001 level.

According to the Post-Hoc test, there was significant difference at .01 level between students with mother's education at graduate level and middle level. The mean difference between students whose mother's education at graduate level and primary level was significant at .001 level. It could be interpreted that English Reading Comprehension Skills of students whose mother's education at graduate level were the highest among other students.

Table 20 Relationship between Foreign Language Anxiety and English Reading Comprehension Skills of Middle School Students

Variables	Foreign language anxiety	English Reading Comprehension Skills
Foreign Language Anxiety	-	-.30**
English Reading Comprehension Skills	-.30**	-

Note: ** Correlation is significant at .01 level (2-tailed).

By the result of Table 20, there was a negative relationship between foreign language anxiety and English Reading Comprehension Skills of middle school students at .01 level. This means that students with low level of foreign language anxiety were likely to have high English Reading Comprehension Skills and vice versa.

Conclusion

The main purpose of the present study is to examine the Middle School Students' foreign language anxiety and reading comprehension skills in English. Firstly, it was found that the total mean score of middle school students' foreign language anxiety was lower than the theoretical mean score of foreign language anxiety. Therefore, it could be interpreted that the middle school students in Tada-U Township were less in foreign language anxiety.

Again Independent Samples *t* Test indicated that there was significant difference between male and female students in their foreign language anxiety at .01 level. Male students were higher in foreign language anxiety than female students.

Next, in order to investigate whether there were differences between middle school students' foreign language anxiety among their school types, the data analysis of one way ANOVA was conducted. The result revealed that there were no differences among these school types although it indicated slightly mean differences.

Since it could be interpreted that parents' education level can affect upon students' foreign language anxiety, father's education level and mother education level of middle school students were considered and computed. The mean score of the students whose fathers were at primary education level showed the highest among other three levels. The mean score of students whose fathers were graduates were found the least in all education level. It also showed that the mean difference is significant at .05 level according to one way ANOVA result. So, it could be interpreted that students whose fathers were at primary education level were the highest in foreign language anxiety.

Again, in order to examine how mother's education level can influence on students' foreign language anxiety, the data that were collected for it was analyzed by one-way ANOVA. The results also revealed the same result with the results of father's education level. The results of Post-Hoc test pointed out students whose mothers were at graduate level showed the least anxiety than the students whose mothers were at other education levels. The results of parents' education level highlighted that parent's education can also affect on their children foreign language anxiety. In fact, family background including parent's education level can influence the students' anxiety in school environment.

In the field of English Reading Comprehension Skills, the mean score of female students was higher than male students and the Independent Samples *t* Test revealed that there was a significant difference. So, female learners had better English Reading Comprehension Skills than male students.

Moreover, one way ANOVA results also indicated the significant differences among the English Reading Comprehension Skills of middle school students by school types at .01 level. According to Post-Hoc (Tukey) result, the students in BEHS performed the best in English Reading Comprehension Skills than the other students from two school types. This may be for many reasons such as class size and population. And the numbers of teachers play very important role for students' achievement. Many BEHS (Branch) schools still need for fulfilment of teachers.

The result of ANOVA did not show significant differences among English Reading Comprehension Skills of middle school students by father's education level. However, not only ANOVA result but also Post-Hoc test revealed the difference between students' English Reading Comprehension Skills by mother's education level. Therefore, it can be concluded that parents' education also influenced students' English Reading Comprehension Skills.

The relationship between Foreign Language Anxiety and English Reading Comprehension Skills was also analyzed. In the Pearson Product-moment correlation analysis, there was a negative relationship between Foreign Language Anxiety and English Reading Comprehension Skills of middle school students ($r = -.30$). It can be interpreted that the students with low level of foreign language anxiety were likely to perform better in reading comprehension skills in English.

According to the findings and conclusions of the present study, the students in Tada-U Township felt a little more than moderate level of foreign language anxiety. So, it is necessary to reduce middle school students' foreign language anxiety in order to promote their English Reading Comprehension Skills. In order to reduce middle school students' foreign language anxiety and promote their English Reading Comprehension Skills, some recommendations for students were presented in the following.

1. Positive learning environment that reduces students' foreign language anxiety and enhances their English Reading Comprehension Skills should be provided.
2. Teachers need to assume the individual differences of the learners and different backgrounds where they come from.
3. Students should be encouraged not to be afraid of doing mistakes during their foreign language activity.
4. Students should be helped to appreciate their performance and be proud of their activities.
5. Effective reading programs should be created in the classroom in order to improve their English Reading Comprehension Skills.
6. Parents should actively enhance their children to improve their English Reading Comprehension Skills by cooperating with teachers.

Acknowledgements

First of all, we like to acknowledge our indebtedness to Dr. Saw Pyone Naing (Rector) and Dr. Myat Myat Thaw (Pro-rector) in Sagaing University of Education for their excellent arrangements and permissions to do this research.

Our special gratitude expands to Dr. Khin Hnin New (Professor & Head, Department of Educational Psychology, Sagaing University of Education) for her precious advice and kind support on this paper.

We would like to include a special thanks to Dr. Min Than (Professor & Head, Department of English, Sagaing University of Education) and we really appreciate her insightful comments and valuable editing this paper.

References

- Chall, J. S. (1983). *Stages of Reading Development*. New York: McGraw-Hill.
- Duke, N. (2003). *Comprehension instruction for informational text*. Presentation at the annual meeting of the Michigan Reading Association, Grand Rapids, MI.
- Duke, N. K., & Block, M. K. (2012). *Improving reading in the primary grades*. *Future of Education*, 4(1), 127-152. doi:10.1007/BFO2648210
- Eason, S. H., Goldberg, L. F., Young, K. M., Geist, M. C., & Cutting, L. E. (2012). Reader-text interactions: How differential text and question types influence cognitive skills needed for reading comprehension. *Journal of Educational Psychology*, 104(3), 515-528. doi:10.1037/a0027182.
- Gardner, R.C. (1985). *Social psychology and second language learning: The role of attitudes and motivation*. London: Edward Arnold.
- Goldman, S. R. (2012). Adolescent literacy: Learning and understanding content. *The Future of Children*, 22(2), 89-116. doi:10.1353/foc.2012.0011
- Horwitz, E. K, Horwitz, M. B, & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, 70, 125– 132. <https://doi.org/10.2307/3586302>.
- Horwitz, E.K. (2010). Foreign and second language anxiety. *Language Teaching*, 43(2), 154-167. Retrieved from <http://dx.doi.org/10.1111/0026-7902.00067>
- Kintch, W. (1974). *The representation of meaning in memory*. Hillsdale, N.J.: Erlbaum.
- Kintch, W. (1998). *Comprehension: A paradigm for cognition*. New York: Cambridge University Press.
- Lesaux, N. K. (2012). Reading and reading instruction for children from low-income and non-English-speaking households. *The Future of Children*, 22(2), 73-88. doi. 10.1353/foc.2012.0010
- MacIntyre, P. D. & Gardner, R. C. (1989). Anxiety and Second-language learning: Toward a theoretical clarification. *Language Learning*, 39(2), 251-275. Retrieved from <https://onlinelibrary.wiley.Com/doi/abs/10.1111/j.1467-1770.1989.tb00423.x>
- MacIntyre, P.D. (1998). Conceptualizing willingness to communicate in a L2: a situational model of L2 confidence and affiliation. *The Modern Language Journal*, 82, 545–562. <https://doi.org/10.1111/j.1540-4781.1998.tb05543.x>.
- Meyer, B. J. F., & Ray, M. N. (2011). Structure strategy interventions: Increasing reading comprehension of expository text. *International Electronic Journal of Elementary Education*, 4(1), 127-152. Retrieved from <http://files.eric.ed.gov/fulltext/EJ1070453.pdf>
- Van Dijk, & Kintsch, W. (1983). *Strategies of discourse comprehension*. New York: Academic Press.
- von Wörde, R. (2003, Spring). Students' perspectives on foreign language anxiety. *Inquiry: Virginia Community College System*, 8(1), 1-15. Retrieved from <http://files.eric.ed.gov/fulltext/EJ876838.pdf>
- William, C. Shiel, Jr., MD, FACP, FACR. (2018). Medical Definition of Anxiety. Retrieved from <http://www.medicinenet.com/script/main/art.asp?articlekey=9947>
- Wixon, Peters, Weber, & Robert (1987). New direction in statewide reading assessment. *The reading teachers*, 40, 749-754. Retrieved from <http://www.eduplace.com/rdg/res/teach/def.html>.
- Young, DJ (1994). New directions in language anxiety research. In CA Klee (Ed.), *Faces in a crowd: The individual learner in multisection courses*, (pp. 3–46). Boston: Heinle & Heinle.

METACOGNITIVE AWARENESS AND PHYSICS ACHIEVEMENT OF GRADE 10 STUDENTS IN MINBU TOWNSHIP

Yin Mon Thant¹, Tint Swe²

Abstract

The main purpose of this study was to examine metacognitive awareness and physics achievement of Grade 10 students in Minbu Township. The descriptive research design and quantitative and qualitative survey method were taken in the present study. The total of 1000 (500 male and 500 female) Grade 10 students were selected as participants from five high schools and five high schools (branch) by using simple random sampling technique. Metacognitive Awareness Inventory (MAI) developed by Schraw & Dennison (1994) with 52 items was used to measure metacognitive awareness and Physics Achievement Test with 35 items developed by the researcher was used to measure physics achievement of Grade 10 students. The internal consistency (Cronbach's alpha) was 0.915 for metacognitive awareness and 0.701 for physics achievement. Descriptive statistics, independent sample *t* test, one-way ANOVA and Pearson product-moment correlation were utilized. According to the findings, there was a significant difference in metacognitive awareness and physics achievement by gender and subject combination. The mean score of female was higher than that of male students in both. Then, combination 7 students had higher metacognitive awareness and physics achievement than combination 1 students. There was no significant difference in metacognitive awareness by parents' education. But, there was significant difference in physics achievement by parents' education. According to the Pearson product-moment correlation, there was no significant correlation between metacognitive awareness and physics achievement of Grade 10 students ($r = .046$).

Keywords: Metacognition, Metacognitive Awareness, Physics Achievement

Introduction

Education refers to the systematic procedure for gaining understanding and skills through study and directions (Justin, G. 2018). Traditional education focuses on teaching, not learning. Learning is a process developed within the single individual throughout life. If one is not aware of, or understands one's own learning process and studying strategies, it becomes difficult to handle and take control of one's learning. This awareness can be referred to as Metacognition. "To make an individual metacognitive aware is to ensure that the individual has learned how to learn" (Garner, 1988). Students without metacognitive approaches are essentially learners without direction (O'Malley, et al., 1985). Metacognition play an important role in education because it helps learner to be capable of develop a plan, monitor and evaluate how much it's effective, that means metacognition helps the learner to be more involved in learning process (Costa & Kallick, 2001, cited in Abdellah, 2015). Metacognitive awareness is believed to be very important in the academic environment, as numerous studies have shown that metacognitive awareness is a strong predictor for academic performance in various subjects (Coutinbo, 2007). Physics is the study of matter and their interaction. Physics is an essential part of the educational system and of an advanced society (Samy, 2015). Many researchers have attempted to find out the causes of students' poor performance in physics. Problems identified include: poor instructional strategies (Adegoke, 2010), the abstract nature of physics concepts (Shehu, 2006), a lack of qualified teachers (Biodun, 2004), poor infrastructure and inadequate laboratory facilities (Shawl, 2003), teacher centered instruction (Okeke, 2001), and poor availability and utilization of instructional materials (Gambari & Gana, 2005). Metacognitive awareness would enable students to do well academically, decide career and achieve their future goals. It ensures positive

¹ Senior Teacher, Basic Education High School (Branch), Taung Yatt, Minbu Township

² Associate Professor, Department of Educational Psychology, Sagaing University of Education

academic outcomes for students. Thus, the present study emphasizes to investigate metacognitive awareness and physics achievement of Grade 10 students.

Purpose of the Research

The main purpose of this study was to investigate metacognitive awareness and physics achievement of Grade 10 students in Minbu Township.

The specific objectives are as follow:

1. To explore metacognitive awareness of Grade 10 students by gender, subject combination and parents' education.
2. To study physics achievement of Grade 10 students by gender, subject combination and parents' education.
3. To find out the relationship between metacognitive awareness and physics achievement of Grade 10 students.

Definitions of the Key Terms

- Metacognition** : Metacognition is the ability to reflect upon, understand and control one's learning (Schraw & Dennison, 1994).
- Metacognitive Awareness** : Metacognitive awareness is defined as all learning process and behaviors involving and degree of reflection, learning-strategies selection and intentional mental processing that can result in a student's improved ability to learn (Conley, 2014).
- Physics** : The branch of science concerned with the nature and properties of matter and energy. The subject matter of physics includes mechanics, heat, light and other radiation, sound, electricity, magnetism, and the structure of atoms (Rafiq, 2019).
- Physics Achievement** : Achievement in physics refers to the total scores obtained by an individual in the test constructed covering the instructional objectives (Thorndike & Hagen, 1997).

Review of Related Literature

(1) Flavell's Model of Metacognition

Metacognitive knowledge: Flavell (1979) defined metacognitive knowledge as one's knowledge or beliefs about the factors that affect cognitive activities. Flavell described three categories of these knowledge factors: (1) person variables, (2) task variables, and (3) strategy variables.

Metacognitive experiences: Metacognitive experiences, Flavell's (1979) second class of phenomena included the subjective internal responses of an individual to his own metacognitive knowledge, goals, or strategies. These may be fleeting or lengthy, and can occur before, during, or after a cognitive enterprise.

Metacognitive goals and tasks: Metacognitive goals and tasks are the desired outcomes or objectives of a cognitive venture. Goals and tasks include comprehension, committing facts to memory, or producing something, such as a written document or an answer to a math problem, or of simply improving one's knowledge about something. Achievement of a goal draws heavily on both metacognitive knowledge and metacognitive experience for its successful completion (Flavell, 1979).

Metacognitive strategies: Metacognitive strategies are designed to monitor cognitive progress. Metacognitive strategies are ordered processes used to control one's own cognitive activities and to ensure that a cognitive goal has been met.

(2) Brown's Model of Metacognition

Knowledge of cognition: Knowledge about cognition referred to what individuals knew about their own cognitive processes which facilitated the reflective aspects of metacognition (Brown, 1987). In additional studies, knowledge about cognition was characterized into declarative knowledge, procedural knowledge, and conditional knowledge (Jacobs & Paris, 1987).

Regulation of cognition: Regulation of cognition referred to a set of activities that help the learners regulate and monitor learning, which facilitate the control or executive aspect of learning (Brown, 1987). A quantity of studies report noteworthy improvements in learning when regulatory skills and an understanding of how to use and apply these skills are contained within classroom instruction (Cross & Paris, 1988). Regulation of cognition entailed three metacognitive strategies: planning, monitoring, and evaluating strategies.

Methodology

In this study, the descriptive survey method and quantitative and qualitative research design were used.

Sample

The participants used for this study were Grade 10 students from Minbu Township. By using simple random sampling technique, the students were selected as the sample from five high schools and five high schools (branch). The total of the students were 1000 (500 male, 500 female) from the selected schools to participate in this study. Then, qualitative research method which included the participants consist of ten (three male and seven female) Grade 10 students who are studying from the selected schools of Minbu Township.

Instrumentation

The instruments used in this research were "Metacognitive Awareness Inventory (MAI) developed by Schraw and Dennison (1994) to measure metacognitive awareness and to measure physics achievement of students. The Researcher developed the physics achievement test.

Metacognitive Awareness Inventory (MAI) consisted of eight subscales which are declarative knowledge (DK), procedural knowledge (PK), conditional knowledge (CK), planning (P), information management strategies (IMS), comprehension monitoring (CM), debugging strategies (DS), and evaluation (E). It was composed of 52 items. Physics achievement test was constructed under the direction and guidance of experts in educational test and measurement field, experts in methodology and experts in physics department with the reference of Grade 10 Physics Text Book. The type of test items is multiple choice items with three alternatives. It was composed of 35 items. For interview questions, the researcher was constructed 12 items.

Procedure

Firstly, researcher reviewed the related literature from several available books, theses, journals, dissertation, reports, handouts and internet sources. And then, Metacognitive Awareness Inventory were adapted and also translated to Myanmar version and Physics achievement test was constructed by the researcher. In order to validate these instruments, experts' review was requested. Next, pilot study was conducted. And, the instruments were taken reliability according to pilot study results by using SPSS (20.00). After taking the validity and reliability of the instruments, the actual test was implemented at selected schools in Minbu Township. After

performing actual test, the collected data were analyzed and interpreted. In interpreting the actual test, the internal consistency reliability (Cronbach's alpha coefficient) was 0.915 for metacognitive awareness and 0.701 for physics achievement. Finally, the necessary suggestions and recommendations for this study were discussed.

Data Analysis and Findings

Table 1 Descriptive Statistics for Metacognitive Awareness of Grade 10 Students

Variable	N	Min	Max	Mean	SD
Metacognitive Awareness	1000	115	258	194.71	20.526

Table 1 shows that the minimum and maximum scores were 115 and 258 respectively. Then, the mean score of students' metacognitive awareness was 194.71 and standard deviation was 20.526. According to the results, it can be interpreted that the level of students' metacognitive awareness was satisfactory because the mean score was greater than the theoretically mean score 156.

Table 2 Descriptive Statistics for Eight Dimensions of Metacognitive Awareness of Grade 10 Students

Variables	No of Items	Min	Max	Mean	Mean %	SD
DK	8	18	40	29.78	74.45	3.707
PK	4	6	20	14.48	72.4	2.210
CK	5	10	25	19.36	77.44	2.520
P	7	13	35	26.67	76.2	3.548
IMS	10	17	49	35.95	73.36	5.064
CM	7	12	35	26.38	75.37	3.482
DS	5	7	25	19.81	79.24	2.743
E	6	12	30	22.29	74.3	3.034

Table 2 indicates that the mean percentage of debugging strategies the is highest and that of procedural knowledge is lowest among eight dimensions. Therefore, it may be said that the students show high ability in debugging strategies among subscales of metacognitive awareness. According to the result, the mean percentage of all subscales is above 70% and so, the result was satisfactory to some extent.

Table 3 The Result of Independent Samples *t* Test on Metacognitive Awareness of Grade 10 Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Metacognitive Awareness	Male	500	191.73	22.326	-4.643***	998	.000	-5.966
	Female	500	197.70	18,090				

Note: *** The mean difference is significant at the 0.001 level

As the result, there was a significant difference between male and female student in metacognitive awareness at 0.001level. This might be due to the fact that girls were more aware about the role of thinking in self-regulation of learning, used more metacognitive strategies and were motivated than boys to express feeling related to learning. Thus, it may be said that metacognitive awareness was influenced by gender.

Table 4 The Result of Independent Samples *t* Test for Each Dimension of Metacognitive Awareness of Grade 10 Students by Gender

Variables	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
DK	Male	500	29.556	4.0979	-1.922	998	.055
	Female	500	30.006	3.2587			
PK	Male	500	14.24	2.437	-3.381***	998	.001
	Female	500	14.71	1.930			
CK	Male	500	17.00	2.674	-4.523***	998	.000
	Female	500	19.72	2.303			
P	Male	500	26.36	3.915	-2.763**	998	.006
	Female	500	26.98	3.111			
IMS	Male	500	35.32	5.555	-3.925***	998	.000
	Female	500	36.57	4.438			
CM	Male	500	26.05	3.715	-2.982**	998	.003
	Female	500	26.70	3.203			
DS	Male	500	19.37	2.905	-5.197***	998	.000
	Female	500	20.26	2.495			
E	Male	500	21.83	3.191	-4.858***	998	.000
	Female	500	22.75	2.798			

Note: *** The mean difference is significant at the 0.001 level.

** The mean difference is significant at the 0.01 level.

According to the result, the mean score of male students was highest in information management strategies and lowest in procedural knowledge dimension. For female students, the mean score was highest in information management strategies and lowest in procedural knowledge dimension.

Among declarative knowledge dimension, there was a significant difference in all dimensions between male and female students. The mean scores of females were significantly higher than that of males in all dimensions. It may be concluded that female students displayed more goal setting, more specific in planning strategies and self-monitoring than male students.

Table 5 The Result of Independent Samples *t* Test on Metacognitive Awareness of Grade 10 Students by Subject Combination

Variable	Subject Com	Mean	SD	N	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Metacognitive Awareness	Com 1	191.75	21.557	500	-4.614***	998	.000	-5.930
	Com 7	197.68	19.005	500				

Note: *** The mean difference is significant at the 0.001 level.

Combination 1 = Myanmar, English, Mathematics, Chemistry, Physics, Economic Combination 7 = Myanmar, English, Mathematics, Chemistry, Physics, Biology

According to the *t* test result, there was significant difference in metacognitive awareness by subject combination. It may be concluded that Combination 7 students had higher metacognitive awareness than Combination 1 students. Since most of students who took

Combination 7 may be bright. It can also be assumed that most of Combination 7 students might have better thinking abilities in metacognitive awareness.

Furthermore, independent sample *t* test was conducted to examine mean comparison on each dimension of Grade 10 students' metacognitive awareness by gender. According to the result, the mean score indicate that metacognitive awareness of the students who take combination 7 was higher than that of the students who take combination 1 in all dimensions. The result was shown in Table 6.

Table 6 The Result of Independent Samples *t* Test on Dimensions of Metacognitive Awareness of Grade 10 Students by Subject Combination

Variables	Sub Com	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
DK	Com 1	500	29.462	3.8296	2.730**	998	.006
	Com 7	500	30.100	3.5557			
PK	Com 1	500	14.43	2.300	-.615	998	.539
	Com 7	500	14.52	2.116			
CK	Com 1	500	18.95	2.677	-5.251***	998	.000
	Com 7	500	19.77	2.282			
P	Com 1	500	26.35	3.560	-2.854**	998	.004
	Com 7	500	26.99	3.510			
IMS	Com 1	500	35.25	5.280	-4.425***	998	.000
	Com 7	500	36.65	4.740			
CM	Com 1	500	26.04	3.527	-3.037**	998	.002
	Com 7	500	26.71	3.407			
DS	Com 1	500	19.43	2.867	-4.481***	998	.000
	Com 7	500	20.20	2.558			
E	Com 1	500	21.84	3.129	-4.750***	998	.000
	Com 7	500	22.74	2.869			

Note: *** The mean difference is significant at the 0.001 level.

** The mean difference is significant at the 0.01 level.

According to the result, students were highest in information management strategies among all dimensions for both combinations. Besides, the mean score was lowest in procedural knowledge for both combination 1 and 7.

To know whether the two groups varied significantly, independent sample *t* test was computed. According to the result, there was a significant difference in all dimensions except procedural knowledge. Hence, it can be interpreted that the mean score of students who take combination 7 were higher than that of those whose take combination 1 and this may be due to the fact that students who take combination 1 are weak in using which strategies are suitable to expected goals to achieve.

Table 7 Results of ANOVA for Metacognitive Awareness of Grade 10 Students by Father Education

Metacognitive Awareness	Sum of Squares	<i>df</i>	Mean Squares	<i>F</i>	<i>p</i>
Between Groups	1573.391	3	524.464	1.246	.292
Within Groups	419339.240	996	421.023		
Total	420912.631	999			

According to the ANOVA result in Table 7, there were no significant differences in metacognitive awareness of students among father education ($p > .05$).

Table 8 Results of ANOVA for Metacognitive Awareness of Grade 10 Students by Mother Education

Metacognitive Awareness	Sum of Squares	df	Mean Squares	F	p
Between Groups	2437.099	3	812.366	1.933	.122
Within Groups	418475.532	996	420.156		
Total	420912.631	999			

According to the ANOVA result in Table 8, there were no significant differences in metacognitive awareness of students among Mother Education.

It may be possible that father and mother education level can or not guide the students to improve metacognitive awareness by doing several ways.

Descriptive Statistics for Physics Achievement of Grade 10 Students

Table 9 Descriptive Statistics for Physics Achievement of Grade 10 Students

Variable	N	Min	Max	Mean	SD
Physics Achievement	1000	3	30	18.80	4.926

According to the result, the minimum and maximum scores of physics achievement were 3 and 30 respectively. The value of standard deviation was 4.926. The value of mean score was 18.80 and higher than the theoretical mean score 17.5. According to the results, it can be interpreted that the students' physics achievement level was satisfactory.

Table 10 The Result of Independent Samples *t* Test on Physics Achievement of Grade 10 Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	df	<i>p</i>
Physics Achievement	Male	500	12.75	4.644	-10.477***	998	.000
	Female	500	20.35	4.713			

Note: *** The mean difference is significant at the 0.001 level.

Table 10 shows that the female students were significantly higher than the male students in physics achievement at 0.00level. It may be concluded that although the male students are bright in natural, most of the female students concentrate more on the study than the male students and then female students always ask for the suggestions from differences of attention and their own efforts on the study by gender.

Table 11 The Result of Independent Samples *t* Test on Physics Achievement of Grade 10 Students by Subject Combination

Variable	Subject Combination	N	Mean	SD	<i>t</i>	df	<i>p</i>
Physics Achievement	Combination 1	500	17.08	4.740	-11.808***	998	.000
	Combination 7	500	20.52	4.491			

Note: *** The mean difference is significant at the 0.001 level.

According to the *t* result, there was a significant difference in metacognitive awareness by subject combination. Hence, it can be interpreted that high school students choose their specialized combination according to their interest. And Combination 7 students were more learning science subjects than Combination 1 students.

Table 12 Results of ANOVA for Physics Achievement by Father Education

Physics Achievement	Sum of Squares	df	Mean Squares	F	p
Between Groups	430.823	3	143.608	6.006***	.000
Within Groups	23815.177	996	23.911		
Total	24246.000	999			

Note: *** The mean difference is significant at the 0.001 level.

Table 12 shows that there were significant differences in physics achievement of students among father education at 0.001level. To get the specific information about the difference in metacognitive awareness among father education, Post-Hoc test was conducted by Tukey HSD method. The results of Post-Hoc test were shown in Table 13.

Table 13 Results of Tukey HSD Test for Physics Achievement of Grade 10 Students by Father Education

Variable	(I)Father Education	(J) Father Education	Mean Difference (I-J)	p
Physics Achievement	Primary	Middle	-.514	.433
		High	-1.889**	.003
		Graduated	-1.945*	.019

Note: * The mean difference is significant at the 0.05 level.

** The mean difference is significant at the 0.01 level.

According to the Table 13, it was observed that the mean score of the physics achievement of Father Education in High and Graduated were significantly higher than that of Primary at 0.01level and 0.05level respectively. Therefore, it can be interpreted that there was effect on physics achievement by Father Education.

Table 14 Results of ANOVA for Physics Achievement by Mother Education

Physics Achievement	Sum of Squares	df	Mean Squares	F	p
Between Groups	63.297	3	187.766	7.897***	.000
Within Groups	23682.703	996	23.778		
Total	24246.000	999			

Note: *** The mean difference is significant at the 0.001 level.

Table 14 shows that there were significant differences in physics achievement of students among mother education at 0.001level. To get the specific information about the difference in physics achievement among mother education, Post-Hoc test was conducted by Tukey HSD method. The results of Post-Hoc test were shown in Table 15.

Table 15 Results of Tukey HSD Test for Physics Achievement of Grade 10 Students by Mother Education

Variable	(I) Mother Education	(J) Mother Education	Mean Difference (I-J)	p
Physics Achievement	Primary	Middle	-.734	.160
		High	-1.126	.277
		Graduated	-3.158***	.000
	Middle	Primary	.734	.160
		High	-.392	.935
		Graduated	-2.424**	.005

Note: ** The mean difference is significant at the 0.01 level.

*** The mean difference is significant at the 0.001 level.

According to the Table 15, it was observed that the mean score of the physics achievement of Mother Education in Graduated was significantly higher than that of Primary and Middle at 0.001 and 0.01 levels respectively. Therefore, it can be interpreted that there was effect on physics achievement by Mother Education.

According to the results, it can be said that parents hold high degree; the students can get high marks in physics. This may be possible that students' physics achievement may depend on guidance of parents, parenting styles and parental involvement in education.

Relationship between Metacognitive Awareness and Physics Achievement of Grade 10 Students

Table 16 Correlation between Metacognitive Awareness and Physics Achievement of Grade 10 Students

Variables	Physics Achievement
Metacognitive Awareness	.046

According to the result, there was no statistically significant relationship between metacognitive awareness and physics achievement ($r = .046$).

Qualitative Analysis

This section presented the result of interview conducted with the participants in order to ensure the reasons of no correlation between metacognitive awareness and physics achievement of Grade 10 students.

Findings of Qualitative Study

According to interviewing, the students from "high metacognitive awareness and high physics achievement" group, "low metacognitive awareness and low physics achievement" group, "high metacognitive awareness and low physics achievement" group and "low metacognitive awareness and high physics achievement" group were replied to the respective questions.

It may be concluded that metacognitive awareness of Grade 10 students were high because 60% of students replied that they read the materials carefully before they begin the lesson, 60% of students answered that they learn the important things, 40% of students replied that they periodically review the understanding of important relationships, 40% of students told that they consciously focus their attention on important information and 40% of students replied that they take note carefully the lesson, 80% of students answered that they try to ask their teacher and friends and 40% of students replied that they summarize what they have learned.

Metacognitive awareness of Grade 10 students were low because 40% of students replied that they use the textbook to help them and take note carefully the lessons, 50% of students replied that they do not use learning methods and strategies during learning the lesson and 40% of students told that they do not evaluated their self after finishing their studying.

Physics achievement of Grade 10 students were high because 30% of students replied that they do not perform their physics practical but they understand, 20% of students told that teachers use question and answer method, make academic preparation and understand the physics concepts and 50% of students answered that teacher use lecture method, do not make academic preparation and understand the physics concepts, 20% of students told that they have family supported, involve in the activities of discussion and make study habit concerning their studying and 40% of students told that physics is a difficult subject and they are very interested.

Physics achievement of Grade 10 students were low because 70% of students told that they do not perform their physics practical and they do not understand, 20% of students replied that teacher use lecture method, do not make academic preparation and do not understand the physics concepts, 70% of students told that they have family supported, do not involve in the activities of discussion and make study habit concerning their studying and 40% of students told that physics is a difficult subject and they are very interested.

Discussion and Suggestions

According to the results, the mean scores of female students were slightly higher than male students in metacognitive awareness and according to the result of *t* test; there was significant difference in metacognitive awareness by gender. This might be due to the facts that female students displayed more goal setting and self-monitoring than male students. Thus, the teacher should try to help male students to regulate their own behavior to adapt to academic situations, to set academic goals, and to plan effectively for academic work.

And, the result of mean comparison for metacognitive awareness of Grade 10 students by subject combination revealed that there was significant difference between Combination 1 and 7. The result of *t* test result indicated that Combination 7 students had higher metacognitive awareness than Combination 1 students. Since most of students who took Combination 7 may be bright. It can also be assumed that most of the Combination 7 students might have better thinking abilities in metacognitive awareness.

According to research finding, there was no significant difference in metacognitive awareness of Grade 10 students among Fathers' Education and Mothers' Education. It may be possible that father and mother can or not guide the students to improve metacognitive awareness by doing several ways.

The result of this study mentioned that there was significant difference between the male and female students in physics achievement, and female students were better than the male students. This may be because of the facts that although the male students are bright in natural, most of the female students concentrate more on the study than the male students and then female students always ask for the suggestions from the teacher. Moreover, it may be due to the differences of attention and their own efforts on the study by gender.

Next, it was found that there was significant difference in physics achievement by subject combination. According to the result, Combination 7 students were higher than Combination 1 students in physics achievement. Here, the researcher considered the reasons for that. This is why high school students choose their specialized combination according to their interest. And Combination 7 students were more learning science subjects than Combination 1 students.

According to the ANOVA result, there were significant differences in physics achievement by father and mother education. This might be due to the fact that fathers' and

mothers' education can effect on the achievement of physics students. It can be said that parents hold high degrees; the students can get high marks in physics. Because it may be depend on guidance of parents, parenting styles and parental involvement in education.

According to the result, there was no statistically significant relationship between metacognitive awareness and physics achievement ($r = .046$). This result is consistent with the previous research of May Thu Zaw (2018).

According to the results, findings of qualitative study found that the reasons of no correlation between metacognitive awareness and physics achievement of Grade 10 students. So, teachers should use various teaching methods and instructional materials to raise the level of students' physics achievement. They should teach physics practical lessons with materials in the physics practical laboratory. Based on the findings, this study highlighted the necessary to train the students with metacognitive strategies. So, I will suggest for further research such as the researchers should take intervention practices to improve metacognitive awareness and physics achievement of students.

Acknowledgements

We would like to offer special gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) for their permission to conduct this work. Next, we extended my heartfelt gratitude to Chairperson, Dr. Khin Hnin Nwe (Professor and Head of Department of Educational Psychology, Sagaing University of Education) for her precious suggestions, guidance, advice and encouragement for the completion of the study. We would like to include a special thanks to U Min Than (Professor & Head, Department of English, Sagaing University of Education) and we really appreciate his insightful comments and valuable editing towards this paper.

References

- Abdellah, R. (2015). Metacognitive awareness and its relation to academic achievement and teaching performance of pre-service female teachers in Ajman University in UAE. *Journal of Social and Behavioral Sciences*, 174, 560-567.
- Adegoke, B. A. (2010). Integrating animations, narrations and textual materials for improving students' learning outcomes in senior secondary school physics. *Electronic Journal of Research in Educational Psychology*, 8(2), 725-748.
- Brown, A. L. (1987). Metacognition, executive control, self-regulation, and other more mysterious mechanisms. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 65-116). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Biodun, K. (2004). *A comparative study of the effect of teacher's qualification and teaching methods on students' achievement in chemistry* (Unpublished PhD Thesis). University of Calabar, Calabar, Nigeria. Dingel
- Conley, D. (2014). *Metacognition and learning: strategies for instructional design*. Available from <http://thelearningcoach.com/learning/metacognition-and-learning/>
- Coutinho, S.A. (2007). The relationship between goals, metacognition and academic success. *Educate*, Vol. 7, No. 1, p. 39-47.
- Cross, D. R. & Paris, S. G. (1988). Developmental and instructional analyses of children's metacognition and reading comprehension. *Journal of Educational Psychology*, 80(2), 131-142.
- Flavell, J. H. (1979). Metacognition and Cognitive Monitoring: A New Area of Cognitive Developmental Inquiry. *American Psychologist*, 34, 906-911.
- Garner, R. & Alexander, P.A. (1988). Metacognition: Answered and Unanswered Questions. *Educational Psychologist* 24: (2), pp. 143 -158.
- Gambari, A. I., & Gana, E. S. (2005). The role of instructional media in enhancing teaching and learning of engineering education and training. In Proceedings of the 6th Annual Engineering Conference of School of Engineering & Engineering Technology, Federal University of Technology (FUT), Minna (pp. 118-142). Minna, Nigeria: FUT.

- Jacobs, J. E., & Paris, S. G. (1987). Children's metacognition about reading: Issues in definition, measurement, and instruction. *Educational Psychologist*, 22, 255-278.
- Justin, G. (2018). *Why Education Is Essential?* Retrieved from <https://greymouseeducation.com/why-education-is-essential/>
- May Thu Zaw (2018). The Relationship Between Metacognition, Self-Efficiency and Physics Achievement Among Grade 9 Students. *J. Myanmar Acad. Arts Sci. 2018* Vol. XVI. No. 9B
- Okeke, B.A. (2001). New methods and techniques in education management. In O. Nnoli & I. Sulaiman (Eds.) *Reassessing the future of education in Nigeria*. Abuja: ETF Publication.
- O'Malley, J. M., Chamot, A. U., Stewner-Manzanares, G., Kupper, L., & Russo, R. P. (1985). Learning strategies used by beginning and intermediate students. *Language Learning*, 35(1), 21-46.
- Rafiq.M. (2019). *Physics: Definition and Branches*.
- Samy, A. (2015). Psychological Factors Associated with High and Low Achievement in Physics Among XII Standard Students of Villupuram District in Tamilnadu. *International Journal of Education and Psychological Research (IJEPR)*, 4(1), 18-21.
- Schraw, G. & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19(4), 460-475.
- Shawl, A. (2003). An adoption of problem based teaching and problem-based learning to improve the teaching of radioactivity. *Chinese Journal of Elementary Science*, 3(1), 14– 18.
- Shehu, A. T. (2006). Community resources materials for teaching physics. In Y. Aiyesimi, I. N. Mogbo, G. A. Ololi (Eds.), *Challenges in science and technological advancement and economic reforms: Proceedings of 2nd Annual School of Science & Science Education Conference, Federal University of Technology (FUT), Minna* (pp. 326–331). Minna, Nigeria: FUT.
- Thorndike. R & Hagen. E. (1997). *Measurement and Evaluation in Psychology and Education*. New York: John Wiley and Sons, Inc.

VISUAL PERCEPTION ABILITY AND READING ACHIEVEMENT OF GRADE 2 STUDENTS

Su Mon Lwin¹, Thida Lwin²

Abstract

The main aim of this study is to investigate visual perception ability and reading achievement of Grade 2 students in Aunglan Township. The quantitative research design and descriptive survey method were used in the present study. The total of 826 (male=413 and female=413) Grade 2 students were selected as participants by using simple random sampling technique. As research instruments, motor-free visual perception test-fourth edition (MVPT-4, five subtests) and reading achievement test (four subtests) were adapted and applied. The p-value and point-biserial correlation of the items in both tests were analyzed by using Bilog-MG Software. The internal consistency (Cronbach's alpha) of motor free visual perception test-fourth edition was .704 and that of reading achievement test was 0.958. The *t* test result indicated that significant difference was not found in visual perception ability by gender. But, the results indicated that female students had higher reading achievement than male students. Moreover, ANOVA result explored that students of high socio-economic status (SES) Group scored higher visual perception ability and reading achievement than those of other socio-economic status (SES) Groups. In this study, Grade 2 students in Middle School were highest in visual perception ability and those of High School were highest in reading achievement. Correlation matrix showed that students' visual perception ability was positively correlated with their reading achievement ($r=.56, p<0.01$). As early grades students' general visual perception scores increased, reading achievement increased. In addition to, linear regression result indicated that 31.3% of the variance in reading achievement was explained by students' visual perception ability. Better performance in visual perceptual ability contributes to classroom challenges influencing reading achievement. In early grades of education determining children's reading, reading achievement and visual perceptual ability are considered necessary for their post-education life.

Keywords: Perception, Visual Perception Ability, Reading Achievement

Introduction

Importance of the Study

In Myanmar, the national educational system is upgrading from 5 - 4 - 2 to (KG+12) KG - 5 - 4 - 3 by implementing National Educational Strategic Plan (2016-2021). Reforming basic education aims that all school children develop knowledge, skills, attitudes and competencies that are relevant to their lives and to the socio-economic development needs of 21st century in Myanmar.

In Myanmar, primary education is not only the first stage of basic education but also compulsory in principle. Primary education provides all pupils with the opportunity to develop their cognitive, social, emotional, cultural and physical skills to the best of their abilities, preparing them for their future school career. Primary education also provides students with fundamental skills in reading, writing and mathematics and to establish a solid foundation for learning.

Reading is a key skill that affects all other academic contents. Reading has the considerable role in the language teaching to strengthen the skills of listening, speaking, and writing (Maxom, 2009). Reading process of children includes visual perception, audio perception, memory, attention, language skills, cognitive abilities and social and emotional maturity (Çayır & Balci, 2017). Reading process includes the use of sign language of the information received from the visual perceptual processing. Reading process must have visual perception ability which is appropriate for children to differentiate written vocabulary, words,

¹ Tutor, Department of Educational Psychology, Sagaing Education Degree College

² Assistant Lecturer, Department of Educational Psychology, Sagaing University of Education

sentence and punctuation marks (Duru, 2008). Therefore, visual perception ability should be considered as a strong link to successful reading for children.

Visual perceptual skills begin to develop from birth and continue to evolve into adolescence, the critical period for visual perceptual development is between the ages of four to around seven or eight years of age (Aral et al., 2011; cited in Clarke, 2015). It is at this age that school children begin their academic journey and are expected to grasp everyday academic tasks of reading, comprehension, writing, spelling, mathematics and social participation (Erhardt & Duckman, 2005; cited in Clarke K., 2015). Therefore, students at this phase should be monitored the effect of their visual perceptual abilities in their academic success especially in reading.

Aim of the Study

The main aim of the study is to investigate into visual perception ability and reading achievement of Grade 2 students in Aunglan Township.

The specific objectives are:

1. To study visual perception ability of Grade 2 students by gender, socio-economic status and school type.
2. To develop reading achievement test for Grade 2 students.
3. To explore reading achievement of Grade 2 students by gender, socio-economic status and school type.
4. To find out relationship between visual perception ability and reading achievement of Grade 2 students.

Definition of Key Terms

Perception : the process of organization, identification, and interpretation of sensory information in order to represent and understand the presented information, or the environment (Schacter, 2011).

Visual Perception Ability : the ability to recognize, differentiate and give meaning to visual stimuli, and then relate this to previous experiences and inputs to learn new concepts (Neriman et al., 2011).

Reading : the ability to understand words contained in a document and make use of the knowledge for personal growth and development (Dadzie, 2008).

Reading Achievement : measures of text-based reading comprehension and indicates reading levels of school population.

Review of Related Literature

Theoretical Framework for Visual Perception

There have been many psychological theories of visual perception. The majority of the diverse array of perceptual theories concur that visual perception entails selecting, interpreting, and organizing visual sensations into meaningful experiences. In this research, gestalt theory, bottom-up processing and top-down processing of visual perception were discussed.

Gestalt Theory

Gestalt theory tried to explain how humans organize individual elements into groups and how humans perceive and recognize patterns. Gestalt is a German word and its meaning can be roughly translated into English as 'form, shape, or pattern' (Schwarz, 1988). The mind organizes

visual patters according to laws of perceptual organization, to generate holistic perception. Gestalt theory developed principles that try to explain how organizing individual elements into groups and to explain the way humans perceive and recognize patterns. There are seven Gestalt Principles which are figure-ground, proximity, similarity, symmetry, continuity, closure and common movement.

Visual Perception Theory

Psychologists distinguish between two types of processes in perception: bottom-up processing and top-down processing.

Bottom-up processing: Bottom-up processing is also known as data-driven processing. Bottom-up processes are relatively uninfluenced by the expectations or previous learning (the so-called higher-level processes). Bottom-up processes involve automatic, reflexive processing that takes place even when the perceiver is passively regarding the information.

Top-down Processing: In top-down processing, the perceiver's expectations, theories, or concepts guide the selection and combination of the information in the pattern recognition process. Top-down processes are influenced by past experience and stored knowledge.

Theoretical Framework of Reading Achievement

Reading is arguably as the most essential skills for success in educational context. The reading process begins with decoding words, that is, deciphering the letters that make-up individual words. But reading is more than merely processing letters and sounds. In this research, the theoretical framework for reading of transaction model was discussed.

Transactional Model

The transactional model makes the child an important agent in the reading process. In this theory, students comprehend text through three parts: prior knowledge, decoding skills and contexts as shown in figure. With very rich background knowledge and wide experience from the community and the child's home, the child approaches the text with finite set of strategies to unlock the meaning of the text being read (Barchers, 1998).

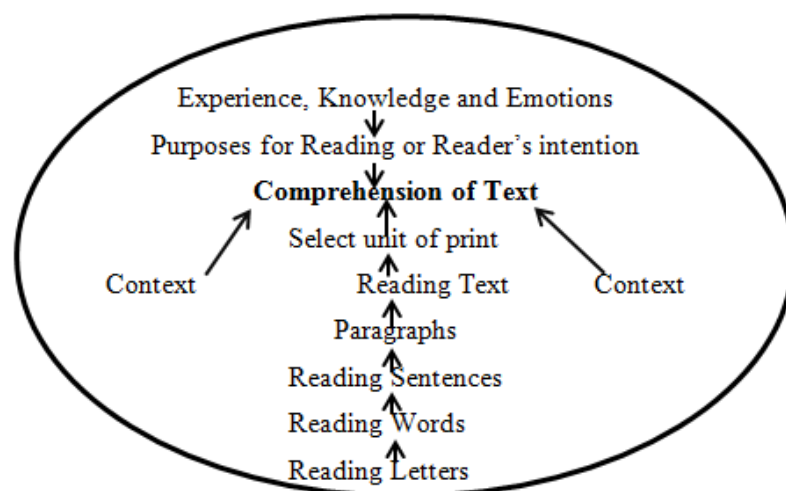


Figure: Transactional Model (Source: Barchers, 1998)

Method

Sampling

By using simple random sampling technique, students were selected from Aunglan Township, Magway Region. Total twenty seven schools were selected; five high schools,

fourteen middle schools and eight primary schools, respectively. A total of 826 Grade 2 students (413 males and 413 females) participated.

Instrumentation

In this study, the researcher used two instruments to investigate the Grade 2 students' visual perception ability and reading achievement. Motor Free Visual Perception test Fourth-Edition (MVPT-4) was employed to identify the visual perception ability of the students. In order to determine reading achievement of the students, reading achievement test developed by researcher based on Myanmar Textbook of Grade 2 students was used.

Motor-Free Visual Perception Test- Fourth Edition (MVPT-4): Motor-Free Visual Perception Test- Fourth Edition (MVPT-4) was composed of five subtests: visual discrimination, visual closure, visual figure-ground, visual spatial and visual memory. All are modified from MVPT-4 of Brown and Peres (2015). MVPT-4 consists of 45 multiple choice items that included 9 items for each subtests. All items in the MVPT-4 were multiple choice forms with four alternative answers.

After that, item analysis, editing and selection procedure were performed using the pilot testing data. At this stage, p- value (the difficulty index in CTT) and point-biserial correlation (the discrimination index) for each item was calculated by using BILOG-MG software. Then, items had p-value between 0.2 and 0.7 and the value of point-biserial correlation greater than 0.3 were selected. The internal consistency (Cronbach's alpha coefficient) was 0.704. Therefore, this test can be used reliably.

Finally, 33 items of MVPT-4 test which are 7 items from visual discrimination, 8 items from visual closure, 9 items from visual figure-ground, 5 items from visual spatial and 4 items from visual memory were selected and utilized to conduct the final test administration.

Reading Achievement Test: In order to investigate and determine reading achievement of Grade 2 students, the researcher developed the reading achievement test based on Wechsler Individual Achievement Test-Third Edition (WIAT-III) (Wechsler, 2000). Reading achievement test was composed of four subtests: letter word identification, word attack, reading fluency and reading comprehension. This test was composed of 75 items based on Grade 2 Myanmar Textbook. Item analysis was done by using BILOG-MG software.

In conducting item analysis, items had p-value between 0.3 and 0.8 and the value of point-biserial correlation greater than 0.4 were selected. 35 items in the test were remained in the reading achievement test for conducting the final test administration. To confirm the reliability of the test, the internal consistency (Cronbach's alpha) was computed and it was 0.958. Therefore, the reading achievement test can be regarded as it is highly reliable.

Findings

Visual Perception Ability of Grade 2 Students

Descriptive statistics was used for minimum, maximum, mean and standard deviations of visual perception ability of Grade 2 students.

Table 1 Descriptive Statistics for Visual Perception Ability of Grade 2 Students

Scores	N	Minimum	Maximum	Mean	SD
Visual Perception Ability	826	3	31	19.92	4.6

In Table 1, the minimum score of the whole test was 3 and the maximum score was 31. Moreover, the mean and standard deviation of the whole sample were 19.92 and 4.6. It can be said that visual perception ability test for Grade 2 students was satisfactory.

Table 2 Results of Independent Sample *t* test for Visual Perception Ability by Gender

Variable	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Visual Perception Ability	Male	413	19.74	-1.128	824	.260	-.361
	Female	413	20.101				

According to the result of *t* test, there were no significant differences by gender in the visual perception ability. It can be interpreted that visual perception ability did not show any performance difference between males and females.

Table 3 ANOVA Results of Visual Perception Ability by SES Groups

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Visual Perception Ability	Between Groups	853.09	2	426.55	21.16***	0.000
	Within Groups	16588.47	823	20.16		
	Total	17441.57	825			

Note: ***The mean difference is significant at 0.001 level.

SES: Socio-economic status

According to the Table 3, it was found that there were significant differences among SES Groups concerning visual perception ability, ($F=21.16$, $p=0.000$). This can be found that visual perception ability of students from High SES Group differed among the three SES Groups. To be clearer, Post-Hoc Test was computed by using Tukey HSD method and students' visual perception ability was interpreted by using multiple comparison method.

Table 4 Results of Post Hoc Test for Visual Perception Ability by SES Group

Variable	(I)SES Group	(J) SES Group	Mean Difference (I-J)	<i>p</i>
Visual Perception Ability	Low SES Group	Middle SES Group	-1.014**	.023
		High SES Group	-2.555***	.000
	Middle SES Group	Low SES Group	1.014**	.023
		High SES Group	-1.541***	.000
	High SES Group	Low SES Group	2.555***	.000
		Middle SES Group	1.541***	.000

Note: ** The mean difference is significant at the 0.05level.

*** The mean difference is significant at the 0.001 level.

Based on the result of Post-Hoc Test, it can be concluded that visual perception ability of students from Low SES Group was significant different from students of both Middle and High SES Group at 0.01 level and at 0.001 level. And there were also significant difference among students of High SES Group and Low SES Group at 0.001 level. It was also found that students from High SES Group were the highest visual perception ability among the three SES Groups.

Table 5 ANOVA Results of Visual Perception Ability by School Type

Variable		Sum of Squares	df	Mean Square	F	p
Visual Perception Ability	Between Groups	473.306	2	236.653	11.478***	0.000
	Within Groups	16968.259	823	20.618		
	Total	17441.565	825			

Note: ***The mean difference is significant at 0.001 level.

It was found that there were significant differences among the school types concerning the visual perception ability at 0.001 level, ($F=11.478$, $p=0.001$). It could be found that visual perception ability of Grade 2 students differed among selected schools. To be clearer, Post-Hoc test was again conducted by Games-Howell method and the students' visual perception ability was interpreted by using multiple comparison method.

Table 6 Results of Post Hoc Test for Visual Perception Ability by School Type

Variable	(I) School Type	(J) School Type	Mean Difference (I-J)	p
Visual Perception Ability	Primary School	Middle School	-1.674***	.000
		High School	-1.454***	.001
	Middle School	Primary School	1.674***	.000
		High School	.220	.824
	High School	Primary School	1.454***	.001
		Middle School	-.220	.824

Note: ***The mean difference is significant at 0.001 level.

According to Table 6, it can be concluded that visual perception ability of students from Primary School was significant different from that of Middle School and High School Students at 0.001 level. The result can be said that students from Middle School and students from High School were better in visual perception ability than students from Primary School. Again, it can be said that students from Middle School had also higher visual perception ability than students from High School.

Reading Achievement of Grade 2 Students

Reading achievement of Grade 2 students was measured using the reading achievement test. In order to investigate reading achievement, statistical descriptive procedure was carried out by using the data obtained from reading achievement test.

Table 7 Descriptive Statistics for Reading Achievement of Grade 2 Students

Scores	N	Minimum	Maximum	Mean	SD
Reading Achievement	826	1	35	24.96	7.297

According to the table, the minimum and maximum scores of the test were 1 and 35. The mean and standard deviation of reading achievement test were 24.92 and 7.297. It can be said that the mean score of reading achievement test (24.92). Therefore, reading achievement test of Grade 2 students was satisfactory.

Table 8 Results of Independent Sample *t* test for Reading Achievement by Gender

Variable	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Reading Achievement	Male	413	24.18	-3.106**	824	.002	-1.569
	Female	413	25.75				

According to the result, there was significant difference in reading achievement by gender. This can be interpreted that female students were better in reading achievement than male students.

Table 9 ANOVA Results of Reading Achievement by SES Groups

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Reading Achievement	Between Groups	5615.46	2	2807.730	60.357***	.000
	Within Groups	38285.14	823	46.519		
	Total	43900.60	825			

Note: ***The mean difference is significant at 0.001 level.

According to the Table 9, it was found that there were significant differences among SES Groups concerning reading achievement, ($F=60.357$, $p=0.001$). This means that reading achievement of students from High SES Group differ among the three SES Groups. To be clearer, Post-Hoc Test was computed by using Games-Howell method and students' reading achievement was interpreted by using multiple comparison method.

Table 10 Results of Post Hoc Test for Reading Achievement by SES Group

Variable	(I)SES Group	(J) SES Group	Mean Difference (I-J)	<i>p</i>
Reading Achievement	Low SES Group	Middle SES Group	-3.923***	.000
		High SES Group	-6.620***	.000
	Middle SES Group	Low SES Group	3.923***	.000
		High SES Group	-2.696***	.000
	High SES Group	Low SES Group	6.620***	.000
		Middle SES Group	2.696***	.000

Note: *** The mean difference is significant at the 0.001level.

Based on the result of Post-Hoc Test, it can be concluded that reading achievement of students from Low SES Group was different from that of students of both Middle and High SES Group at 0.001 level. And there were also significant difference among High SES Group and Middle SES Group at 0.001 level. It was also found that students from High SES Group had the highest visual perception ability among the three SES Groups.

Table 11 ANOVA Results of Reading Achievement by School Type

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Reading Achievement	Between Groups	767.527	2	383.764	7.317***	.001
	Within Groups	43165.383	823	52.449		
	Total	43932.910	825			

Note: ***The mean difference is significant at 0.001 level.

According to Table 11, there were significant differences by their school types concerning the reading achievement at 0.001 level, ($F=7.317$, $p=0.001$). Again, Post-Hoc test was also conducted by Tukey HSD method to find out the difference which school is higher than that of others.

Table 12 Results of Post Hoc Test for Reading Achievement by School Type

Variable	(I) School Type	(J) School Type	Mean Difference (I-J)	p
Reading Achievement	Primary School	Middle School	1.153	.145
		High School	-1.262	.098
	Middle School	Primary School	-1.153	.145
		High School	-2.415***	.000
	High School	Primary School	1.262	.098
		Middle School	2.415***	.000

Note: ***The mean difference is significant at 0.001 level.

Based on the results of Post Hoc Test, it can be seen that reading achievement of High School students was significant difference from that of Middle School Students at 0.001 level. But reading achievement of students from Primary School was not significant different from both students from Middle and High Schools. The result reported that students from high school were in better reading achievement than students from other school types.

Table 13 Relationship between Visual Perception Ability and Reading Achievement

Variables	Correlation	Visual Perception Ability	Reading Achievement
Visual Perception Ability	Pearson Correlation	1	-
	Sig. (2-tailed)		-
	N	826	-
Reading Achievement	Pearson Correlation	.56**	1
	Sig. (2-tailed)	.000	
	N	826	826

Note: ** Correlation is significant at 0.01 level (2-tailed).

According to the result of Table 13, there was a statistically significant correlation in student visual perception ability and reading achievement ($r=.56$, $p<0.01$). Therefore, it can be interpreted that there was positive correlation between visual perception ability and reading achievement of Grade 2 students. This means that students with higher level of visual perception ability will possess greater achievement in reading.

Again, the regression analysis was conducted in order to investigate how well the visual perception ability predicts reading achievement. The results were shown in Table 14.

Table 14 Model Summary of Reading Ability

Model	R	R Square	Adjusted R Square	Standard Error of Estimation
1	.561 ^a	.314	.313	6.0384

a. Predictors: (Constant), Visual Perception Ability

It may be seen that a total of 31.3% of the variance in Grade 2 students' reading achievement was accounted for by visual perception ability. To investigate the effect of visual perception ability on reading achievement, simple linear regression was computed. The results were shown in Table 15.

Table 15 Linear Regression Analysis Summary of Visual Perception Ability in Reading Achievement

Variables	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	Sig.
	B	Std. Error	Beta		
(Constant)	7.246	.936		7.774	.000
Visual Perception Ability	.889	.046	.561	19.429	.000

Table 15 shows the intercept, unstandardized regression coefficient (B), and standardized regression coefficient β for model. By applying the results of multiple regression analysis presented in Table 4.18, the resultant model for subtests of visual perception ability can be defined as follows:

$$RA = 7.246 + .889 VPA$$

Note: RA = Reading Achievement, VPA= Visual Perception Ability

According to the above findings, it was found that visual perception ability could predict reading achievement significantly and statistically. Thus, visual perception ability (.889, $p < 0.001$) was the predictor of reading achievement. Therefore, if this result was overlooked, visual perception ability had the largest effect on reading achievement.

Conclusion and Discussion

Visual Perception Ability: For visual perception ability of Grade 2 students, descriptive statistics revealed that the mean and standard deviation of students' performance on visual perception ability test were 19.92 and 4.6. Therefore, students performed well in test of visual perception ability.

Gender Differences in Visual Perception Ability: According to the independent sample *t* test result, there were no significant differences in visual perception ability by gender. Thus the result can be interpreted that there was no difference in visual perception ability between male and female students. This may be possible that male and female at the stage of Grade 2 were equally interested to the images in the visual perception ability test. There is a clear demonstration of gender differences in touch, taste and smell, but there is not such a clear-cut demonstration for vision (Rookes and Willson, 2000). This result is inconsistent with the result of Khin Swe Latt (2016).

Socio-economic Status Differences in Visual Perception Ability According to ANOVA result, there were significant differences among students of three SES Groups in visual perception ability at 0.001 level ($F=21.16$, $p=0.000$). Based on the result of Post Hoc Test, it can be

concluded that Low SES Group was significantly different from both Middle and High SES Groups. It was also found that there was significant difference between Middle SES Group and High SES Group. It can be concluded that SES Groups had some effects on visual perception ability. High family income level may access more written, visual or technological materials in comparison to others. High-educated parents may provide more opportunities for their children because of their awareness of child development (Macintyre et. al., 2008).

School Type Differences in Visual Perception Ability: The result of One-way ANOVA showed that there were significant differences in comparing visual perception ability of students by school types at 0.001 level ($F=11.478$, $p=0.001$). From the result of Post Hoc Test, students attending in Primary School were lowest in visual perception ability among the school types. This may be possible because of classroom environment, classroom situation and learning materials.

Reading Achievement: Descriptive statistics for reading achievement of Grade 2 students was conducted. The minimum and maximum scores of the test were 1 and 35. The standard deviation of reading achievement test was 7.297. The mean score for reading achievement of Grade 2 students was 24.96. It can be said that reading achievement of Grade 2 students was satisfactory.

Gender Differences in Reading Achievement: According to the independent sample t test result, there were significant differences in Grade 2 students reading achievement by gender at 0.01 level. Based on the results of t test, there were significant gender differences in letter word identification, reading fluency and reading comprehension at 0.05 level and 0.001 level, but not in word attack. It was found that female students were better in reading achievement than male students. This may be possible that girls tend to do almost everything more thoroughly than boys. Males may have poorer intrinsic motivation to read than females (Marinak & Gambrell, 2010).

Socio-economic Differences in Reading Achievement: According to ANOVA result, there was significant difference among three SES Groups ($F=21.16$, $p=0.000$). Based on the results of Post-Hoc Test, students from Low SES Group was significant different from those of Middle and High SES Group. It can be concluded that SES Groups had some effects on reading achievement. Parents with adequate income can afford the learning facilities. Poor households have less access to learning materials including books, stimulating toys, computers and magazines. Socio-economic status affects school absence and language factors vital for early reading.

School Type Differences in Reading Achievement: ANOVA results showed that there was significant difference between Middle School and High School. It was interpreted that High School students were better performance in reading achievement than Middle School. This may be possible that High School have adequate number of teachers to guide well, teach effectively and support them for creating in reading letter and word. Parents with higher schooling placed greater value on education, provided more materials and school-related activities, provided help their children reading activities, provided more books to read.

Visual Perception Ability and Reading Achievement: By the result of Pearson Product-Moment Correlation, students' visual perception ability was positively and moderately correlated with their reading achievement because the correlation coefficient was statistically significant ($r=.56$, $p<0.01$). Therefore, it can be interpreted that the better the visual perception ability of students, the better the performance in reading achievement. And then, regression analysis was conducted in order to investigate how well the visual perception ability predicts reading achievement. The result revealed that 31.3% of the variance in reading achievement could be predicted from visual perception ability. So, improvement of students' visual perception ability is very important to promote their reading achievement.

Suggestions

Visual perception is the ability of the brain to interpret what the eyes see. Visual perception ability can have numerous advantages in scholastic tasks such as reading, spelling and mathematics (Schneck, 2010). Therefore, students need better performance in visual perception. To improve visual perception, students should match picture, cut some magazine pictures and paste them on cardboard, read picture books, play hidden picture games and complete partially drawn pictures.

To engage students to possess excellent visual perception ability and achievement in reading, the teachers and parents should provide as much of the visually stimulating classroom wall decorations as possible, especially near the child's desk, sorting laundry, crockery and cutlery for visual discrimination, practice to improve ability in and persistence with visual tasks.

The ability to read is fundamental to full participation in society. Early reading skills, therefore, affect not only graduation rates, but also economic prospects for students and communities. Throughout the KG - 5 - 4 - 3 school experience, children continue to build upon prior knowledge to develop grade-level academic skills and knowledge. So, students in early grades should have better performance in reading achievement. To improve students' reading achievement in Grade 2, students should spell loudly letters and words, practice spelling various words, read a lot both in and out of school to polish their basic reading skill and develop fluency, engage in a variety of reading activities every day.

Reading regularly at home provides children with the practice they need to become great readers. To help children decode and comprehend text in reading, classroom teachers and parents should create image to match letters and sounds, practice basic decoding skills to improve word-attack and word recognition skill, encourage children to use their prior knowledge, and provide them with appropriate background information if they lack context for understanding text, provide direct instruction for promoting decoding, fluency and comprehension, answer children's questions and monitor performance.

Acknowledgements

We would like to thank sincerely to the following individuals who gave us a hand directly or indirectly in our research. First and foremost, We would like to express respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) for giving us the permission to conduct this research study. We are delighted to pay our respectful gratitude to Dr. Khin Hnin Nwe (Professor/ Head of Department, Department of Educational Psychology, Sagaing University of Education) for her continuous support, invaluable suggestions, instructions, encouragement, guidance and inspiration for my study. We would like to offer special thanks to Dr. Moe Moe Naing (Professor, Department of Educational Psychology, Sagaing University of Education) for her expert comments, kindness and important suggestions. And then, we would like to acknowledge to all experts who assessed and modified the development of instruments used in this study for their indispensable judgments and effective suggestions. We are deeply grateful to all our teachers from Department of Educational Psychology for their special care and kind help.

References

- Barchers, S. (1998). *Teaching reading from process to practice*. USA: R. R. Donnelly & sons.
- Çayır, A., & Balcı, E. (2017). Bireyselleştirilmiş okuma programının disleksi riski olan bir ilköğretim öğrencisinin okuma becerileri üzerindeki etkisi. *Uluslararası Türkçe Edebiyat Kültür Eğitim Dergisi*, 6(1), 455-470.
- Clarke, K. (2015). Construct validity of the developmental test of visual-perception- Third edition (DTVP-3) in Western Australian primary school children. *Occupational Therapy in Health Care*, 30(3), 272-288.
- Dadzie, P. S. (2008) Reading for education: The role of libraries. *Ghana Library Journal*, 20(1), 114.
- Duru, H. (2008). *Gelişimsel görsel algı testi-2'nin 6 yaş çocukları için güvenirlik ve geçerlik ön çalışması* (Unpublished master's thesis). Marmara Üniversitesi, İstanbul, Turkey.

- Khin Swe Latt (2016). *A study on visual perceptual skill and mathematics achievement of Grade 6 students in Ngazon Township*. (Unpublished master's Thesis), Sagaing University of Education.
- Macintyre, S., Macdonald, L., & Ellaway, A. (2008). Do poorer people have poorer access to local resources by area deprivation in Glasgow, Scotland. *Social Science & Medicine*, 67(6),900-914. doi:10.1016/j.socscimed.2008.05.029
- Marinak, B., & Gambrell, L. (2010). Reading motivation: Exploring the elementary gender gap. *Literacy Research and Instruction*, 49, 129-141.
- Maxom, M. (2009). *Teaching English as a foreign language for dummies*. West Sussex: John Willey and Sons.
- Neriman, A., Aynur, B. A., Demet, G., Ozge, Z., & Tugba, A., (2011). A Study on the visual perception of children attending the first grade of elementary schools. *The International Journal of Learning*, 17(11), 215-225.
- Rookes, P., & Willson, J. (2000). *Perception: Theory, development and organization*. London: Routledge.
- Schwarz, C. M. (Ed.) (1988). *Chambers English Dictionary* (7th ed.). W & R Chambers Limited and Cambridge University Press: 595.
- Schneck, C. M. (2010). *Occupational therapy for children*. Missouri: Mosby Elsevier.
- Schacter, D. L. (2011). *Psychology* (2nd ed.). Worth Publishers.

SPIRITUAL INTELLIGENCE AND OPTIMISM OF TEACHERS FROM YAMETHIN DISTRICT

Htet Wut Yee¹, Myint Myint Po²

Abstract

The main purpose of this study was to investigate spiritual intelligence and optimism of teachers from Yamethin District. Descriptive survey method and quantitative research design were used in this study. The specific objectives were to explore the differences between spiritual intelligence and optimism of teachers by gender, age group, and work experience and to investigate the relationship between spiritual intelligence and optimism of teachers. A total of 941 (male = 427, female = 514) teachers were chosen from Yamethin District. As the instruments, the Spiritual Intelligence Self-Report Inventory (SISRI-24) (King, 2008) and Optimism/ Pessimism Instrument (OPI) (Dember, et. al., 1989) were used respectively. The Cronbach's alpha reliability coefficients of SISRI-24 and OPI were .842 and .872 respectively. According to the result, spiritual intelligence of male teachers was higher than that of female teachers. Furthermore, it was found that there was no significant difference in spiritual intelligence by age group. Moreover, it was found that there was a significant difference in spiritual intelligence by work experience. Teachers who had work experience 1-15 years were higher in spiritual intelligence than that of 16-25 years. According to result, optimism of male teachers was higher than that of female teachers. Then, ANOVA result showed that there was no significant difference in optimism by age group. Moreover, it was found that there was significant difference in optimism by work experience. Teachers who had work experience 26 years and above were higher in optimism than that of 16-25 years. Finally, there was statistically significant positive correlation in spiritual intelligence and optimism of teachers ($r = .445, p < .01$). Furthermore, the regression analysis result indicated that the spiritual intelligence could explain 20% of optimism.

Keywords: Spirituality, Spiritual Intelligence, Optimism

Introduction

The spiritual intelligence represents a different set of skills and abilities, each of which forms appear different in social and historical contexts. And it may be used to promote optimism. Optimism is one of human characteristics which for many years has been of central interest to psychology. Human beings today need to have a specific set of skills to survive in the competitive world as well as progress. This set of skills can be obtained through education. Modern education lays great emphasis on spiritual intelligence. Perhaps, this is precisely the cause why the learner seeks only to learn and study about the discovering own soul/ spirit. With this consideration of spirit, the development of spiritual intelligence is purely and surely to please the modern learner. It is, however, spiritual intelligence helps in the development of the natural man into the ideal man. Optimists anticipate positive outcomes; they enter a situation and expect positive results. If teachers' enter the classroom with optimistic beliefs, positive student results should ensue. Teachers' optimism encompasses teachers' positive emotion about themselves, students and parents, and instruction (Hoy, et. al., 2006).

Purpose of the Study

The main purpose of the study was to investigate spiritual intelligence and optimism of teachers from Yamethin District.

¹ Senior Teacher, B.E.H.S (Shweda), Yamethin Township, Mandalay Region

² Associate Professor, Department of Educational Psychology, Sagaing University of Education

Definition of Key Terms

- Spirituality** : Spirituality is a multidimensional construct and is defined as “a way of being and experiencing that comes about through awareness of a transcendent dimension (of life) and that is characterized by certain identifiable values in regard to self, others, nature, life, and whatever one considers to be the Ultimate” (Elkins et al., 1998, cited in Aye Chan Zaw, 2018).
- Spiritual Intelligence** : Spiritual Intelligence refers to a set of mental capacities which contribute to the awareness, integration, and adaptive application of the nonmaterial and transcendent aspects of one’s existence, leading to such outcomes as deep existential reflection, enhancement of meaning, recognition of a transcendent self, and mastery of spiritual states (King, 2008).
- Optimism** : Optimism as a generalized expectancy that good, as opposed to bad, outcomes will generally occur when confronted with problems across important life domains (Scheier & Carver, 1985).

Review of Related Literature

Many social scientists, psychologists, philosophers, thinkers, educators, educationists and educational concerns believe that intelligence is based on mind that is ability to develop mind and values mind, while they devalues spirit. Spiritual Intelligence is defined as a competency of an individual to contemplate the meaning of one’s existence, to reach the state of consciousness and able to transcend oneself through transcendental awareness. A person with high spiritual intelligence is keen in purifying himself or herself and determined to achieve the highest competency by the guidance of the spiritual resources which enable the individual to cope with obstacles/ problems in life. Human Excellence is a superior level of holistic (SQ + IQ+ EQ + PQ) achievement which is guided by one’s spiritual intelligence.

King (2008) and DeCicco (2009) defined spiritual intelligence as a set of mental capacities which contribute to the awareness, integration, and adaptive application of the nonmaterial and transcendent aspects of one’s existence, leading to such outcomes as deep existential reflection, enhancement of meaning, recognition of a transcendent self, and mastery of spiritual states. There are four main components of spiritual intelligence identified: (1) critical existential thinking, (2) personal meaning production, (3) transcendental awareness, and (4) conscious state expansion.

A four-factor model of spiritual intelligence is first proposed. Supportive evidence is reviewed for the capacities of critical existential thinking, personal meaning production, transcendental awareness, and conscious state expansion. Critical thinking: consideration of the purpose or existence of a person and the relationship to the universe as well as topics such as life, death, reality, truth, or justice. Discovery of Personal Meaning: the ability to create meaning and purpose of distinguishing from both mental and physical experience even in failure. Spiritual awareness: the ability to see larger picture that is more than physical and beyond the usual experience. Awareness of this spiritual existence can be seen in others and observed personally. Development of awareness level: the power to control and move into higher spiritual space through deep meditation, prayer, or reflection. (King, 2008).

The concepts of optimism and pessimism concern people’s expectations for the future. These concepts have ties to centuries of folk wisdom and also to a class of psychological theories of motivation, called expectancy-value theories. Expectancy-value model begins with the idea that behavior is aimed at attaining desired goals (Carver & Scheier, 1998). Unless there is a

valued goal, no action occurs (Scheier, Carver, & Bridges, 2001). When confronting a challenge, optimists should be confident and persistent, even if progress is difficult and slow. Pessimists should be more doubtful and hesitant. Adversity should even exaggerate this difference. Optimists believe adversity can be handled successfully, pessimists expect disaster (Carver et al., 1993; Stanton & Snider, 1993).

Methodology

Research Design and Method

In this study, descriptive survey method and quantitative approach were used. Teachers' spiritual intelligence was independent variable and optimism was dependent variable.

Participants of the Study

The total sample included 941 teachers (427 male teachers and 514 female teachers) that were selected randomly from Yamethin District

Instrumentation

In this study, two research questionnaires were used to examine spiritual intelligence and optimism of teachers. The first, Spiritual Intelligence Self-Report Inventory (SISRI-24) by King (2008) was adapted and used to examine spiritual intelligence of the teachers. The variable of spiritual intelligence was measured using 24 questions. The SISRI-24 included four subscales- critical existential thinking (CET), personal meaning production (PMP), transcendental awareness (TA), and conscious state expansion (CSE) that were analyzed as predictor variables and the number of items was 7, 5, 7 and 5 respectively. The items on a five-point likert scale were from 0 = strongly disagree to 4 = strongly agree for positive items and vice versa for negative items.

Secondly, to measure optimism of the teachers, Optimism/ Pessimism Instrument (OPI) created by Dember et. al., (1989) were used. It provides two scores, optimism and pessimism, this scale consisting of 18 items with 10 filler items for a total of 28 items on the scale. Items are rated on a scale of 1(Strongly agree) to 4 (Strongly disagree).

These questionnaires were adapted to Myanmar version. After adapting, the content validity and face validity for the questionnaires were conducted through expert reviews by 4 experts from the Department of Educational Psychology in Sagaing University of Education in first week of August, 2019. And then, appropriateness for the length of the items and the expressions were corrected. According to their suggestions, the instruments were modified.

Then, the pilot study was done with the sample of 119 teachers including 35 PAT teachers, 45 JAT teachers and 35 SAT teachers from three basic Education high schools ,BEHS (Ohmchaw), BEHS (Kywenapar) and BEHS (Kyaukmee) in Patheingyi Township. The whole scales of Spiritual Intelligence Self-Report Inventory (SISRI-24) and Optimism/ Pessimism Instrument (OPI) indicated satisfactory internal consistency (Cronbach's alpha reliability coefficients) with 0.812 and 0.832 respectively. Therefore, these two instruments can be considered as a reliable tool to be used for the purpose of this study.

Data Collection Procedure

Research instrument were developed under the guidance of supervisor and experts to get most correct and convenient data for my research. To validate the instruments, expert reviews were requested in order to be perfect data. After getting the permission from authoritarian, pilot study was made with the sample of 119 teachers from Patheingyi Township in September 16, 17, and 18, 2019. The aim of pilot study was to examine whether the translating simple and appropriate to Myanmar culture and teachers or not. The field test study was carried out with 941

teachers including 482 teachers (159 PATs, 161 JATs and 162 SATs) from Yamethin Township and 459 teachers (153 PATs, 153 JATs and 153 SATs) from Pyawbwe Township. The needed data were collected from thirty-three schools of Yamethin District in the first week and second week of October.

Data Analysis and Findings

Table 1 Descriptive Statistics for the Spiritual Intelligence of Teachers

Variable	N	Mean	Standard deviation	Minimum	Maximum
Spiritual Intelligence	941	86.28	8.778	47	119

Table 1 showed that the observed mean score of teachers' spiritual intelligence (86.28) was higher than the theoretical mean of teachers' spiritual intelligence (72). According to the results, it can be said that the teachers' spiritual intelligence was satisfactorily high.

Table 2 Mean Comparison for the Subscales of Teachers' Spiritual Intelligence

Subscales	No. of items	N	Minimum	Maximum	Mean	Mean %	SD
CET	7	941	10	34	24.77	70.77%	3.191
PMP	5	941	8	25	19.22	76.88%	2.309
TA	7	941	12	35	23.89	68.26%	3.228
CSE	5	941	10	25	18.38	73.52%	2.358

Note: *CET* = critical existential thinking, *PMP* = personal meaning production, *TA* = transcendental awareness, *CSE* = conscious state expansion.

In table 2, the mean % of spiritual intelligence's subscale (personal meaning production) was the highest (76.88%) and the mean % of spiritual intelligence's subscale (transcendental awareness) was the lowest (68.26%). It may be that most of the teachers in this study had abilities to construct personal meaning and purpose in all physical and mental experiences.

Table 3 Results of *t* test for Spiritual Intelligence of Teachers by Gender

Variable	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Spiritual Intelligence	Male	427	3.768***	939	.000	2.151
	Female	514				

Note: *** $p < 0.001$.

According to table 3, there was a significant difference for the spiritual intelligence of teachers between male and female. Thus, it can be interpreted that male had high spiritual intelligence than female.

Table 4 Results of *t* test for Spiritual Intelligence's Subscales of Teachers by Gender

Subscales	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
CET	Male	427	5.560***	939	.000	1.139
	Female	514				
TA	Male	427	3.663***	939	.000	.763
	Female	514				
CSE	Male	427	3.922***	939	.000	.600
	Female	514				

Note: *** $p < .001$, *CET* = critical existential thinking, *PMP* = personal meaning production, *TA* = transcendental awareness, *CSE* = conscious state expansion.

According to table 4, there were significant differences in critical existential thinking, transcendental awareness and conscious state expansion by gender at 0.001 level.

But, the findings revealed that there was no a significant difference for the spiritual intelligence of teachers by age group Therefore, it can be said that age group did not effect on teacher's spiritual intelligence.

Table 5 Post Hoc Analysis for Teachers' Spiritual Intelligence among Work Experience by Tukey (HSD)

(I)Teachers' Work Experience	(J)Teachers' Work Experience	Mean Difference(I-J)	<i>p</i>
1-15 years	16-25 years	2.326**	.003

Note: ** $p < 0.01$.

According to table 5, significant difference was found between Work Experience (1-15 years) and Work Experience (16-25 years) at 0.01 level. It can be said that teachers who had work experience 1-15 years were higher in spiritual intelligence than that of 16-25 years because the mean difference between them was 2.326**.

Table 6 Post Hoc Analysis for Spiritual Intelligence's Subscale (Personal Meaning Production) for Teachers among Work Experience by Games-Howell

(I)Teachers' Work Experience	(J)Teachers' Work Experience	Mean Difference(I-J)	<i>p</i>
1-15 years	16-25 years	.771***	.000
	26 years and above	1.090***	.000

Note: *** $p < 0.001$.

According to table 6, significant difference was found between work experience (1-15 years) and work experience (16-25 years) at 0.001 level. It can be said that teachers who had work experience 1-15 years were higher in spiritual intelligence than that of 16-25 years because the mean difference between them was .771***. Furthermore, significant difference was found between work experience (1-15 years) and work experience (25 years and above) at 0.001 level. It can be said that teachers who had work experience 1-15 years were higher in spiritual intelligence than that of 26 years and above because the mean difference between them was 1.090***. But, there was no significant difference between teachers who had work experience 16-25 years and that of 26 years and above.

Table 7 Post Hoc Analysis for Spiritual Intelligence's Subscale (Transcendental Awareness) for Teachers among Work Experience by Tukey (HSD)

(I)Teachers' Work Experience	(J)Teachers' Work Experience	Mean Difference(I-J)	<i>p</i>
1-15 years	16-25 years	.797**	.006
26 years and above	16-25 years	.803**	.005

Note: ** $p < 0.01$.

According to table 7, significant difference was found between work experience (1-15 years) and work experience (16-25 years) at 0.01 level. It can be said that teachers who had work experience 1-15 years were higher in spiritual intelligence than that of 16-25 years because the mean difference between them was .797**. Furthermore, significant difference was found between work experience (26 years and above) and work experience (16-25 years) at 0.01 level. It can be said that teachers who had work experience (26 years and above) were higher in spiritual intelligence than that of (15-25 years) because the mean difference between them

was .803**. But, there was no significant difference between teachers who had work experience 1-15 years and that of 26 years and above.

Then, the findings revealed that there was no significant difference for the subscale of spiritual intelligence, conscious state expansion by work experience.

Table 8 Descriptive Statistics for the Optimism of Teachers

Variable	N	Mean	Standard deviation	Minimum	Maximum
Optimism	941	87.09	7.998	67	112

Table 8 showed that the maximum score of teachers in optimism was 112 and mean score was 87.09. It can be said that the teachers' optimism was satisfactorily high.

Table 9 Results of *t* test for Optimism of Teachers by Gender

Variable	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Optimism	Male	427	5.708**	939	.003	2.940
	Female	514				

Note: ** $p < 0.01$.

According to table 9, there was significant difference for teachers' optimism between male and female at 0.01 level. Thus, it can be interpreted that male had optimism than female.

Next, the findings revealed that there was no significant difference for the optimism of teachers by age group.

Table 10 Results of Games-Howell Test for Teachers' Optimism by Work Experience

(I) Teachers' Work Experience	(J) Teachers' Work Experience	Mean Difference(I-J)	<i>p</i>
26 years and above	16-25 years	1.982**	.008

Note: ** $p < 0.01$.

According to table 10, significant difference was found between work experience (26 years and above) and work experience (16-25 years) at 0.01 level. It can be said that teachers who had work experience 26 years and above were higher in optimism than that of 16-25 years because the mean difference between them was 1.982**.

But, there was no significant difference between teachers who had work experience 1-15 years and that of 16-25 years. Moreover, there was no significant difference between teachers who had work experience 1-15 years and that of 26 years and above.

Table 11 The Correlation Matrix for Spiritual Intelligence and Optimism of Teachers

Variables	Spiritual Intelligence	Optimism
Spiritual Intelligence	-	.445**
Optimism	.445**	-

Note: ** $p < 0.01$.

According to the table 11, there was a significant positive relationship between the spiritual intelligence and optimism of teachers ($r(941) = .445$, $p < 0.01$) which indicated that as the teachers' spiritual intelligence increased, their optimism also increased accordingly.

Since there was a significant relationship between spiritual intelligence and optimism, correlation analysis was conducted to know how the spiritual intelligence with the optimism.

Table 12 Inter-Correlation Between Spiritual Intelligence and Optimism of Teachers

	Critical Existential Thinking (CET)	Personal Meaning Production (PMP)	Transcendental Awareness (TA)	Conscious State Expansion (CSE)	Optimism
Critical Existential Thinking (CET)	-	-	-	-	-
Personal Meaning Production (PMP)	.479**	-	-	-	-
Transcendental Awareness (TA)	.607**	.336**	-	-	-
Conscious State Expansion (CSE)	.554**	.359**	.475**	-	-
Optimism	.317**	.327**	.338**	.373**	-

Note: ** $p < 0.01$.

According to the table 12, there were positive relationships among spiritual intelligence's subscales and optimism of teachers at 0.01 level. Critical existential thinking (CET) demonstrated a significant positive relationship to Optimism. Thus, those who had higher in optimism also tend to be more critically contemplated meaning, purpose and other existential. And also transcendental awareness (TA) demonstrated a significant positive relationship to optimism. Thus, those who had high optimistic attitude also tend to be more recognized transcendent dimensions of self, of others and the physical world during the normal waking state of consciousness. Moreover, personal meaning production (PMP) demonstrated a significant positive relationship to optimism. Thus, those who had high optimism tend to be more constructed personal meaning and purpose in all physical and mental experiences, including the capacity to build and master a life purpose. Furthermore, conscious state expansion (CSC) demonstrated a significant positive relationship to optimism. Thus, who had high optimism appeared to be more entered a spiritual state of consciousness.

Table 13 Model Summary for Spiritual Intelligence and Optimism of Teachers

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.445	.198	.197	7.165

Spiritual intelligence contributed nearly 20% of variance to optimism. It can be said that the higher spiritual intelligence teachers have, the more they possess better optimism.

Table 14 Results of Linear Regression Analysis for Prediction of Teachers' Optimism

Model	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Std. Error	β		
(Constant) Optimism	52.078	2.309		22.556	.000
Spiritual Intelligence	.406	.027	.445	15.241	.000

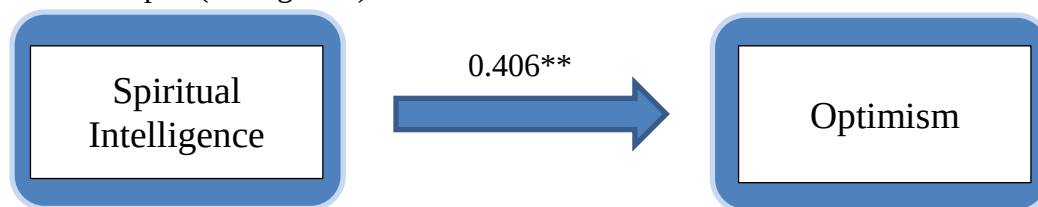
Note: ** $p < 0.001$.

According to the data of table14, the correlation between spiritual intelligence and optimism of teachers was .406. By applying regression analysis, the resultant model for optimism can be described in the following equation concerned with spiritual intelligence.

$$O = 52.078 + 0.406 SI$$

where, O =Optimism, SI = Spiritual Intelligence

Based on the result of linear regression analysis, the model of spiritual intelligence and optimism was developed (see figure 1).



***Correlation is significant at the 0.001 level (2-tailed).

Figure 1 Predictor Power of Teachers' Spiritual Intelligence on their Optimism

It can be interpreted that spiritual intelligence has been developed in teachers, their optimism will be developed.

Conclusion

The implementation of the intervention and educational workshops in relation to spiritual intelligence, optimism and psychological well-being as well as the context for understanding and applying spiritual intelligence in the home and school in order to promote mental health have been proposed. Teachers with low spiritual intelligence never want to be the leader and want to be the follower. It is not suit with the role of teachers because the teachers are the leader to their students and their nation. Therefore, the researcher advises some ways to embrace spiritual intelligence and optimism in the teachers' busy and often cluttered everyday life in the following.

- **Mediation:** When you are silent and peaceful, you can hear the gentle rhythm of your soul. Mediation helps to develop your personality inside out.
- **Prayer or meditation:** Prayer or meditation is an extremely effective way for you to connect to the spiritual realm.
- **Gratitude:** Gratitude opens a floodgate of inner peace, and thereby spiritual awareness. Make a list of things you are grateful for. All these will open you up, and bring you closer to experience peace and awakening. When you are grateful for everything from your food to your life, you are acknowledging the presence of a universal energy and welcoming positivity into your lives.
- **Compassion:** Compassion and empathy are true spiritual bridges. When you feel for another and connect with them, you are indeed connecting to the spiritual; realm.
- **Kindness and Helpfulness.** Being kind and extending a helping hand to another in need is a very spiritual act.

Thus, as this research study emphasized both the spiritual intelligence and optimism of the teachers in Basic Education, it can be valuable to measure psychological construct and personal quality of teachers which can offer some contribution to Educational Psychology and especially to Education of Myanmar.

Acknowledgements

I would like to express my respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) for their encouragements, administrative supports, official permissions to conduct this study. I would like to express indebtedness to Headmasters and Headmistresses from selected schools from Yamethin District for their permission to conduct this study.

References

- Abraham, W. T. (2007). Dispositional optimism and pessimism: stability, change, and adaptive recovery following life event experiences. *Retrospective Theses and Dissertations*. Retrieved from <https://lib.dr.iastate.edu/rtd/15625>.
- Amram, J.Y. (2009). *The Contribution of Emotional and Spiritual Intelligences to Effective Business Leadership*. Dissertation retrieved from <http://yosiamram.net/papers/>.
- Czerw, A. (2015). Many faces of optimism: Proposal of five profiles of optimistic attitudes in research on Polish sample. *University of Social Sciences and Humanities, Faculty in Poznan*, 46(2), 239-245. doi:10.1515/ppb-2015-0032.
- Emmons, R. A. (2000). Is Spirituality an Intelligence? Motivation, Cognition, and the Psychology of Ultimate Concern. *International Journal for the Psychology of Religion*, 10(1), 3-26. doi.org/10.1207/S15327582IJPR1001_2
- Gardner, H. (2000). A Case Against Spiritual Intelligence. *International Journal for the Psychology of Religion*, 10(1), 27-34. doi.org/10.1207/S15327582IJPR1001_3
- Johnson, A.C. (2018). An examination of optimism between gender, race, and school classification of millennial students- an exploratory study. *University Honors Program Theses*. 357. Retrieved from <https://digitalcommons.georgiasouthern.edu/honors-theses/357>.
- King, D.B., DeCicco, T.L. (2009). A viable model and self-report measure of spiritual intelligence. *International Journal of Transpersonal Studies*, 28 (1), 68-85.
- Mayer, J.D. (2000). Spiritual intelligence or spiritual consciousness? *International Journal for the Psychology of Religion*, 10(1), 47-56.
- Scheier, M. F. & Carver, C. S. (1985). Optimism, coping, and health. *Assessment and Implications of Generalized Outcome Expectancies*, 219-247.
- Tiway, J. (2013). Education and Human Development. *Journal of Social Research*, 1(2), 132.
- Wigglesworth, C. (2012). *SQ21: The Twenty-One Skills of Spiritual Intelligence*. New York: Select Books.
- Zohar, D. (2000). *SQ: Connecting with Our Spiritual Intelligence* (New edition.). London: Bloomsbury. 5(5), 1-8. Retrieved from http://spirituality.ucla.edu/docs/newsletters/5/Issue_5/Zohar_Final.pdf

SENSE OF CLASSROOM COMMUNITY AND ADJUSTMENT OF UNIVERSITY STUDENTS

Aye Mya Nandar Kyi¹, Honey Ko Ko²

Abstract

The purpose of this study was to investigate the sense of classroom community and adjustment of university students. The research also aimed to explore the sense of classroom community and adjustment of university students by gender and university. The quantitative research design and survey method were used in this study. A total of 967 university students (481 males and 486 females) were selected from four universities in Monywa District. The Classroom Community Scale (CCS) developed by Rovai (2002) consisting of 20 items and two dimensions (Cronbach's $\alpha=.802$) was used to measure the sense of classroom community of university students, and the University Adjustment Scale (UAS) developed by Ali (2003) consisting of 36 items and four dimensions (Cronbach's $\alpha=.746$) was used to measure the adjustment of university students. The data were analysed using descriptive statistics, independent samples *t* test, one-way ANOVA, Pearson product-moment correlation, and multiple regression. According to the results, there were significant differences in the sense of classroom community and adjustment of university students by gender and university. According to the Pearson product-moment correlation result, there was a moderate positive relationship ($r=.608$) between the sense of classroom community and adjustment of university students. The results of multiple regression analysis revealed that the sense of classroom community could predict 36.8% of the variance in the adjustment of university students. Therefore, university students who have a strong sense of classroom community may experience better university adjustment.

Keywords: Sense of community, Sense of Classroom Community, University Adjustment

Introduction

Importance of the Study

Academic demands increase, and new social relations need to be developed by the students when they join higher-level institutions (Makara & Madjar, 2015). Adjustment is the main predictor of students' success in university life because it is the level that they can face the problems resulting from fulfilling hidden academic, social, and emotional needs (Al-khatib, Awamleh, & Samawi, 2012). Adjustment to the educational environment can predict educational achievements. Low academic achievement and performance result from poor adjustment (Yamamoto & Holloway, 2010).

If students feel a sense of community in their learning environment, this may predict adjustment. According to Rovai (2002a), the emotional connectedness from a sense of community may encourage the students to complete a program and learn more. Yuen (2003) also stated that learning communities usually helped individual learners accomplish what they could not do on their own by focusing on collective knowledge building.

The classroom is a central community for students as they work together in that learning environment with teachers and fellow students to set expectations, goals, and traditions. A classroom with a strong community is where learners are connected, communicate with each other, share values, and help each other (Ritter et al., 2010, cited in Kaur, 2016). Students in a classroom community do not feel alone and collectively help each other overcome the difficulties since they integrate with colleagues into the academic context. Consequently, their adjustment may be better.

¹ Senior Assistant Teacher, No. (5) Basic Education High School, Pakokku

² Lecturer, Department of Educational Psychology, Sagaing University of Education

The sense of classroom community and adjustment play a vital role in the learning process of university students. Examining these two variables together may provide a thorough understanding of the importance of classroom community in shaping students' adjustment to university and the suggestions to improve student outcomes. This knowledge may lead to implementing the university policies that facilitate the establishment of developmentally responsive communities and reduce the students who experience low adjustment to university.

Aim of the Study

The main objective of the study was to investigate the sense of classroom community and adjustment of university students. The specific aims were as follows:

- (i) To observe the sense of classroom community of university students by gender and university
- (ii) To explore the adjustment of university students in terms of gender and university
- (iii) To evaluate whether there was a relationship between the sense of classroom community and adjustment of university students.

Scope of the Study

The study focused on 967 undergraduate students sampled from the four universities in Monywa District: Monywa University, Technological University (Monywa), University of Computer Studies, Monywa, and University of Economics (Monywa) with the stratified random sampling technique. The survey was conducted within the academic year 2019-2020.

Definitions of the Key Terms

Sense of community: Sense of community refers to a “feeling of connectedness” and a “sense of belonging” to others in the environment (Rovai, 2002b).

Sense of classroom community: Sense of classroom community is a feeling that members have of belonging, that members matter to one another and the group, that members have duties and obligations to each other and the school, and that members possess shared expectations to meet their educational needs through their commitment to shared learning goals (Rovai, 2001).

University adjustment: University adjustment is university students' ability to comprehend the material successfully, start friendly relations with colleagues and teachers, and solve psychological and social problems (Al-Khatib, Awamleh, & Samawi, 2012).

Review of Related Literature

Rovai's (2002) Sense of Classroom Community Theory

According to Rovai and Lucking (2000; cited in Rovai, 2001), the sense of classroom community comprises four components: spirit, trust, interaction, and learning. Spirit is a feeling of being recognized as a member and the feelings of friendship, cohesion, and satisfaction among learners. Trust is the feeling that the community can be relied on for its feedback. Interaction is the feeling of obtaining closeness and mutual benefit resulting from interacting with community members. Learning is the learners' belief that the classroom community enhances knowledge acquisition and learning and satisfies the learners' educational needs. In 2002, Rovai compressed the sense of classroom community into two components: feelings of connectedness among community members that were the total of the first three components and commonality of learning expectations and goals, the initial learning component. (Rovai 2002b). This study applied the revised theory as the theoretical framework for the sense of classroom community owing to its many merits: modernity, simplicity, and compactness.

University Adjustment

According to Ali (2003), university adjustment is a multifaceted concept consisting of four dimensions: academic adjustment, social adjustment, emotional adjustment, and commitment to achieve goals. Academic adjustment of university students is the degree of students' adaptation to the academic tasks in their educational life (Rienties et al., 2011). It includes interaction with teachers and fellow students about academic duties. Social adjustment of university students is the degree of students' adaptation to social problems in their educational life (Rienties et al., 2011). According to Sommer (2013), it includes the interaction with fellow students and teachers on a social level, the formation of new friendships, and the level of social involvement in university activities. Emotional adjustment of university students is the degree of students' adaptation to the personal and emotional problems in their educational life (Rienties et al., 2011). Commitment to achieve goals refers to the level of students' willingness to obtain a degree (Wider et al., 2017).

Tinto's (1993) Student Integration Theory

According to Tinto's (1993) Student Integration Theory, students' social and academic integration connects to their commitment to the institution and external factors. Students bring a set of background qualities to university when they access it. These qualities include individual attitudes, pre-entry attributes, and family background. When these three background qualities consolidate, they lead to students' initial goals and institutional commitments. The initial goals and institutional commitments influence students' involvement in the universities' academic and social activities. These initial goals and institutional commitments also impact students' later goals and institutional commitments. After participating in the university's academic and social systems to a certain extent, students rethink their commitments, objectives, and intentions from and to the institution and recognize the external commitments. These commitments and levels of integration cause students to remain at or leave the university. (Tinto, 1993; cited in Chrysikos, Ahmed, & Ward, 2017)

Methodology

Research Design and Method

The descriptive research design and quantitative survey method were used in this study.

Participants of the Study

A total of 967 university students (481 males and 486 females) were selected from four universities in Monywa District using a stratified random sampling technique.

Instrumentation

The Classroom Community Scale (CCS) developed by Rovai (2002b) was applied to assess the university students' sense of classroom community. The CCS included 20 items and two dimensions: 10 items for connectedness and 10 items for learning. The University Adjustment Scale (UAS) developed by Ali (2003) was used to investigate the university students' adjustment to their university. The UAS consisted of 36 items and four dimensions: 14 items for academic adjustment, 10 items for social adjustment, 6 items for emotional adjustment, and 6 items for commitment to achieve goals. According to the reliability analysis, the internal consistency reliability coefficients were .802 for the sense of classroom community and .746 for university adjustment.

Data Analysis and Findings

Descriptive Statistics for Sense of Classroom Community and Its Two Dimensions of University Students

Descriptive statistics were conducted to analyse the data for the sense of classroom community of university students. The results were described in Table 1.

Table 1 Descriptive Statistics for Sense of Classroom Community of University Students

Variable	N	No. of Items	Minimum	Maximum	Mean	SD
Sense of Classroom Community	967	20	38	85	58.25	6.619

As shown in Table 1, the actual mean score for the sense of classroom community was 58.25. The theoretical mean score for the sense of classroom community is 50. Therefore, it could be said that university students from four selected universities had a satisfactory sense of classroom community.

Table 2 Descriptive Statistics for Dimensions of Sense of Classroom Community of University Students

Variable	N	No. of Items	Minimum	Maximum	Mean	SD
Connectedness	967	10	15	40	29.17	3.583
Learning	967	10	17	56	29.07	3.757

According to Table 2, it could be interpreted that university students from four selected universities are better in connectedness than in learning within their classroom community.

Comparison of Sense of Classroom Community and Its Two Dimensions of University Students by Gender

The independent samples *t* test was conducted to investigate the sense of classroom community of university students by gender. The results were shown in Table 3.

Table 3 Mean Comparison and the Result of Independent Samples *t* Test for Sense of Classroom Community of University Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Sense of Classroom Community	Male	481	57.41	6.993	-3.951***	965	.000	-1.671
	Female	486	59.08	6.121				

Note: ***The mean difference is significant at the .001 level.

According to Table 3, it could be concluded that female university students have a more satisfactory sense of classroom community than male university students.

The independent samples *t* test was also conducted to explore the dimensions of sense of classroom community of university students by gender. The results were shown in Table 4.

Table 4 Mean Comparison and the Results of Independent Samples *t* Test for Dimensions of Sense of Classroom Community of University Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Connectedness	Male	481	29.02	3.907	-1.347	965	.178	-.311
	Female	486	29.33	3.226				
Learning	Male	481	28.39	3.772	-5.720***	965	.000	-1.360
	Female	486	29.75	3.620				

Note: ***The mean difference is significant at the .001 level.

According to Table 4, it could be interpreted that female university students do more learning in the classroom community than male university students.

Comparison of Sense of Classroom Community and Its Two Dimensions of University Students by University

One-way analysis of variance (ANOVA) was conducted to investigate the sense of classroom community of university students by university. The results were shown in Table 5.

Table 5 Results of ANOVA for Sense of Classroom Community of University Students by University

Variable		Sum of Squares	df	Mean Square	F	p
Sense of Classroom Community	Between Groups	1040.365	3	346.788	8.090***	.000
	Within Groups	41280.549	963	42.867		
	Total	42320.914	966			

Note: ***The mean difference is significant at the .001 level.

According to Table 5, there was a significant difference in sense of classroom community of university students by the university. To observe specifically, the Post Hoc Test was conducted by the Tukey HSD method. The results were shown in Table 6.

Table 6 Result of Tukey HSD Test for Sense of Classroom Community of University Students by University

Variable	(I) university	(J) university	Mean Difference (I-J)	Std. Error	p
Sense of Classroom Community	University 3	University 1	-2.157**	.631	.004
		University 2	-3.059***	.638	.000
		University 4	-2.238**	.616	.002

Note: ***The mean difference is significant at the .001 level.

** The mean difference is significant at the .01 level.

According to Table 6, it could be concluded that students from universities 1, 2, and 4 had a higher sense of classroom community than those from university 3.

Then, one-way analysis of variance (ANOVA) was also conducted to investigate the dimensions of sense of classroom community of university students by university.

Table 7 Results of ANOVA for Dimensions of Sense of Classroom Community of University Students by University

Variable		Sum of Squares	df	Mean Square	F	p
Connectedness	Between Groups	419.955	3	139.985	11.252***	.000
	Within Groups	11980.205	963	12.441		
	Total	12400.159	966			
Learning	Between Groups	173.335	3	57.778	4.134**	.006
	Within Groups	13459.597	963	13.977		
	Total	13632.933	966			

Note: ***The mean difference is significant at the .001 level.

** The mean difference is significant at the .01 level.

According to Table 7, there were also significant differences in both connectedness and learning dimensions by the university. To obtain more detailed information, the Post Hoc Test was carried out by the Tukey HSD method. The results were described in Table 8.

Table 8 Results of Tukey HSD Test for Dimensions of Sense of Classroom Community of University Students by University

Variable	(I) university	(J) university	Mean Difference (I-J)	Std. Error	p
Connectedness	University 2	University 4	.877*	.309	.024
	University 3	University 1	-1.349***	.340	.000
		University 2	-1.970***	.344	.000
		University 4	-1.093**	.332	.006
Learning	University 3	University 2	-1.089*	.364	.015
		University 4	-1.145**	.352	.006

Note: ***The mean difference is significant at the .001 level.

** The mean difference is significant at the .01 level.

* The mean difference is significant at the .05 level.

According to Table 8, it could be concluded that students from university 2 had higher connectedness in the classroom community than those from university 4. Students from universities 1, 2, and 4 had higher connectedness in the classroom community than those from university 3. Students from universities 2 and 4 had greater learning in the classroom community than those from university 3.

Descriptive Statistics for Adjustment and Its Four Dimensions of University Students

Descriptive statistics were also conducted to analyses the data for adjustment of university students. The results were described in Table 9.

Table 9 Descriptive Statistics for Adjustment of University Students

Variable	N	No. of Items	Minimum	Maximum	Mean	SD
University Adjustment	967	36	66	188	101.55	9.646

According to Table 9, the actual mean score for the whole scale was 101.55. The theoretical mean score for university adjustment is 90. Therefore, it could be said that university students from four selected universities had good university adjustment.

Table 10 Descriptive Statistics for Dimensions of Adjustment of University Students

Variable	N	No. of Items	Minimum	Maximum	Mean	Mean %	SD
Academic Adjustment	967	14	20	79	39.16	69.93	4.696
Social Adjustment	967	10	15	108	27.45	68.63	3.746
Emotional Adjustment	967	6	7	39	16.68	69.5	2.323
Commitment to Achieve Goals	967	6	7	24	18.25	76.04	2.320

According to Table 10, it could be interpreted that university students from the four selected universities had a high commitment to achieve goals and were better in academic adjustment than in social adjustment and emotional adjustment.

Comparison of Adjustment and Its Four Dimensions of University Students by Gender

To investigate the adjustment of university students by gender, the independent samples *t* test was conducted. The results were shown in Table 11.

Table 11 Mean Comparison and the Result of Independent Samples *t* Test for Adjustment of University Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
University Adjustment	Male	481	100.26	9.965	-4.164***	965	.000	-2.563
	Female	486	102.82	9.153				

Note: ***The mean difference is significant at the .001 level.

According to Table 11, it could be concluded that female university students had better university adjustment than male university students.

Then, to investigate the dimensions of adjustment of university students by gender, the independent samples *t* test was also conducted. The results were shown in Table 12.

Table 12 Mean Comparison and the Results of Independent Samples *t* Test for Dimensions of Adjustment of University Students by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Academic Adjustment	Male	481	38.39	4.648	-5.192***	965	.000	-1.547
	Female	486	39.93	4.620				
Social Adjustment	Male	481	27.12	2.991	-2.702**	965	.007	-.649
	Female	486	27.77	4.346				
Emotional Adjustment	Male	481	16.63	2.600	-.630	965	.529	-.094
	Female	486	16.73	2.013				
Commitment to Achieve Goals	Male	481	18.11	2.494	-1.827	965	.068	-.272
	Female	486	18.39	2.128				

Note: ***The mean difference is significant at the .001 level.

**The mean difference is significant at the .01 level.

According to Table 12, it could be concluded that female university students had better academic adjustment and social adjustment than male university students.

Comparison of Adjustment and Its Four Dimensions of University Students by University

One-way analysis of variance (ANOVA) was conducted to investigate the adjustment of university students by university. The results were shown in Table 13.

Table 13 Result of ANOVA for Adjustment of University Students by University

Variable		Sum of Squares	<i>df</i>	Mean Squares	<i>F</i>	<i>p</i>
University Adjustment	Between Groups	3099.205	3	1033.068	11.463***	.000
	Within Groups	86790.497	963	90.125		
	Total	89889.702	966			

Note: ***The mean difference is significant at the .001 level.

According to Table 13, there was a significant difference in the adjustment of university students by the university. To obtain more detailed information, the Post Hoc Test was conducted by the Tukey HSD method. The results were described in Table 14.

Table 14 Result of Tukey HSD Test for Adjustment of University Students by University

Variable	(I) university	(J) university	Mean Difference (I-J)	Std. Error	p
University Adjustment	University 3	University 1	-4.971***	.915	.000
		University 2	-3.725***	.925	.000
		University 4	-4.433***	.893	.000

Note: ***The mean difference is significant at the .001 level.

According to Table 14, it could be concluded that students from universities 1, 2, and 4 had better university adjustment than those from university 3.

Then, one-way analysis of variance (ANOVA) was also conducted to observe the dimensions of adjustment of university students by university. The results were shown in Table 15.

Table 15 Result of ANOVA for Dimensions of Adjustment of University Students by University

Variable		Sum of Squares	df	Mean Squares	F	p
Academic Adjustment	Between Groups	651.027	3	217.009	10.121***	.000
	Within Groups	20647.830	963	21.441		
	Total	21298.856	966			
Social Adjustment	Between Groups	134.397	3	44.799	3.214*	.022
	Within Groups	13421.019	963	13.937		
	Total	13555.417	966			
Emotional Adjustment	Between Groups	78.263	3	26.088	4.895**	.002
	Within Groups	5132.358	963	5.330		
	Total	5210.620	966			
Commitment to Achieve Goals	Between Groups	176.961	3	58.987	11.309***	.000
	Within Groups	5022.975	963	5.216		
	Total	5199.936	966			

Note: ***The mean difference is significant at the .001 level.

** The mean difference is significant at the .01 level.

* The mean difference is significant at the .05 level.

According to Table 15, there were significant differences in all dimensions of adjustment of university students by the university. To observe specifically, the Post Hoc Test was conducted by the Tukey HSD method. The results were described in Table 16.

Table 16 Result of Tukey HSD Test for Dimensions of Adjustment of University Students by University

Variable	(I) university	(J) university	Mean Difference (I-J)	Std. Error	p
Academic Adjustment	University 3	University 1	-2.310 ^{***}	.446	.000
		University 2	-1.443 ^{**}	.451	.008
		University 4	-1.978 ^{***}	.436	.000
Social Adjustment	University 2	University 3	1.037 [*]	.364	.023
Emotional Adjustment	University 3	University 1	-.574 [*]	.222	.049
		University 2	-.802 ^{**}	.225	.002
		University 4	-.698 ^{**}	.217	.007
Commitment to Achieve Goals	University 1	University 2	.720 ^{**}	.205	.003
		University 3	1.163 ^{***}	.220	.000
	University 3	University 4	-.930 ^{***}	.215	.000

Note: ***The mean difference is significant at the .001 level.

** The mean difference is significant at the .01 level.

* The mean difference is significant at the .05 level.

According to Table 16, it could be concluded that students from universities 1, 2, and 4 had better academic adjustment than those from university 3. Students from university 2 had better social adjustment than those from university 3. Students from universities 1, 2, and 4 had better emotional adjustment than those from university 3. Students from university 1 had higher commitment to achieve goals than those from universities 2 and 3. Students from university 4 also had higher commitment to achieve goals than those from university 3.

Relationship between Sense of Classroom Community and Adjustment of University Students

To evaluate whether there was a significant relationship between sense of classroom community and adjustment of university students, the Pearson product-moment correlation was conducted. The result of the analysis was shown in Table 17.

Table 17 Relationship between Sense of Classroom Community and Adjustment of University Students

Variables	Sense of Classroom Community	University Adjustment
Sense of Classroom Community	1	.608 ^{***}
University Adjustment	.608 ^{***}	1

Note: ***Correlation is significant at the .001 level (2-tailed).

Table 17 showed that there was a moderate positive correlation between sense of classroom community and university adjustment ($r=.608$, $p<.001$). Therefore, it could be concluded that the higher the sense of classroom community of university students was, the better their university adjustment was.

Inter-correlations between Dimensions of Sense of Classroom Community and Adjustment of University Students

In order to explore the inter-relationship between dimensions of sense of classroom community and adjustment of university students, the Pearson product-moment correlation was carried out. The results of the analysis were shown in Table 18.

Table 18 Inter-correlations for Dimensions of Sense of Classroom Community and Adjustment of University Students

Variables	Connectedness	Learning	University Adjustment
Connectedness	1		
Learning	.626**	1	
University Adjustment	.540***	.555***	1

Note: ***Correlation is significant at the .001 level (2-tailed).

**Correlation is significant at the .01 level (2-tailed).

Table 18 indicated that both the connectedness and the learning dimensions were positively correlated with university adjustment. Thus, it could be considered that university students with high connectedness with their colleagues as well as their teachers and good learning in their classroom community might be better in their university adjustment.

Impact of Sense of Classroom Community on University Adjustment

As part of the data exploration, multiple regression analysis was utilized to determine whether the predictor variable and its dimensions explained the variance in the dependent variable.

Table 19 Multiple Regression Analysis of the Dimensions of Sense of Classroom Community and Adjustment of University Students

Variables	Unstandardized Coefficients (B)	Standardized Coefficients (β)	R	R ²	Adjusted R ²	t
Constant	50.016		.608	.369	.368	22.844***
Connectedness	.853	.317				9.652***
Learning	.917	.357				10.844***

According to Table 19, the produced multiple regression equation for the relationship between connectedness, learning, and university adjustment was:

$$\text{University Adjustment} = 50.016 + .853 \text{ Connectedness} + .917 \text{ Learning}$$

The value of the adjusted R square was .368. This meant that 36.8% of the variance in the adjustment of university students could be predicted from the sense of classroom community which was the combination of connectedness and learning. Therefore, it could be interpreted that the higher the connectedness and learning in the classroom community were, the better the adjustment of university students was.

Conclusion, Discussion, and Suggestions

University life is challenging and can be a very stressful period for individuals growing from adolescence to adulthood. To overcome several challenges and difficulties, students need to adjust successfully to the university setting. On the other hand, the classroom community has a pivotal role in students' success in university life. The lack of community in the learning environment could result in students' isolation, frustration, boredom, overload, and low

achievement (Rovai et al., 2005; cited in Young & Bruce, 2011). Therefore, the current study investigated the sense of classroom community and adjustment of university students together.

Gender Differences in Sense of Classroom Community: It was found that female university students were higher in the learning dimension than male university students. This finding may be because females are more motivated to learn in the classroom community due to their greater ambitions and more expectations about the university. It was also found that female university students had a more satisfactory overall sense of classroom community than male university students. This finding is consistent with Shea et al.'s (2005). This may be as many female university students emphasize relationships and prefer to learn in an environment where cooperation is valued more than the competition. To improve the sense of classroom community of male university students, teachers should try to encourage them to emphasize relationships in the classroom and have the enthusiasm to learn in a collaborative learning environment.

Differences in Sense of Classroom Community by University: It was found that there were significant differences in university students' overall sense of classroom community and its two dimensions by the university. This finding is congruent with Young and Bruce's (2011). These may be due to different universities' different nature of courses and styles of instruction. As the kind of university differs, the nature of subjects and purposes of the teaching-learning process differ. Thus, teaching methods may not be identical among different universities. The traditional teaching method delivering the only lecture may not facilitate students' sense of classroom community. Teaching methods and classroom activities that encourage students to work collaboratively may make students acknowledge the power of the community themselves, set shared group goals, and actively participate in accomplishing these group goals. However, every group task is not good. According to Exter et al. (2009, cited in Young & Bruce, 2011), group tasks that focus on knowledge acquisition may create feelings of anxiety and conflict rather than the feeling of a connected learning community. Therefore, teachers must expect students' overall well-being. To improve the students' sense of classroom community, teachers should apply teaching methods that focus on learning goals and support students' well-being.

Gender Differences in Adjustment of University Students: It was found that female university students had higher academic adjustment and social adjustment than male university students. These findings are congruent with Soe Pyae Sone Mon's (2019). Female university students also had better overall university adjustment than male university students. This finding is consistent with Soe Pyae Sone Mon's (2019). These may be due to the following facts. According to Mello (2008), females invest more time to study and are more dedicated to accomplishing their course than male students. Females seek more social support from their surroundings than males because they have to suffer from more anxiety, depression, and stress than males (Abdullah et al., 2009). According to Day and Livingstone (2003), females' seeking social support in the struggle of stress helps them adjust more than males. Therefore, female university students have better university adjustment than male students. To improve the adjustment of male university students, teachers should encourage them to set themselves aims regarding their education, devote more time in studying to achieve these aims, and seek social support from their teachers and classmates when they undergo stressors.

Differences in Adjustment of University Students by University: It was found that there were significant differences in university students' overall adjustment and all dimensions by the university. These may be due to the following facts. The multifaceted demands, further career opportunities after university and the interactions among teachers and fellow students may differ since the kind of university differs. Thus, teachers should build rapport within the classroom to help the individual students pass the various demands and difficulties successfully. Teachers should also exhibit many different excellent opportunities to improve students' desire to adjust to

their respective universities. In this way, teachers can develop the adjustment of university students in multifaceted dimensions.

In conclusion, the higher the university students' sense of classroom community is, the better their university adjustment is. This research may provide suggestions to improve and maintain university students' sense of classroom community and adjustment that facilitate their learning.

Acknowledgements

We are immensely grateful to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) for their permission to conduct this study. We would also like to express our deep sense of gratitude to Dr. Khin Hnin Nwe (Professor and Head of Department, Department of Educational Psychology, Sagaing University of Education) and Dr. Moe Moe Naing (Professor, Department of Educational Psychology, Sagaing University of Education) for their invaluable guidance, encouragement, and suggestions throughout the study. Finally, we would like to express our sincere thanks to all the participants from four universities in Monywa District for their enthusiastic participation in our research.

References

- Abdullah, M.C., Elias, H., Mahyuddin, R. & Uli, J. (2009). Adjustment among first-year students in a Malaysian University. *European Journal of Social Sciences*, 8(3), 496-505. Retrieved from http://www.europeanjournalofsocialsciences.com/ejss_issues.html
- Ali Andulsalam (2003). Manual of applying the ATSC scale. *International Journal of Social Science and Economic Research*, 3(4), 1619. Retrieved August 3, 2019, from www.ijsser.org
- Al-Khatib, B. A., Awamleh, S. H., & Samawi, F. S. (2012). Student's adjustment to college life at Albalqa Applied University. *American International Journal of Contemporary Research*, 2(11), 7-16.
- Chrysikos, A., Ahmed, E. & Ward, R. (2017). Analysis of Tinto's student integration theory in first-year undergraduate computing students of a UK higher education institution. *International Journal of Comparative Education and Development*, 19(2/3), 97-121. Retrieved from <http://doi.org/10.1108/IJCED-10-2016-0019>
- Day, A. L., & Livingstone, H. A. (2003). Gender differences in perceptions of stressors and utilization of social support among university students. *Canadian Journal of Behavioral Science*, 35(2), 73-83. DOI: 10.1037/h0087190
- Kaur, J. (2016). *Sense of community in online, face-to-face, and blended learning contexts*. Master's thesis, Memorial University of Newfoundland. Retrieved from <http://research.library.mun.ca/id/eprint/12634>
- Maraka, K. A., & Madjar, N. (2015). The role of goal structures and peer climate in trajectories of social achievement goals during high school. *Developmental Psychology*, 51(4), 473. Retrieved from <http://www.ncbi.nlm.nih.gov>
- Mello, Z. R. (2008). Gender variation in developmental trajectories of educational and occupational expectations and attainment from adolescence to adulthood. *Developmental Psychology*, 44 (4), 1069-1080.
- Rienties, B., Beausaert, S., Grohnert, T., Niemantsverdriet, S., & Kommers, P. (2011). Understanding the academic performance of international students: the role of ethnicity, academic, and social integration. *Higher education Quarterly*, 63, 685-700. Retrieved from <https://www.google.com/url?q=https://onlinelibrary.wiley.com/doiabs/10.1111/1468-2273.00100>
- Rovai, A. P. (2001). Building a classroom community at a distance: A case study. *Educational Technology Research and Development*, 49(4), 33-48. Retrieved from <https://doi.org/10.1007/bf02504946>
- Rovai, A. P. (2002a). Sense of community perceived cognitive learning, and persistence in asynchronous learning networks. *Internet and Higher Education*, 5, 319-332. Retrieved from <http://www.sciencedirect.com/science/article/pii/S1096751602001306>
- Rovai, A. P. (2002b). Development of an instrument to measure the classroom community. *Internet and Higher Education*, 5, 197-211.
- Shea, P., Li, C.S., Swan, K. & Pickett, A. (2005). Developing learning community in online asynchronous college courses: the role of teaching presence. *Journal of Asynchronous Learning Networks*, 9, 59-82.

- Soe Pyae Sone Mon (2019). *Academic motivation and college adjustment of first year pre-service teachers from education colleges*. Master's thesis, Sagaing University of Education.
- Sommer, M. M. (2013). *Psychosocial factors predicting the adjustment and academic performance of university students*. Doctoral dissertation, University of South Africa. Retrieved from https://www.google.com/url?q=http://uir.unisa.ac.za/bitstream/handle/10500/13283/thesis_sommer_mm.pdf
- Wider, W., Mustapha, M., Halik, M., & Bahari, F. (2017). Attachment as a predictor of university adjustment among freshmen. *Malaysian Journal of Learning and Instruction*, 14(1), 111-144. Retrieved from https://www.google.com/url?q=https://www.researchgate.net/publication/317301903_Attachment_as_a_predictor_of_university_adjustment_among_freshmen_evidence_from_a_Malaysian_public_university
- Yamamoto, Y., & Holloway, S. D. (2010). Parental expectations and children's academic performance in a sociocultural context. *Educational Psychology Review*, 22(3), 189-214.
- Young, S. & Bruce, M. A. (2011). Classroom community and student engagement in online courses. *MERLOT Journal of Online Learning and Teaching*, 7(2), 219-230.
- Yuen, A. H. K. (2003). Fostering learning communities in classrooms: A case study of Hong Kong schools. *Educational Media International*, 40(1), 153-162.

EXAMINATION MALPRACTICE AND TEST ANXIETY OF HIGH SCHOOL STUDENTS FROM MANDALAY REGION AND SHAN STATE

Yin Min Htet¹ and Aye Aye San²

Abstract

The main aim of this study is to investigate the examination malpractice and test anxiety of Grade 10 students in Mandalay Region and Northern Shan State. The sample of the present study was 851 (male = 357, female = 476) Grade 10 students from nine basic education high schools. Examination malpractice Scale (Omede, 2014) and Test Anxiety Inventory (Spielberger, 1980) were used. In this study, the data was analyzed by using descriptive statistics, the independent samples *t* Test, one-way ANOVA and Pearson Product Moment Correlation. According to the results of independent sample *t* Test, female students had higher examination malpractice than male students. 14 age students also had higher examination malpractice than 15 and above age students. But there was no significant difference in examination malpractice by school location and schools. There was no significant difference in test anxiety by gender, age and school location. Then, one-way ANOVA results showed that there were differences in test anxiety among schools. The results of Pearson Product-Moment ($r = .205$, $p < .01$) Correlation, the examination malpractice was positively correlated with test anxiety. Then, the results of open-ended questions for examination malpractice showed that strictly disciplines are essential in every examination.

Keywords: Examination, Examination Malpractice, Anxiety, Test Anxiety

Introduction

Education is a process of teaching and learning. Akaranga and Ongong (2013) said that education is a necessary process through which young adults are equipped to lead productive lives according to their talents and interests. The periodic testing and measurement of students after acquisition of experience is known as examination. Examinations vary in style, rigor and requirements. Examination could be in written form, multiple-choice, completion type, essay, true/false, mathematical question, or performance test. Nwankwo (2012) discussed examination malpractice as any irregular behavior exhibited by a candidate or anybody charged with the conduct of examination before, during or after the examination that contravenes the rules and regulations governing the conduct of such examination. Examination malpractice can be learnt as a determined wrong doing opposite to official examination rules and regulations coined to place a candidate at an unfair gain or loss.

Anxiety refers to a psychological and physiological state consists of emotional, somatic, cognitive and behavioural components. When the characteristics of anxiety are linked to academic or evaluation situations we speak of test anxiety. Test anxiety is a state of uneasiness, worry or feelings of uncertainty about an impending or ongoing test or examination. It is a familiar emotion which is caused by a perceived danger or threat to individuals. The highly test anxious person worries about examinations and shows physiological reaction patterns that go along with worry. Worry is a cognitively demanding activity marked by self-preoccupation, self-depreciation, and concern over the consequences of poor performance. It would be expected to interfere with performance on complex tasks when the evolutionary dimension is emphasized. Under neutral conditions, this interference should be either less potent or absent.

¹ Senior Assistant Teacher, Basic Education High School Moe-Joe, Pyin Oo Lwin Township, Mandalay Region

² Lecturer, Department of Educational Psychology, Sagaing University of Education

Purpose of the Study

The main purpose of the study was to investigate examination malpractice and test anxieties of high school students. The specific objectives are;

1. To examine the differences in Examination Malpractice and Test Anxiety of High School Students by gender, age and schools.
2. To investigate the relationship between Examination Malpractice and Test Anxiety of High School Students.
3. To seek the intuition behind High School Students for indulging in various forms of Examination Malpractices.

Definitions of Key Terms

Examination is not only a process of assessing the progress of students but also motivates and helps them to know their academic strengths and weaknesses (Akaranga & Ongong, 2013).

Malpractice is a careless, wrong or illegal behavior while in a professional job (Merriam-Webster, 2012).

Examination Malpractice is any irregular behavior exhibited by a candidate with the conduct of examination before, during or after the examination (Nuraini, 2008).

Anxiety refers to a psychological and physiological state consists of emotional, somatic, cognitive and behavioral components (Ossai, 2011).

Test Anxiety is a state of uneasiness, worry or feelings of uncertainty about an impending or ongoing test or examination (Ossai, 2011).

Review of Related Literature

Nwankwo (2012) discussed examination malpractice as any irregular behavior exhibited by a candidate or anybody charged with the conduct of examination before, during or after the examination that contravenes the rules and regulations governing the conduct of such examination. Examination malpractice can be learnt as a determined wrong doing opposite to official examination rules and regulations coined to place a candidate at an unfair gain or loss. Examination malpractice can be found as acts capable of subverting the right judgment in the case of assessment after a given teaching or training. It is an examinees pre and post mindset targeted at committing fraud in the examination and evaluation period.

Obudigha (2010) added that cheating in examinations has taken a different dimension where pupils have now resorted to writing materials and information that would aid them in the examination, on their body parts. He added that others also write information on chairs, tables, and walls of examination halls. An emerging form is where some pupils' carry foreign materials into the examination halls, with educational stakeholders providing them with assistance. Irregular activities take place both inside and outside of examination halls, and that impersonation, leakage of question papers.

Effects of examination malpractice includes discouragement of students from hard work, low productivity and poor job performances, bribery, corruption, and certificate racketeering. Examination malpractice with its disadvantages is affecting all the facets of the society negatively. The potentials of this nation will be difficult to be realized socially, economically, and technologically until the individuals, governments, and other stakeholders in the education sector collaborate to eradicate this malpractice.

Test anxiety is basically a strong emotional reaction that an individual experiences before and during an examination (Akca, 2011). Usually, situations where individuals are allowed personal evaluation is termed an evaluative situation, which will potentially result in performance efforts geared towards high standards that lead to high levels of performance. On the other hand, when placed in an evaluative situation, distress regarding normative assessment, comparative and competitive behaviors will lead to heightened anxiety and disrupt students from focusing on doing what is necessary to successfully complete the test (Zeidner & Matthews, 2005). Therefore, this is detrimental towards the performance and will erode academic achievement by affecting the subject's mental health and academic life (Zeidner, 1998; Rothman, 2004).

Students high in test anxiety usually perform as well as those low in test anxiety if the situation is not evaluative or stressful (Wine, 1971). This means only in evaluative situations, there is a difference in performance between high test-anxious and low test-anxious individuals. The difficulty of the task (i.e., test) is regarded to be a major source of stress and anxiety. Researchers found that blood pressure increased while students worked on difficult learning materials and decreased when they responded to easy materials. The difficulty may not only be due to the task, but also to other factors such as the ability of the student, amount of preparation, and prior experience with the task in which a student will be engaged (Zeidner, 1998).

Researchers suggested Helpful Hints to Ease Test Anxiety. They are as follows; prepare your child on a daily basis, emphasize effort over grades, listen to your child's feelings, bibliotherapy, practice the neutral tool, address the what-if questions, think good thoughts, get enough sleep. eat a hearty breakfast and have fun.

Method

In this study, quantitative research design and descriptive survey method were used.

Participants of the Study

Participants of this study were 851 Grade 10 Students. They were randomly selected from Nine Basic Education High Schools of Mandalay Region and Shan State in the academic year of 2019-2020. Males comprised (375) and the rest were females.

Instruments

Examination malpractice is measured by using Examination Malpractice Scale (EMS). This scale was developed by Jacob Omede. It consists of sixty-five items and four dimensions. Three dimensions of this scale are enforcement of penalties for examination offenses components, morality components, practice of religion of respondents components and perception of students components. There are (17) items for penalties on examination offenses component, (40) items for morality and (8) items for the practice of religion of respondents component which are rated on five point Likert scale; 1 (Strongly Disagree) to 5 (Strongly Agree).

In this study, Test Anxiety Inventory (TAI) developed by Spielberger was used to study test anxiety of High School Students. The original inventory consists of 30 items. Therefore, in this study, Test Anxiety Inventory (TAI) consists 30 items they were rated on a five-point Likert scale; 1 (Strongly Disagree) to 5 (Strongly Agree).

For measuring Examination Malpractice of High School Students, Examination Malpractice Test was constructed by researchers. This Examination Malpractice Test consists of 60 items. After pilot had conducted, 10 items which were not relevance and were removed from the test.

The instruments used in this study were adapted to Myanmar version. After preparing the questionnaire, expert review was conducted for face validity and content validity of Examination Malpractice Scale and Test Anxiety Inventory by experts from Department of Educational Psychology in Sagaing University of Education. After that, some items were modified. Therefore, these instruments can be considered as a reliable tool for the study.

Findings

Table 1 Descriptive Statistics for Examination Malpractice of High School Students

Variables	N	No of items	Min	Max	Mean	Mean%	SD
Discipline Component	851	19	39	99	66.31	66.98	6.693
Moral Component	851	21	43	93	70.46	75.76	6.379
Religion Component	851	10	17	49	32.71	66.76	4.860
Examination Malpractice	851	50	115	211	169.48	80.32	12.228

Table 1 showed that the number of participant, number of items, minimum, maximum, mean, mean percentage and standard deviation of examination malpractice. The result showed that the mean percentage of examination malpractices is above 80 %. So the students from the selected Basic Education High School in Pyin Oo Lwin and Naung Hkio Township were high in examination malpractice.

Table 2 Result of Independent Samples *t* Test for Examination Malpractice of High School Students by Gender in All Components

Variables	Gender	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Discipline Component	Male	65.47	-3.292***	849	.001
	Female	66.98			
Moral Component	Male	69.76	-2.841**	849	.005
	Female	71.01			
Religion Component	Male	32.78	.383	849	.702
	Female	32.66			
Examination Malpractice	Male	168.01	-3.131**	849	.002
	Female	170.64			

Note: ** The mean difference is significant at 0.01 level

*** The mean difference is significant at 0.001 level.

According to Table 2, the result of independent samples *t* test showed that there was significant difference in discipline component and moral component of High School Students between males and females. It was interpreted that female students were higher in discipline and moral than the male students. But, male students were higher in religion than the female students. Thus, female students were higher than male students in examination malpractice.

Table 3 Result of Independent Samples *t* Test for Examination Malpractice of High School Students by Age in All Components

Variables	Gender	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Discipline Component	14	67.49	3.167**	667	.002
	15 and above	65.84			
Moral Component	14	71.03	1.708	667	.089
	15 and above	70.17			
Religion Component	14	32.32	-1.489	667	.137
	15 and above	32.88			
Examination Malpractice	14	170.84	2.011*	667	.045
	15 and above	168.89			

Note: * The mean difference is significant at 0.5 level.

** The mean difference is significant at 0.01 level.

According to Table 3, the result of independent sample *t* test showed that there was significant difference in discipline component of High School Students between 14 and 15 and above age. It was interpreted that 14 age students were higher in discipline than the 15 and above students.

Table 4 Result of Independent Samples *t* Test for Examination Malpractice of High School Students by School Location in All Components

Variables	School Location	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Discipline Component	Urban	66.81	2.267*	849	.044
	Rural	65.77			
Moral Component	Urban	70.14	-1.534	849	.514
	Rural	70.81			
Religion Component	Urban	32.98	1.661	849	.273
	Rural	32.42			
Examination Malpractice	Urban	169.92	1.098	849	.265
	Rural	169.00			

Note: *The mean difference is significant at 0.05 level.

According to Table 4, there was significant difference in discipline component of High School Students by school location. But there were no significance difference in moral component and religion component. It was interpreted that the students from urban region were higher discipline component than the students from rural region. And, the examination malpractice of high school students from urban region was higher than that of the students from rural region.

Table 5 ANOVA Result for Examination Malpractice of High School Students by Schools

Schools	Sum of Square	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Between Groups	1890.801	8	236.350	1.590	.124
Within Group	125195.667	842	148.688		
Total	127086.468	850			

According to table 5, the result was presented that there was no significant differences in examination malpractice by schools.

Table 6 Descriptive Statistics for Test Anxiety of High School Students

Variables	N	No. of items	Mini	Max	Mean	SD
Test Anxiety	851	30	60	146	106.59	12.921

Table 6 showed the number of participant, number of items, minimum, maximum, mean and standard deviation of test anxiety. The students from the selected Basic Education High Schools in Pyin Oo Lwin and Naung Hkio Township were moderated in test anxiety.

Table 7 Result of Independent Samples *t* Test for Test Anxiety of High School Students by Gender

Variable	Gender	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Test Anxiety	Male	104.12	-5.027	849	.110
	Female	108.54			

According to Table 7, the result of independent samples *t* test showed that there was no significant difference in tests anxiety.

Table 8 Result of Independent Samples *t* Test for Test Anxiety of High School Students by Age

Variable	Gender	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Test Anxiety	14	106.39	-.412	667	.681
	15 and above	106.81			

According to Table 8, the result of independent samples *t* test showed that there was no significant difference in tests anxiety.

Table 9 Result of Independent Samples *t* Test for Test Anxiety of High School Students by School Location

Variable	School Location	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Test Anxiety	Urban	107.09	1.180	849	.614
	Rural	106.05			

According to Table 9, there was no significant difference in test anxiety of high school students by school location.

Table 10 ANOVA Result for Test Anxiety of High School Students by Schools

Schools	Sum of Square	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Between Groups	2800.636	8	350.079	2.119*	.032
Within Group	139115.056	842	165.220		
Total	141915.692	850			

Note: * The mean difference is significant at 0.05 level.

According to table 10, the result was presented that there was significant differences in test anxiety by the schools at 0.05 level. It can be concluded that the students from the selected Basic Education High Schools in Pyin Oo Lwin and Naung Hkio Township had differences in test anxiety.

Table 11 Correlation Matrix between Examination Malpractice and Test Anxiety

	Examination Malpractice	Test Anxiety
Examination Malpractice	1	.205**
Test Anxiety	.205**	1

Note: Correlation is significant at 0.01 level (2- tailed)

Table 11 showed the correlation between examination malpractice and test anxiety of High School students from Pyin Oo Lwin and Naung Hkio Township. The correlation between examination malpractice and test anxiety of high school students was .205. The correlation is significant at 0.01 level. This correlation coefficient was slightly low.

Table 12 Responses of High School Students when they know someone takes part in Examination Malpractice

No	Responses	N	Frequency	%
1	Staying hidden	851	346	40.7%
2	Telling teacher	851	297	34.9%
3	Telling him not to cheat	851	105	12.3%
4	Undecided	851	35	4.1%
5	Joking him about it	851	34	4%
6	Saying “ show me”	851	29	3.4%
7	Not answering	851	5	0.6%
Total		851	851	100%

In table 12, answers of the respondents varied on examination malpractice. When a student knows someone takes part in examination malpractice, the responses are given by 346 respondents (40.7%) were staying hidden, 297 respondents (34.9%) were telling teacher and 105 respondents (12.3%) were telling not to cheat.

Table 13 Responses of High School Students when the Teacher knows they take part in Examination Malpractice

No	Responses	N	Frequency	%
1	Changing behavior	851	417	49%
2	Telling a lie	851	237	27.8%
3	Depression	851	65	7.6%
4	Wrong responses to the teacher	851	47	5.5%
5	Apologize for mistakes	851	46	5.4%
6	Undecided	851	38	4.5%
7	Not answering	851	1	1%
Total		851	851	100%

In table 13, the answers of the respondents varied on examination malpractice. When a teacher knows a respondent take part in examination malpractice, the responses are given by 417 respondents (49%) were changing behavior, 237 respondents (27.8%) were telling a lie and 65 respondents (7.6%) were feeling depression.

Table 14 Responses of Teachers in Solving Examination Malpractice of High School Students

No	Responses	N	Frequency	%
1	Telling well not to take part in examination malpractice	851	249	29.3%
2	Giving punishments to students	851	170	20%
3	Ignoring	851	151	17.7%
4	Sending to headmaster's office	851	125	14.7%
5	Taking back the answer sheet	851	99	11.6%
6	Reducing students' marks	851	44	5.2%
7	Not answering	851	13	1.5%
Total		851	851	100%

In table 14, the answers of the respondents varied on examination malpractice. Dealing with the teachers solve the problem of examination malpractice, the responses are given by 249 respondents (29.3%) were telling well not to take part in examination malpractice, 170 respondents (20%) were giving punishments to students and 151 respondents (17.7%) were ignoring.

Table 15 Reasons of High School Students when the Teacher knows a Student takes part in Examination Malpractice

No	Reasons	N	Frequency	%
1	Fear	851	487	57.2%
2	Worry	851	112	13.2%
3	Shame	851	91	10.7%
4	Pain	851	83	9.8%
5	Excited	851	68	8%
6	Not answering	851	10	1.2%
Total		851	851	100%

In table 15, the answers of the respondents varied on examination malpractice. When a teacher knows a respondent take part in examination malpractice, the responses are given by 487 respondents (57.2%) were fear, 112 respondents (13.2%) were worry and 91 respondents (10.7%) were shame.

Table 16 Causes of Examination Malpractice among High School Students

No	Causes	N	Frequency	%
1	Insufficient preparation for the examination among many students	851	670	78.7%
2	Lack of self-confidence	851	116	13.6%
3	Pressure effect of parents	851	29	3.4%
4	Desire among many students to pass the examinations at all cost	851	19	2.2%
5	Pressure effect of teachers	851	16	1.9%
6	Not answering	851	1	0.12%
Total		851	851	100%

In table 16, the answers of the respondents varied on examination malpractice. The cause of examination malpractice in schools are given by 670 respondents (78.7%) were insufficient preparation for the examination among many students, 116 respondents (13.6%) were lack of self-confidence and 29 respondents (3.4%) were pressure effect of parents.

Table 17 Ways of High School Students use in Examination Malpractice

No	Ways	N	Frequency	%
1	By writing answers on materials (e.g., ruler, eraser, paper)	851	326	38.3%
2	By writing answers on body parts (e.g., on arms, hands, legs)	851	270	31.7%
3	By copying other students' work during exam	851	102	12%
4	By sharing answers with other students silently	851	99	11.6%
5	Undecided	851	51	6%
6	Not answering	851	3	0.3%
Total		851	851	100%

In table 17, the answers of the respondents varied on examination malpractice. Dealing with the ways that students use in examination malpractice, the responses are given by 326 respondents (38.3%) were writing answers on materials (e.g., ruler, eraser, paper) , 270 respondents (31.7%) were writing answers on body parts (e.g., on arms, hands, legs) and 102 respondents (12%) were copying other students' work during exam.

Table 18 Ways to Reduce Examination Malpractice among High School Students

No	Ways	N	Frequency	%
1	To study the lessons regularly	851	331	38.9%
2	To supervise well before, during and after examination	851	179	21%
3	To check the students strictly	851	93	10.9%
4	To identify the questions well	851	86	10.1%
5	To train well	851	73	8.6%
6	To teach clearly and explain well while teaching	851	53	6.2%
7	To punish effectively	851	36	4.2%
Total		851	851	100%

In table 18, the answers of the respondents varied on examination malpractice. Dealing with the ways that students use in examination malpractice, the responses are given by 331 respondents (38.9%) were studying the lessons regularly, 179 respondents (21%) were supervising well before, during and after examination and 93 respondents (10.9%) were to check the students strictly in examination.

Conclusion

Both examination malpractice and test anxiety can effect students. Thus, it is necessary to reduce examination malpractice and test anxiety of high school students. Among the most common beliefs that the students have about examination malpractice are that

1. Examination Malpractice is the only way to pass the exam.
2. It is easy to take examination malpractice in our environment.
3. Discipline used in examination is not strict.
4. Examination Malpractice is the best answer if the question is difficult.
5. Moral is not important in examination.
6. Religion and exam are not concerned.
7. Examination is depending on teachers or authorities.

Such wide ranging and varied beliefs are inimical to the development of a healthy examination. Teachers involved as a major part for reducing examination malpractice. Teachers should have enough experience and knowledge dealing with examination discipline. For example;

1. Students had to sit with enough space between each other.
2. Students had to come in time to take part in examination.
3. Students had to take punishment if they do examination malpractice.

Teachers must prepare well for students' examination like desks, answer sheets, questions, time and so on. Teachers must check students well before, during and after examination. If there are any problems or illegal behaviors, teachers must recheck and solve according or discipline. This is not an easy task, but it is an essential one.

- One major cause of examination malpractice in the schools was indiscipline among students that made many of them to be involved in examination malpractice.
- If there are any problems or illegal behaviors, teachers must recheck and solve according or discipline.
- School authority should always organize seminars with teachers and staffs on the ills of examination malpractice in schools.

Parents must train students for studying well in home. Instead of encouraging for cheating or let them do many house works. They must give accurate time for their children, For example, let students study two hour every night and help them if they have any difficult with their lesson. Parents must share food moral and religion activities to their students.

Teachers should reduce students' test anxiety by listening their problems and counseling good ways to solve them. Teachers need to be aware that they must not be major test anxiety makers for their students. They should be the best and idol person for their children, Teachers should be active and dependent for children.

Parents should avoid making test anxiety to their children. They need to say warmly in family. They should reduce their children stress and problems with love.

As a conclusion, this research would be applied for improvement of education as a part of important factors. It would be expected to help in teaching, learning and testing process for examination. It would be useful for educators to know the effect of examination malpractice and

test anxiety in education area. This research is significantly highlighted how important to reduce the educational test system of our country. Moreover, it was the best time to replace new curriculum system in Myanmar. Unlike instruments using in this research, the future study can be conducted with other instruments of examination malpractice and test anxiety.

Acknowledgements

We would like to offer respectful appreciation to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) for their encouragement, administrative supports, official permission, and providing facilities throughout the research. We would like to express our indebtedness to Headmasters and Headmistresses from selected schools from Mandalay Region and Shan State for their permission to conduct this study.

Reference

- Akaranga, S. I., & Ongong, J. J. (2013). The phenomenon of Examination Malpractice: An Example of Nairobi and Kenyatta Universities. *Journal of Educational Research*, 2(1): 91-101.
- Akca, F. The relationship between test anxiety and learned helplessness. *Social Behaviour and Personality*, 2011, 39 (1), 101- 112.
- Nwankwo, P. (2012). Examination malpractice in Nigeria: Nigeria world.
- Nuraini, A. (2008) Examination Malpractices: Causes, Effects and Solutions. <file:///C:/Users/oruvian/Documents/EXAMINATION%20MALPRACTICES.html>
- Obudigha, W. (2010). Checking Examination Malpractice in Nigerian Schools. In Ndifon, R. A. & Comelius-Ukpepi, B. U. (2014). Examination Malpractice in the Primary School: Problems and Prospects. *International Journal of Humanities Social Sciences and Education*, 1(9), 118-121.
- Omede, J. (2014). Some Possible Causes of Examination Malpractice among Students of Kogi State College of Education (KSCOE). Ankpa, Nigeria.
- Ossai MC. Guidance and counseling implications of examination anxiety as a predictor of students' attitude towards *Journal of Social Sciences*. 2011; 2(7): 85-90.
- Rothman, D. K, New Approach to Test Anxiety. *Journal of College Student Psychotherapy*, 2004, 18(4), 45-60.
- Spielberger, C. D. (1980). Preliminary professional manual for the Test Anxiety Inventory.
- Wine, J. D. (1971). Test anxiety and direction of attention. *Psychological Bulletin*, 76, pp. 92-106.
- Zeidner, M. (1998). Test anxiety: The state of the art .New York, NY: Plenum.
- Zeidner and Matthews (2005). Anxiety in Schools.

ERROR PATTERNS ANALYSIS IN HIGH SCHOOL PHYSICS LEARNING

Hnin Thazin Win¹, Khin Khin Thant²

Abstract

This study investigated the error patterns committed by students in high school Physics learning. It was intended to analyze the error patterns committed by Grade 10 students in Physics learning. This study aimed to find out the type of error patterns most committed by male and female students. Quantitative approach and descriptive survey method was used in this study. There were altogether six schools in this study. By using simple random sampling technique, 500 male students and 500 female students were selected from Pyinmana Township. So, altogether 1000 Grade 10 students participated in this study. In this study, the instrument used was Physics Diagnostic Test including fifty multiple-choice questions associated with the targeted topics. It was found that the students demonstrated with highest percentage of the conceptual errors (25.55%), followed by the communication errors (22.95%), errors by insufficient information (17.21%), operational errors (12.21%), mathematical errors (11.60%), and algorithmic errors (10.48%). Thus, in this study, the type of error patterns most committed by the students was found conceptual error. Male students committed the conceptual errors most. Female students committed the conceptual errors most. The results pointed out that by analyzing and identifying the errors, teachers can provide students constructive feedback immediately. This study can be used as an effective approach when performing classroom instructional assessment.

Keywords: Physics Learning, Physics Diagnostic Test, Error Patterns

Introduction

Nowadays, science education becomes an essential part of education of all people growing up in a fast changing and increasingly complex technological world. Science and Technology are used to harness the forces of nature and transform the raw resources with which nature endows man into goods and services for better quality of life. Takubu (2003) asserted that in the modern world of science, the technological potentials of any nation could be more accurately gauged by the quality of its science education programs. Science education is a process of teaching, training, and learning to acquire scientific knowledge and skills by the learner.

Thus, science learning, especially Physics learning is becoming more and more important in this technology world. Physics is an important element in the education of chemists, engineers and computer scientists, as well as practitioners of the physical and biomedical sciences. Despite the importance of Physics learning, students' performance in Physics becoming lower and thus teachers need to diagnose the areas in which students are having deficiencies. Thus, the present study investigated the errors encountered by students in learning Physics.

Purpose of the Study

The main purpose of the research is to investigate the error patterns of Grade 10 students Physics learning. The specific purposes of this study are

1. To determine the type of error patterns most committed by male students in Physics learning
2. To determine the type of error patterns most committed by female students in Physics learning

¹ Senior Assistant Teacher, Basic Education High School (Branch) Sinthay, Singu Township, Mandalay Region

² Associate Professor, Department of Educational Psychology, Sagaing University of Education

Definitions of Key Terms

Diagnostic Test. Diagnostic test can be defined as an assessment mainly used to identify strengths and weaknesses towards any subjects of learning (Zhao, 2013).

Error. Error is defined as reflection of students' misconceptions and missing conceptions (Matz, 1982, p.26).

Error Pattern. Categorization of errors having significant element in common (Joshi, 2011).

Review of Related Literature

Physics Teaching and Learning in Classroom

Physics is a physical science that deals with the behavior of energy and matter and their relationship with other physical parameters. It generates fundamental knowledge which is essential for the required technological advancement needed to propel the economic engine of the world. Secondary school Physics is aimed at developing the students understanding of basic phenomenon and application of scientific ideas to everyday life. It enables the learner to acquire relevant knowledge with understanding, ability to handle and process information and problem solving through the acquired knowledge.

The objectives of teaching Physics were drawn with some expected consequences. Three of the consequences of learning science according to Roth and Lawlers (2002) include coping effectively with everyday life in a society that is highly influenced by technology; learning science as a way by which scientific knowledge and skills can be deployed and integrated with other types of knowledge and skills in a technological and environmental context. The third dimension of the consequences of acquiring scientific knowledge is the belief in the assumptions of the dynamic nature of scientific knowledge.

Diagnostic Testing in Physics

Physics is considered as the most problematic area within the realm of science, and it traditionally attracts fewer students than other sciences like Chemistry and Biology. Most of the students perceived Physics as a difficult subject during high school days and becomes more problematic when they are in college and even more challenging in graduate education. With this, in investigating student difficulties, teachers should always try to find ways to establish, enlighten, and deliberately present cognitive and affective way for students to fully understand the concept of Physics. There are different ways on how teachers present topics that will trigger student reasoning that will enhance the applicability of the cognitive concepts to overcome their difficulties in Physics. One means of improving the application of misconceptions research is by the use of diagnostic tests which incorporate the findings of the research.

Error Analysis in Physics

Error analysis is significant in many respects; a study of students' school work, such as homework, class work, tests and examination to identify errors committed by students gives the teacher a fair ideas of the progress of the students and an indication of which part of the subject taught were not well understood. A good record of the types of errors committed by students could guide the teacher when preparing future lessons. According to Mohammad (2000), error analysis could indicate the state of the learner and show areas where remediation is needed. To the learners, it is psychologically important to indicate to them their errors, not as a sign of failure but as a positive source of improvement.

Researchers on students' errors have identified and classified errors into different classes. The types of errors committed by students in Nandi South Sub County in Physics Mock examinations (Fatuma Mutai et al., 2015) were as follows:

- i. Algorithmic error
- ii. Communication error
- iii. Computational error
- iv. Operational error

In the present study, Allchin (2001) and Fatuma Mutai et al., (2015) approach with some modification were adopted for analyzing error patterns.

Method

The main purpose is to analyze the error patterns most committed by students in Physics learning.

Sample of the Study

The researcher randomly selected a total sample of 1000 Grade 10 students from Basic Education High Schools in Pyinnmana Township.

Instrumentation

The research instrument employed for the study which was captioned "Diagnostic Test for Grade 10 Physics Chapter 1 to 3" developed by researcher was utilized to diagnose the errors Physics students made in answering related multiple-choice items. First, the researcher established 100 multiple choice items from Grade 10 Physics Chapter 1, 2, and 3. After an expert review was conducted for face validity and content validity by four experts who have special knowledge with the field of Educational Psychology, Methodology, and in the field of Physics, the items were revised. After conducting pilot study, the reliability coefficient of the instrument with Cronbach's alpha 0.731 was obtained. Finally, out of 100 items, 50 items with mean item difficulty index ranging from 0.535 to 0.70 and mean item discrimination index within the range of 0.35-0.40 were left using Test Analysis Program (TAP) version 14.7.4 (N<10k version).

Table 1 Description of Item Types for Grade 10 Physics Chapter-1 (Physics and Measurement)

Item level	Description of item level	Example
Level 1	Memorization	Volume is a _____. A. scalar quantity B. displacement C. vector quantity
Level 2	Conceptual Understanding	One example for the derived type of physical quantity is _____. A.area B.second C.distance
Level 3	Application of Concepts	The time required for light to across a room 6m long is _____. A. 2×10^{-8} s B. 18×10^8 s C. 3×10^{-8} s
Level 4	Computation	$0.1\text{km} + 0.0005\text{Mm}$ is equal to _____. A.500m B.600m C.0.005m

Table 2 Description of Item Types for Grade 10 Physics Chapter-2 (Vectors)

Item level	Description of item level	Example
Level 1	Memorization	The new vectors obtained from sub-dividing a vector are called the ____ of the original vector. A.components B.resultants C.none of A and B
Level 2	Conceptual Understanding	For two vectors in opposite direction, the direction of $\vec{R}$ is the same as the direction of ____ vector. A.smaller B.larger C.zero
Level 3	Application of Concepts	The sum of the vectors which are equal in magnitude and opposite in direction is ____. A.positive B.negative C.zero
Level 4	Computation	The magnitude of the resultant force of a 3N pointing east and 4N pointing north is ____. A.25N B.7N C.5N

Table 3 Description of Item Types for Grade 10 Physics Chapter-3 (Describing Motion)

Item level	Description of item level	Example
Level 1	Memorization	The change in position along a certain direction is called ____. A.distance B.displacement C.velocity
Level 2	Conceptual Understanding	The displacement will be ____ if the starting point and finishing point are the same. A. double B. negative C. zero
Level 3	Application of Concepts	A person travels from A to B along a curve of 3km and returns to A .Then the displacement of the body is ____. A.0km B.-3km C.6km
Level 4	Computation	In above problem, if the body takes 1.5h to travel from A to B, its velocity will be ____. A.0kmh ⁻¹ B. 2kmh ⁻¹ C.4kmh ⁻¹

Data Analysis and Results

The findings of error pattern analysis are presented in table 4, each of which represents types of error in the error analysis process.

Table 4 Students' Performances in Their Solution to Items

No.	Description	Frequency	Percentage (%)
1.	Correct Answers	19248	38.50%
2.	Total number of Errors	30175	60.35%
3.	Not answer (Negligence)	577	1.15%
Total Answered Items		50000	100.00%

It is obviously seen that more than half of the items responded by the participated students were contained some types of error that barrier to the correct answers of these items. Thus, these common error patterns were needed to be carefully analyzed.

The researcher was looking for understanding on many different levels. Consequently, the items have been divided into four general level of categories. In the first category, items were selected for students' memorization. Items for basic conceptual understanding of students were selected in the second category. And also, items selected for application of Physics concepts were included in the third category. Then, computation items were selected in the final category. Each of the fifty items is briefly analyzed and examples of common errors and unique errors are discussed.

Separately, analyses were carried out in identifying the type of errors exhibited by the students. The distribution of error types were based on four levels: memorization, conceptual understanding, application of concepts and computation.

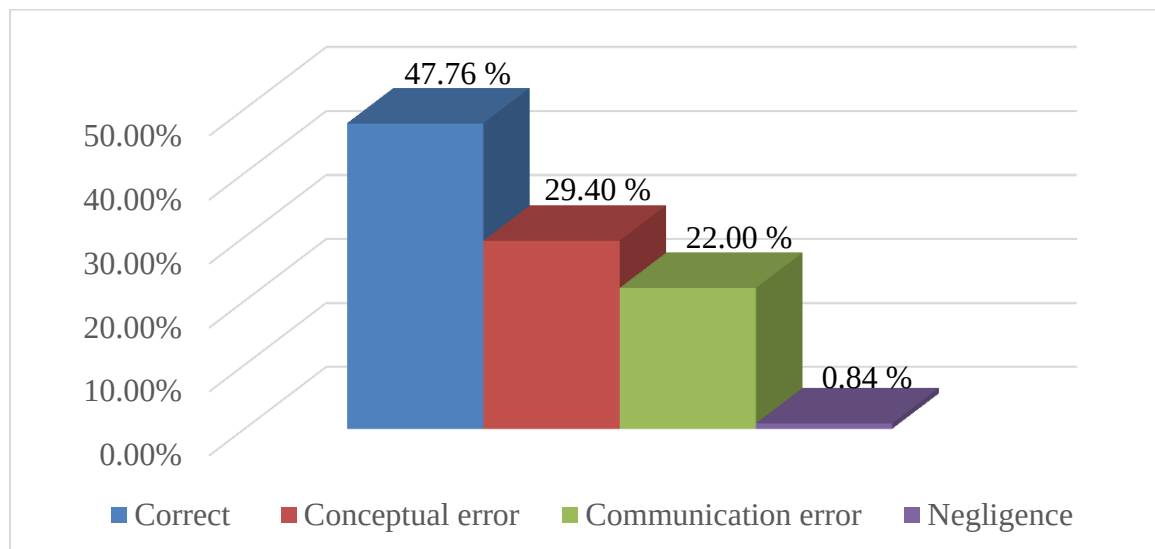


Figure 1 Distribution of Students' Responses with Total Common Error Types for Memorization Level

Figure 1 can be concluded that students committed more conceptual rather than communication error in memorization level.

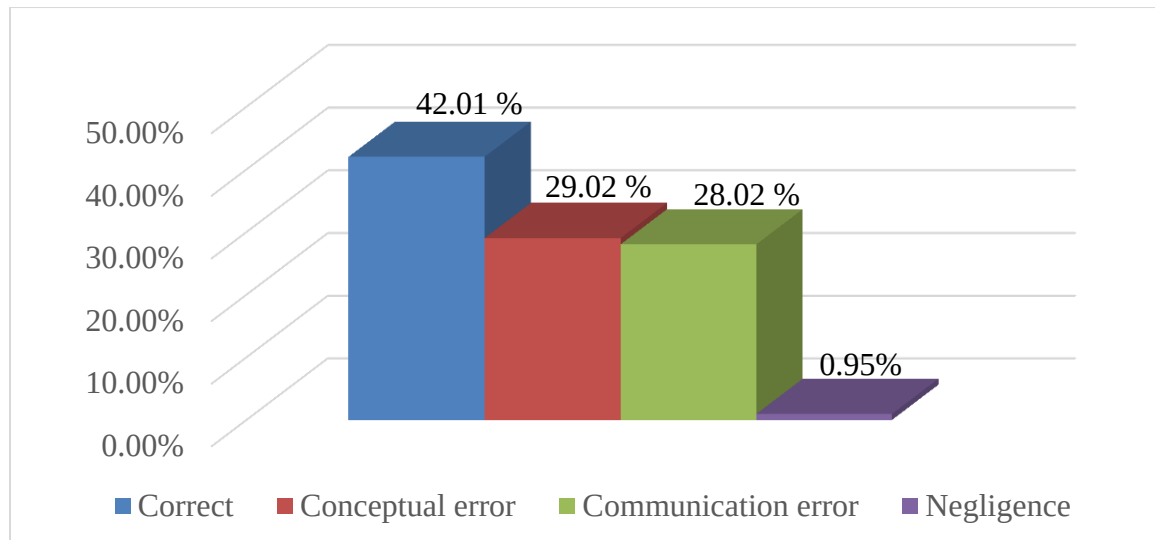


Figure 2 Distribution of Students' Responses with Total Common Error Types for Conceptual Understanding Level

According to Figure 2, it can be concluded that students committed more conceptual errors rather than communication error in conceptual understanding level.

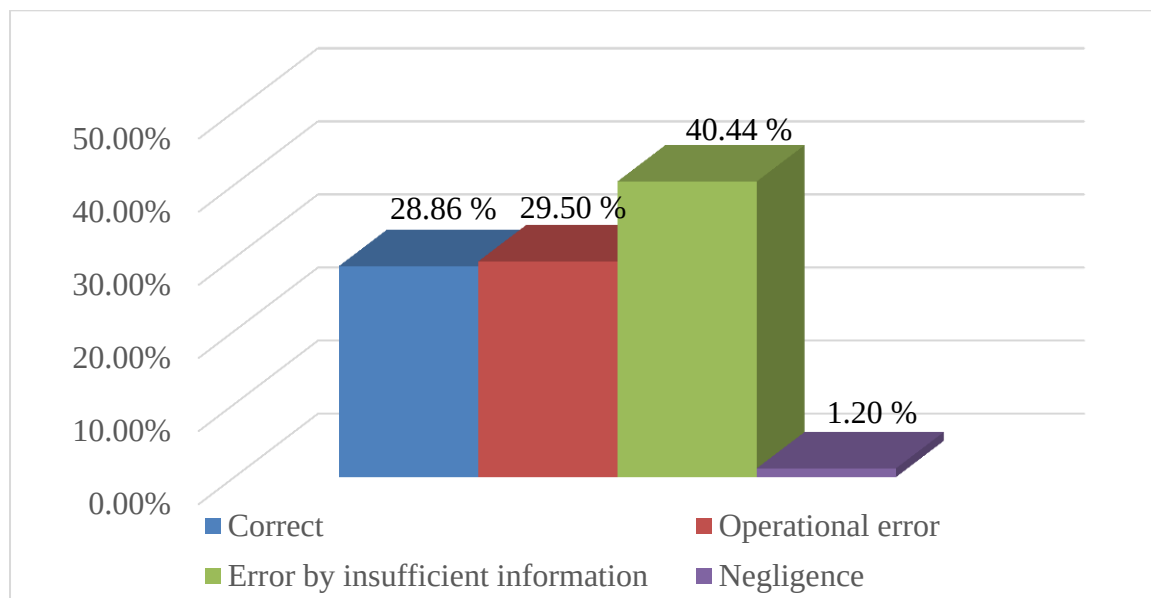


Figure 3 Distribution of Students' Responses with Common Error Types for Concept Application Level

Figure 3 can be concluded that students committed more errors by insufficient information rather than operational error in concept application level.

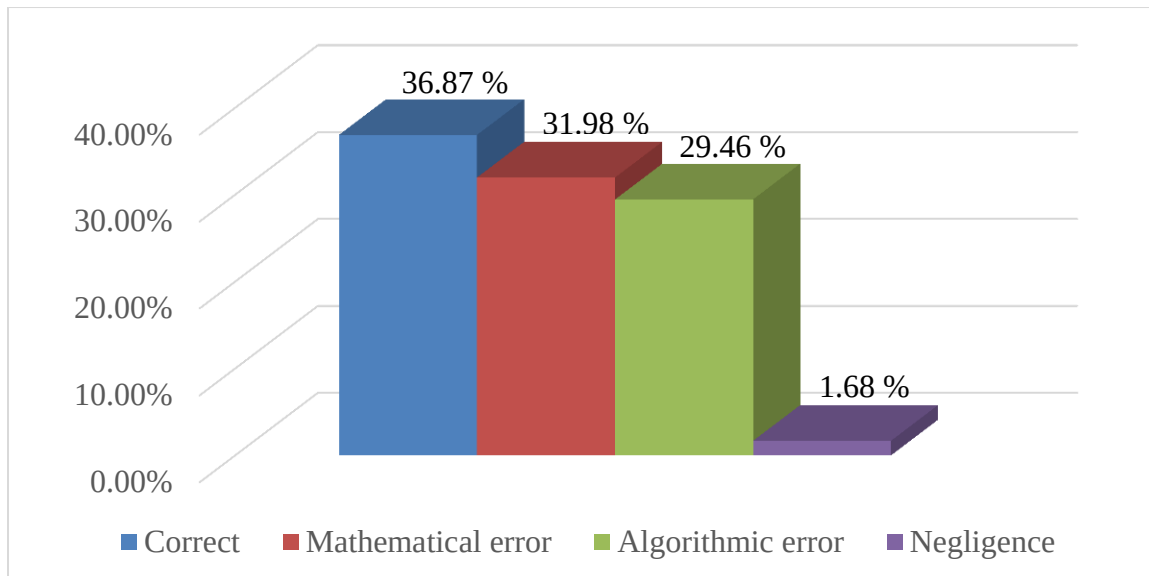


Figure 4 Distribution of Students' Responses with Common Error Types for Computation Level

The results indicated that students committed more mathematical error rather than algorithmic error in computation level.

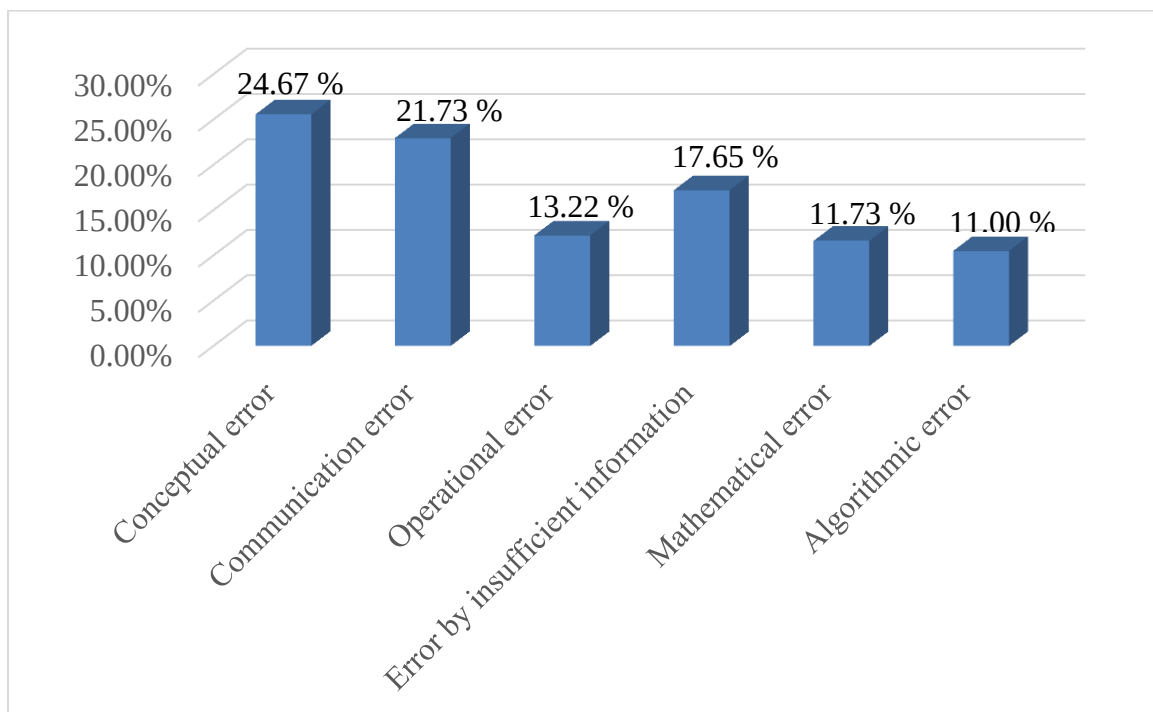


Figure 5 Distribution of Each Common Error Patterns

Based on the analysis of errors, six types of errors have been identified as a whole. The errors included were the conceptual error, communication error, operational error, error by insufficient information, mathematical error and algorithmic error. The result revealed out that 7580 (25.12%) of total errors committed conceptual error, 6744 (22.35%) of total errors committed communication error, 3834 (12.71%) of total errors committed operational error, 5258 (17.42%) of total errors committed error by insufficient information, 3518 (11.99%) of total errors committed mathematical error and 3241 (10.74%) of total errors committed algorithmic error. This indicates that the errors mostly committed by the students is the conceptual error.

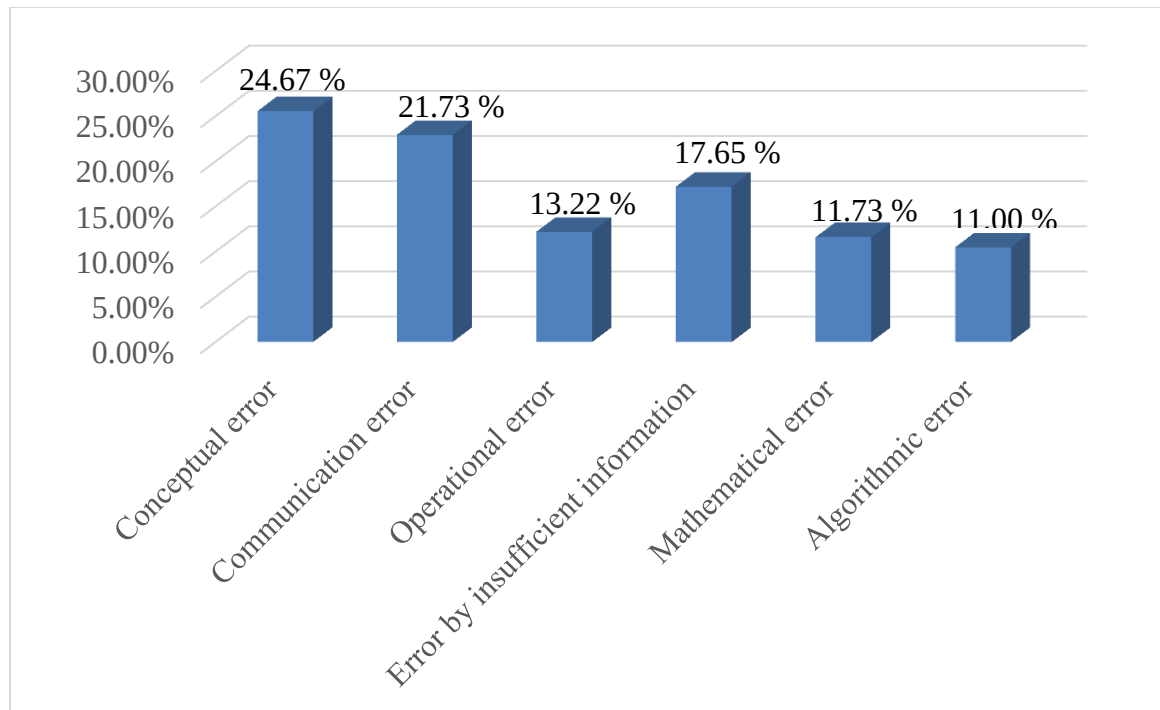


Figure 6 Distribution of Each Common Error Patterns by Male Students

The result indicates that the error mostly committed by male students is the conceptual error.

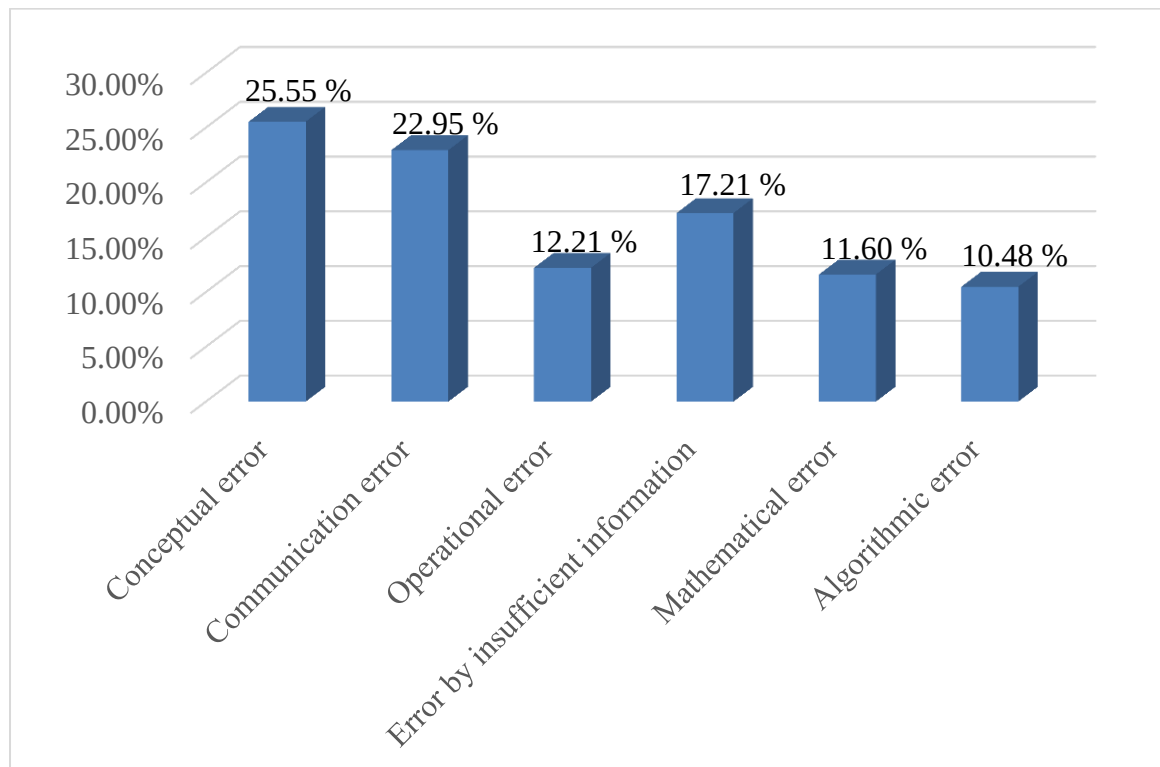


Figure 7 Distribution of Each Common Error Patterns by Female Students

The result indicates that the error most committed by female students is the conceptual error.

Conclusion, Discussion, and Recommendations

Conclusion and Discussion

Based on the analysis of errors in this study, six types of common errors have been identified as a whole. The errors included were conceptual error, communication error, operational error, error by insufficient information, mathematical error, and algorithmic error. These errors were related to a student's lack of knowledge or a misunderstanding, lack of translational skill to communicate the required concepts with the respective item, insufficient knowledge, operating incorrect procedure in employing the appropriate concepts and misunderstanding or erroneous applications of mathematical rules.

According to the descriptive analysis of the study, the frequencies and percentages of error patterns made by the students were have been investigated. Therefore, these findings showed that 3924 (25.55%) of total errors committed were conceptual error, 3524 (22.95%) of total errors committed were communication error, 1875 (12.21%) of total errors committed were operational error, 2643 (17.21%) of total errors committed were errors by insufficient information, 1780 (11.60%) of total errors committed were mathematical error and 1610 (10.48%) of total errors committed were algorithmic error. Based on the findings of this study, students committed several errors in the diagnostic test and when classified into error types, conceptual error had the highest frequency while algorithmic error had the least frequency. Both male and female students committed conceptual error most. It was found that major causes of error types committed centers on inability to recall facts, concepts, wrong algorithmic procedures which could be adequately handled by using problem solving approach.

Again, it was found that almost all students faced difficulties in one or more items by somewhat of errors and there was no one who performed correctly to all items. Across all four levels; memorization, conceptual understanding, application of concepts, and computation, most of students made errors in concept application level, only 28.87% of total answers have been responded correctly by students in this level. Among 50 items, 47.75% of total answers were correct answers in responding 9 items for memorization level, 42.01% of total answers were answers chosen correctly by students in 17 items included in conceptual understanding level. 36.87% of total answers for 11 items included in computation level were correct answers responded by students.

The analysis of the percentages of learners who did not attempt to answer each item goes further for providing insight into areas of difficulty. A considerable amount of students left most of the items blank without choosing any alternative. Item No. 2 was the only item answered completely by both male and female students without making negligence. Time allowance for students in answering items was the fact that should be considered by the researcher. According to the findings of this study, the error pattern most committed by both male and female students was conceptual error. Thus, it can be concluded that most of the students were having difficulty or misunderstandings in basic Physics concepts. Generally, most misconceptions in Physics challenge to students. Factors that contribute to misconceptions should also be delicately considered.

In conclusion, the reasons students gave for committing the error provide useful input for the teachers to design teaching and learning activities that help students to be more competent in Physics. Their comments, narratives and explanations for the errors help the teachers to gain useful insights on their cognitive challenges and so coherent strategies can be devised to address these challenges.

Results of this study were expected to help –

- i. Teachers
 - to be able to give an assessment of students' progress in Physics learning
 - to be able to indicate areas of Physics course not well understood by students
 - to be able to make possible adjustments in teaching strategies for further instruction
 - to be able to provide the students with constructive feedback and appropriate remediation when needed
- ii. Students
 - to be curious of how errors come
 - to be able to avoid them especially areas in which they are most prone to making such errors

Recommendations

Based on the finding from this study, the following recommendations are made:

1. Science teachers are encouraged to diagnose their students' errors after instructions to identify common errors and use effective remediation package to correct them. This will improve students' performances in Physics.
2. Science teachers need to adjust their teaching strategies through giving practical examples, improvising materials and introducing interactive discussions during Physics lessons to induct students on areas through which errors occur and monitor and evaluate students regularly to identify their strengths and weaknesses.
3. Science teachers should regularly evaluate the teaching and learning of science in an effort to incorporate diagnosing misconceptions and development of remediation approaches for effective performance of students in science.
4. Textbook publishers should adopt the pattern of arrangement of textbooks to contain lesson notes, hands-on and minds-on activities, numerical exercises, solution to numerical exercises for better improvement of learning and achievement in Physics.
5. Physics students should find time to go through the diagnosis of error patterns for enhancing better achievement and less commitment of errors so as to learn some Physics skills and knowledge presented in problem solving approach which serve as supplement and booster to their usual Physics lessons.

Limitations and Future Research

1. The schools used for the study were state government schools. Federal and private schools were not involved. Federal and private schools have different setting interns of teachers and equipment. This different settings could create some difference which can affect the generalization to be made from the outcome of present research.
2. The items used in this research were selected from topics; Physics and Measurement, Vectors, and Describing Motion from Grade-Ten Physics Textbook; Chapter 1, 2 and 3. Other topics may have their peculiarities which may be different from that of the selected topics in this study. The possible difference could limit the generalizability of present findings from the study.
3. The study was conducted on Physics theory, not including practical. This restriction may have an effect on the generalization scope of the findings of present research.

4. The researcher developed only multiple choice questions rather than problem solving questions.
5. Although the present study was intended to employ the following steps in conducting error analysis: collecting data, identifying errors, classifying errors, explanations (analyzing source), and remediation, only four steps have been employed actually.
6. Although the present study should be experimental research, only descriptive research has been used by the researcher.

Again, future research should attempt to carry out on the other academic subjects and other Grade level. And then, it is also required to do research on other aspects of the teaching-learning process and another view on the formation of errors made by the students. Moreover, the present study is conducted a cross-sectional study rather than longitudinal study due to the available time. Furthermore, there were also lacks of observation and personal interviews. It could be qualitative style by adding the activities of qualitative study. Thus, future research should include not only a longitudinal study but also qualitative study on the error analysis to examine more specifically and more completely.

Acknowledgements

Firstly, we would like to reveal my thanks to Rector Dr. Saw Pyone Naing and Pro-Rector Dr. Myat Myat Maw, Sagaing University of Education for their permission to conduct this thesis. we want to extend my appreciation to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Sagaing University of Education) for her administrative supports, scholarly advice, valuable comments, and criticisms.

We wish to express my sincere gratitude to Dr. Moe Moe Naing (Proffessor, Department of Educational Psychology, Sagaing University of Education) for her motherly and expert academic advice we needed for successful completion of this work.

We wish to express my appreciation to Daw San San Aye (Lecturer, Department of Educational Psychology, Sagaing University of Education) for her kindly guidance, precious advice, valuable comments, and suggestions for the completion of this paper successfully.

References

- Aderonmi, T.N. (2014). Diagnosing Error Patterns of Physics Students in Solving Problems using Progressive Wave Equation (PWE) in Senior Secondary Schools in River State, Nigeria. *ARPN Journal of Science and Technology*, 4 (4), 277-281.
- Adeyemo, S. (2010). Teaching/Learning of Physics in Nigerian Secondary Schools: The Curriculum, Transformation, Issues, Problems and Prospects. *International Journal of Educational Research and Technology*. 1 (1), 90-111.
- Ajayi, K. O., Lawani, A.O. & Muraina, K.O. (2011). Students Mock Examination Results as a Predictor of Students' Performance in Senior Secondary School Certificate Examination Results in Ogun State, Nigeria. *European Journal of Scientific Research*, 49 (3), 421-425.
- Akanbi, A. (2001). The Challenge of Physical Education in the 21st Century. *Journal of vocational and technological studies* 1 (3), 42-45.
- Balogon. T. A (1982). Science, Society and Science Teaching Effectiveness in Nigeria *Journal of STAN* 21: 14-20.
- Bichi, S. S. (2002). The Effect of Gender on Academic Achievement in Evolution concepts among Secondary School Students using Problem-solving Instructional Strategy. *Zaria Journal of Studies in Education*, 3(1) 132-138.
- Chamundeswari, S. (2014). Conceptual Errors Encountered in Mathematical Operations in Algebra among Students at the Secondary Level. *International Journal of Innovative Science, Engineering & Technology*, 1 (8), 24-38.
- Changeiywo J.M, W.P. (2011). Investigations of Students' Motivation towards learning Secondary School Physics through Mastery Learning Approach, International. *Journal of Science and Mathematics Education*, 9, 1333-1350.
- Cheng-Fei-Lai. (2012). *Error Analysis in Mathematics*. Eugene: Behavioral Research and Teaching.

- Corder. S.D. (1967), The significance of Women Errors. *International Review of Applied Linguistics*, Vol.5, No.4 p 162-163.
- Ekwueme C.O. & Ali A. (2013). Process Error and Students' Academic Achievement in Senior Secondary Certificate Examination in Mathematics in Nigeria. *Journal of Emerging Trends in Educational Research and Policy Studies* (JETERAPS), 3 (4):600-603 jeteraps.scholarlinkresearch.org.
- Ekwueme, C.O. and Nenty, J.H. (2001). Common Errors and Performance of Students in Junior Secondary three Mathematics Certificate Examinations in Cross River State, Nigeria. *Global Journal of Pure & Applied Science*, 7 (3):591- 596.
- ERIC. (2002). *Diagnostic Assessment*. Retrieved November 3, 2003, from <http://www.defs.gov.uk/readwriteplus/learningInfrastructure>.
- Esther O. O. and Abdulrasaq O.A. (2013). Analysis of errors committed by Physics Students in Secondary Schools in Ilorin Metropolis, Nigeria, *Act Didactica Napacensia* 6,1, 55-60.
- Fatuma Mutai, K.G. (2015). Errors Committed by Male and Female Students in Physics Examination in Secondary Schools of Nandi South Sub-County. *Asian Journal of Educational Research*, 49-56.
- Halloun I. and Hestenes. (1985). Common sense concept about Motion. *American Journal of Physics* (53), 1056-1069.
- Huba, M.E., & Freed, J.E. (2000). *Learner-centered assessment on college campuses: Shifting the focus from teaching to learning*. Boston: Allyn And Bacon.
- Inekwe, O. I. (1984), Error Analysis in the solution processes of literal Equations, Unpublished M.Ed. Thesis, Department of Education, A.B.U Zaria.
- Jabbarifar, T. (2009). The Importance of Classroom Assessment and Evaluation in Educational System. *Proceedings of the 2nd International Conference of Teaching and Learning (ICTL 2009)*. (pp.1-7). Malaysia: INTI University College.
- Joshi, P.N., & Mehendale, M. (2011). *Identifying Learning Difficulties and Types of Error Patterns in Basic Arithmetic Skills Made by Primary School Students*. Golden Research Thoughts.
- Kellough, R.D. and Kellough, N.G. (1999). A Primer: Diagnostic, Formative, & Summative Assessment. Retrieved November 10, 2003 from <http://www.mmrwsjr.com/assessment.htm>(2003).
- Kim, E. and Pack, S.J. (2001). Students do not overcome Conceptual Difficulties after Solving 1000 traditional problems. *American Journal of Physics*. 70, 7.
- Kolawole, E.B. (2007). Effect of Compleitive and Collaboration Learning Strategies in Academic Performance of Nigeria Students in Mathematics. *Educational Research Review*, 3 (1), 33-37.
- Kroll, B.M., & Schafer, J.C. (1978). *Error Analysis and the Teaching of Composition*.
- Matz, M. (1982). *Towards a process model for school algebra error*. In D.Sleeman and J.S. Brown (Eds.), *Intelligent tutoring systems* (pp. 25-50). New York: Academic Press.
- Melle, B.O. (1996), Identification of Errors type in Chemistry among Pre-services Nigeria Certificate in Education Teachers. Unpublished PhD. Thesis submitted to Department of Education Ahmadu Bello University Zaria.
- NCTM. (1995). *Assessment Standard: The Mathematics Assessment Standard*. Retrieved September23,2013,from <http://www.fayar.net/east/teacher.web/math/standards/previous/assstds/Purpindex.htm>
- Newman M.A. (1997). An Analysis of Sixth Grade Pupils Errors in Written Mathematics Tasks. *Victorian Institute for Educational Research bulleting*, 39, 31-43.
- Nwagbo, C. and Uzoamaka, C.C. (2011). Effects of Biology Practical Activities on Students' Process Skill Acquisition. *Journal of Science Teachers' Association of Nigeria* 46 (1), 58.
- Nworgu, B.G., Ugwuanyi C.S., Nworgu, L.N. (2014). School location and Gender as factors in Senior Secondary School Students' Conceptual understanding of Forces and Motion. *International Journal of Educational Research and Technology* 4(4), 71-76.
- Nworgu, B.G. (1988). Gender and Content Interaction in Physics Achievement and the Discrepancies in Gender differences in Science Achievement. *Institute Journal of studies in education* 1 (1), 119-122.
- Ye' Lin Kyaw. (2017). Analysis of Error Patterns in Primary Mathematics Learning. Yangon University of Education.

MULTIPLE INTELLIGENCES AND INTERPERSONAL PROBLEM SOLVING OF GRADE 9 STUDENTS FROM PATHEINGYI TOWNSHIP

Htay Htay Win¹, Tint Swe²

Abstract

The main purpose of this study is to investigate multiple intelligences and interpersonal problem solving of Grade 9 students from Patheingyi Township. A total of 1000 Grade 9 students (500 males and 500 females) were selected from Patheingyi Township. Multiple intelligences inventory developed by Walter McKenzie (1999) was used to measure multiple intelligence. As a research instrument for measuring interpersonal problem solving, interpersonal problem solving inventory developed by Chen, Lin and Liu (2007) was used. Data analysis was done by applying descriptive data analysis, independent sample *t* test. According to the independent sample *t* test results, there was a significant difference at 0.001 level in multiple intelligences of Grade 9 students by gender. The result of independent sample *t* test showed that there was a significant difference at 0.001 level in interpersonal problem solving of Grade 9 students by gender. It may be due to appropriate strategies and procedures they choose for solving and one differ in relation to the circumstances or contexts in which this problem exists.

Keywords: Intelligence, Multiple Intelligences, Problem Solving, Interpersonal Problem Solving

Introduction

In today's education, intelligence is the most important single variable which affects success in school and life. In general terms intelligence means the manner in which an individual deals with facts and situations. Intelligence is the aggregate or the global capacity of the individual to act purposefully, to think rationally, and to deal effectively with the environment (Anitha, Vennessa, & Sreelakshmi, 2013). Gardner (1993) suggested human beings have evolved to exhibit several bits of intelligence that work in concert and not in isolation in a particular cultural setting or community. Armstrong (1999) believed that it is rare for an individual to achieve high levels of competence for more than five multiple intelligences, although an individual might strongly identify with various multiple intelligences, which are uniquely expressed in that person's life. Gardner (1999) argued that although leaders have different strengths and weaknesses, they exhibit several multiple intelligences. Gardner believes that leaders demonstrate a generous degree of linguistic intelligence, interpersonal intelligence, and intrapersonal intelligence. In other words, Gardner postulated that promising leaders have the gift of followership, demonstrate a strong sense of self, display effective communication skills, and have an eloquent way of helping others understand their life situations (Wilson, S.D, n.d.).

And also, problem solving abilities are important for educational area because a healthy society or a healthy nation can only maintain its existence by adopting themselves into new conditions by problem solving abilities. Thus, problem solving is important for every field of life in order to lead a happy and healthy life. When some has important talents and strengths solving the interpersonal problems, others are experiencing deficiencies in that matter. Interpersonal problem solving has been described as an interpersonal and cognitive process which is aiming to determine a solution on a conflict or disagreement and appropriate for all the individuals included in it. The interpersonal problem solving ability provides the social and emotional accords of people by solving the problems (Saygin, Y., Akdeniz, S. & Deniz, E.M, 2015).

¹ Senior Assistant Teacher, Basic Education High School Ohmchaw, Patheingyi

² Associate Professor, Department of Educational Psychology, Sagaing University of Education

Aims of the Study

The main aim of this study is to investigate multiple intelligences and interpersonal problem solving of Grade 9 students from Patheingyi Township. The specific objectives are:

1. to explore multiple intelligences of Grade 9 students from Patheingyi Township.
2. to study multiple intelligences of Grade 9 students by gender and subject combination.
3. to investigate interpersonal problem solving of Grade 9 students from Patheingyi Township.
4. to examine interpersonal problem solving of Grade 9 students by gender and subject combination.
5. to investigate the relationship between multiple intelligences and interpersonal problem solving of Grade 9 students.

Definitions of Key Terms

- Intelligence** : The ability to use memory, knowledge, experience, understanding, reasoning, imagination and judgment in order to solve problems and adapt to new situations (All Words Dictionary, 2006 cited in Legg, & Hutter, 2006).
- Multiple Intelligences** : Multiple intelligences refer to the ways to adopt the situation by their own way (Geeta, & Gupta, 2017).
- Problem Solving** : Problem solving refers to the ability to use knowledge, facts, and data to effectively solve problem (Richardson, 2009).
- Interpersonal Problem Solving** : It is a facet of social and emotional learning that influences social cognition, adjustment and competence (Masten, & Coatsworth, 1998 cited in Richardson, 2009).

Review of Related Literature

Everyone possesses a unique intelligence. It allows them to accomplish certain tasks easily (Gardner, 1983). The present educational system has placed too much emphasis on traditional learning, without paying attention to an individual's unique intelligence. Multiple intelligences/learning is geared toward each student's learning and understanding in his/her own unique ability. Learners become motivated and empowered through their uniqueness with multiple intelligences (cited in Jefferson, 2007).

Intelligence is associated with performance on a wide range of cognitive tasks and is a reliable predictor for educational and professional success. (Buschkuehl & Jaeggi, 2010). Intelligence is a complex process, but ultimately the process contains order. The order stems from the nature of the external world. The brain, or mind, contains it's kind of internal order. The basic premise here is that the internal model must contain useful representations of the external world (Yaworsky, 2018).

People encounter various problems throughout their lives and these problems may arise in different forms and types. These problems in the lives of individuals can arise in personal, family and social settings. Interpersonal relationships are one of the most important types of these problems (Arslan, 2009 cited in Koc & Araslan, 2017).

Interpersonal relationships begin and develop through communication. The quality of communication has a direct impact on the quality of the interpersonal relationships. And the quality of these interpersonal relationships often affects how they feel about themselves; it's easy to understand why effective communication in interpersonal relationships is so important (cited in Erozkhan, 2013).

Today, more than in the past, one of the most important objectives of education is to foster students' competences related to problem-solving (Barak, 2013). Problem-solving is important in honing students' thinking, flexibility and creativity. It also encourages cooperative skills, and is useful in allowing students to apply the knowledge learned to different situations (cited in Palraj, Witt & Alias, 2017). The problems that are faced in interpersonal relationships affect individuals quite deeply and stand as one of the most important issues in their lives.

Human life also becomes meaningful with these problems and their solution. Heppner and Krauskopf (1987) described interpersonal problem solving as the cognitive, emotional, and behavioral responses required to overcome the necessities stemming from his own and his environment (cited in Koc & Araslan, 2017).

Method

The survey method and descriptive research design were taken to examine multiple intelligences and interpersonal problem solving in this study.

Sampling

The participants of the study were Grade 9 students from selected Basic Education High Schools from Patheingyi Township in the academic year of 2019-2020. The total 1000 of Grade 9 students were randomly selected as the sample of the study.

Instruments

To study multiple intelligences of Grade 9 students, an instrument developed by Walter McKenize (1999) was used. Multiple intelligences inventory consists of nine subscales and this self-report questionnaire included 94 items. Moreover, the interpersonal problem-solving inventory developed by Chen, Lin and Liu (2007) was used. There are 21 items in this inventory. Likert type and each followed by four responses: strongly agree, agree, disagree and strongly disagree were used. The numerical values, 4,3,2,1 were assigned for the responses in the case of statements. According to the results of pilot testing, the internal consistency reliability with Cronbach's alpha for the multiple intelligences was .899 and interpersonal problem solving was .591. This instruments were found valid and reliable for this study.

Findings

This study was to investigate multiple intelligences and interpersonal problem solving of Grade 9 students from Patheingyi Township. Descriptive statistics was used to find out mean and standard deviation. And then, independent sample *t* test was used to explore differences by gender and subject combination. Finally, the relationship between multiple intelligences and interpersonal problem solving was examined by Pearson's Product Moment Correlation.

Table 1 Descriptive Statistics for Multiple Intelligences of Grade 9 Students

Multiple Intelligences	No. of items	N	Minimum	Maximum	Mean	Mean %	Std. Deviation
Naturalistic intelligence	10	1000	16	40	32.02	80.05	4.26
Logical-Mathematical intelligence	10	1000	15	40	29.27	73.18	4.21
Verbal-Linguistic intelligence	10	1000	12	40	28.56	71.40	4.58
Musical intelligence	10	1000	12	40	29.62	74.05	5.78
Visual-Spatial intelligence	10	1000	13	40	28.64	71.60	4.86
Bodily-Kinesthetic intelligence	13	1000	20	52	38.97	74.94	5.63
Interpersonal intelligence	12	1000	18	48	36.85	76.77	5.17
Intrapersonal intelligence	15	1000	25	60	46.08	67.80	6.23
Existential intelligence	4	1000	4	16	11.79	73.69	2.35

Based on the descriptive statistics for Multiple Intelligences of Grade 9 Students are shown in Table 1, the mean percent of naturalistic intelligence (80.05%) is the highest among the multiple intelligences. It can be said that naturalistic intelligence area is more dominant than the others. Then the mean percent of interpersonal intelligence (76.77%) is the second highest. Therefore, the children interest more in science-related areas (e.g. geology, biology, geography, and so on). Besides, the participants are very good at personal skills. They have a lot of friends; show a great deal of empathy for other people and an understanding of different points of view. In other words, most of the Myanmar children are relatively high in social skills, being able to actively participate in such group discussion and cooperative learning strategies enhancing child-centered approach. Later, they are likely to be high in emotional intelligence (EI) due to the concept of EI also strongly overlaps with Gardner's notion of personal intelligence (Mayer et al., 2000 cited in Matthews et al., 2004). Moreover, the mean percent of intrapersonal intelligence (67.80%) had the lowest. It may be that they are unaware of their own feelings and are not self-motivated.

Table 2 Comparison of Independent Sample *t* test for Multiple Intelligences of Grade 9 Students by Gender

Multiple Intelligences	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Naturalistic intelligence (NI)	Male	500	32.81	3.25	5.97***	998	.000	1.58
	Female	500	31.23	4.95				
Logical- Mathematical intelligence (MI)	Male	500	29.79	3.86	3.93***	998	.000	1.04
	Female	500	28.75	4.47				
Verbal-Linguistic intelligence(VI)	Male	500	28.71	4.21	1.04	998	.297	.30
	Female	500	28.41	4.92				
Musical intelligence(MUI)	Male	500	30.24	5.55	3.40**	998	.001	1.24
	Female	500	29.01	5.95				
Visual-Spatial intelligence (SI)	Male	500	29.16	4.61	3.35**	998	.001	1.02
	Female	500	28.13	5.05				
Bodily-Kinesthetic intelligence(BI)	Male	500	40.08	4.72	6.37***	998	.000	2.22
	Female	500	37.86	6.21				
Interpersonal intelligence (II)	Male	500	37.96	4.05	6.92***	998	.000	2.21
	Female	500	35.75	5.88				
Intrapersonal intelligence(INI)	Male	500	46.62	5.22	2.75**	998	.006	1.11
	Female	500	45.54	7.06				
Existential intelligence(EI)	Male	500	12.13	2.10	4.59***	998	.000	.13
	Female	500	11.46	2.53				

Table 2 showed that gender differences were found in each intelligence area respectively. The mean scores of male students were higher than female students in each intelligence area. According to the results of *t* test on the multiple intelligences by gender; it was found that there were significant differences in naturalistic, logical- mathematical, bodily-kinesthetic, interpersonal and existential intelligence at 0.001 level. Besides, it was also found that there were significant differences in musical, visual-spatial, and intrapersonal intelligence at 0.01 level. There was no significant difference in verbal-linguistic intelligence. It implied that both male and female students had similar verbal-linguistic intelligence. And then, both male and female students can perceive the visual world accurately and perform modifications and transformations upon the initial perceptions.

Table 3 Comparison of Independent Sample *t* test for Multiple Intelligences of Grade 9 Students by Subject Combination

Multiple Intelligences	Subject Combination	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Naturalistic intelligence	Combination 1	500	32.42	3.29	2.998**	998	.003	.80
	Combination 7	500	31.61	5.01				
Logical-Mathematical intelligence	Combination 1	500	29.65	3.94	2.874**	998	.004	.76
	Combination 7	500	28.89	4.44				
Verbal-Linguistic intelligence	Combination 1	500	28.91	4.07	2.387*	998	.017	.69
	Combination 7	500	28.22	5.01				
Musical intelligence	Combination 1	500	29.81	5.41	1.039	998	.299	.38
	Combination 7	500	29.43	6.13				
Visual-Spatial intelligence	Combination 1	500	28.80	4.44	1.041	998	.298	.32
	Combination 7	500	28.48	5.25				
Bodily-Kinesthetic intelligence	Combination 1	500	39.53	4.83	3.157**	998	.002	1.12
	Combination 7	500	38.41	6.28				
Interpersonal intelligence	Combination 1	500	37.50	4.17	4.002***	998	.000	1.30
	Combination 7	500	36.20	5.93				
Intrapersonal intelligence	Combination 1	500	46.66	5.28	2.945**	998	.003	1.16
	Combination 7	500	45.51	7.01				
Existential intelligence	Combination 1	500	12.01	2.24	2.962**	998	.003	.44
	Combination 7	500	11.71	2.43				

Table 3 showed that the mean comparison, standard deviation, and the results of *t* test on the multiple intelligences by subject combination. It was found that the combination 1 students were higher than the combination of 7 students in each intelligence area. Moreover, in terms of the results of sample *t* test, there was a significant difference in interpersonal intelligence at 0.001 level and were significant differences in naturalistic, logical-mathematical, bodily-kinesthetic, intrapersonal intelligence, and existential intelligence at 0.01 level. However, there was no significant difference among other categories. It may be that combination 1 students appreciate scenic destinations, possess the ability to solve problems logically and systematically manner. Moreover, they can understand and interact effectively with others. But, both combination 1 and 7 students enjoy good music.

Table 4 Descriptive Statistics for Interpersonal Problem Solving of Grade 9 Students

Variable	N	Number of Items	Minimum	Maximum	Mean	SD
Interpersonal Problem Solving	1000	21	28	84	61.59	9.67

Table 4 showed that the mean score and standard deviation for the overall sample were 61.59 and 9.67 respectively. Since the total mean score was higher than the theoretical mean score. So, the interpersonal problem solving of Grade 9 students was satisfactory.

Table 5 Descriptive Statistic for Interpersonal Problem Solving of Grade 9 Students by Gender

Variable	Gender	N	Mean	SD
Interpersonal Problem Solving	Male	500	63.67	7.32
	Female	500	59.51	11.18

Table 5 showed that the mean score for interpersonal problem solving of the male was 63.67 and that of female was 59.51. The standard deviations were 7.32 and 11.18 for both Grade 9 students. Based on a higher mean score, it can be assumed that male students had high interpersonal problem solving in comparison to female students.

Table 6 Comparison of Independent Sample *t* test for Interpersonal Problem Solving of Grade 9 Students by Gender

Variable	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	MD
Interpersonal Problem Solving	Male	500	6.962***	998	.000	4.16
	Female	500				

Note: ***The mean difference is significant at the 0.001 level.

According to the result of *t* test, there was a significant difference in interpersonal problem solving according to gender. It may be that male students can cope with and resolve the everyday stressful problem that is strongly related to a person than female students.

Table 7 Descriptive Statistic for Interpersonal Problem Solving of Grade 9 Students by Subject Combination

Variable	Subject Combination	N	Mean	SD
Interpersonal Problem Solving	Combination 1	500	63.27	7.41
	Combination 7	500	59.92	11.26

As mentioned in Table 7, the mean scores of Grade 9 students were 63.27 and 59.92 respectively. The mean score of interpersonal problem solving for Grade 9 students in combination 1 was slightly higher than that of combination 7 students.

Table 8 Comparison of Independent Sample *t* test for Interpersonal Problem Solving of Grade 9 Students by Subject Combination

Variable	Subject Combination	N	<i>t</i>	<i>df</i>	<i>p</i>	MD
Interpersonal Problem Solving	Combination 1	500	5.562***	998	.000	3.35
	Combination 7	500				

Note: ***The mean difference is significant at the 0.001 level.

According to *t* test results, there was a significant difference in interpersonal problem solving by the subject combination. Therefore, results revealed a significant effect of the subject combination on interpersonal problem solving. It may be that students in combination 1 could fulfill social roles on others and to form and maintain healthy and rewarding relationships with one another.

To explore the relationship between multiple intelligences and interpersonal problem solving, Pearson Product-Moment Correlation was applied (see Table 9).

Table 9 Inter-correlation between Multiple Intelligences and Interpersonal Problem Solving of Grade 9 Students

	NI	MI	VI	MUI	SI	BI	II	INI	EI	IPS
NI	1									
MI	.501**	1								
VI	.567**	.600**	1							
MUI	.418**	.304**	.472**	1						
SI	.495**	.572**	.608**	.451**	1					
BI	.562**	.514**	.609**	.608**	.618**	1				
II	.601**	.543**	.605**	.510**	.574**	.659**	1			
INI	.403**	.453**	.559**	.287**	.547**	.574**	.553**	1		
EI	.110**	.099**	.217**	.123**	.174**	.140**	.254**	.201**	1	
IPS	.571**	.515**	.525**	.394**	.517**	.551**	.583**	.424**	.108**	1

Note: ** Correlation is significant at the 0.01 level (2-tailed).

According to the results of Table 9, all subscales of the multiple intelligences had significant positive relationship with interpersonal problem solving at 0.01 level. The correlation between the interpersonal problem solving and multiple intelligences was moderate. It can be seen that the students who high in multiple intelligences do well in interpersonal problem solving.

Conclusion and Suggestion

This study was conducted in 2019-2020 academic years to explore basic education high school students' multiple intelligences and interpersonal problem solving. Based on the finding of the data analysis; the results of the study were described in this section.

Firstly, the mean and standard deviation of multiple intelligences was computed by using descriptive data analysis. The result indicated that the mean score of intrapersonal intelligence is the highest among the multiple intelligences but existential intelligence is the lowest among them. It may be that the students studied science subjects and so they can undertake self-reflection, awareness of their feelings, and thinking process.

According to the mean comparison of multiple intelligences between males and females, it was found that there was a significant difference in each subscale of multiple intelligence except for verbal-linguistic intelligence. It can seem that both male and female students had similar verbal-linguistic intelligence. Most students enjoy reading, playing word games, getting into the involved discussion, debating, and telling a joke. This result was consistent with the research of Anitha, Dr. Vannessa and Sreelakshmi (2013), and Dr.Moe Moe Naing (2008) that also found male was higher than female.

In terms of the result of the *t* test, there was significant difference in multiple intelligences according to subject combinations. It can be concluded that students in combination 1 had higher multiple intelligences than students in combination 7. It may be that a combination of 1 student had a knowledge acquisition component, a higher-order component, and the ability to encounter the demands daily.

To explore the difference in interpersonal problem solving by gender, an independent sample *t* test was used. The result showed that there was a significant difference between male and female students. The result was inconsistent with the research of Derin and Serin (2011 cited

in Ozus, Celikozb, Tufana and Erdena, 2014) that found no difference between male and female students. The total mean score of male student's interpersonal problem solving was higher than that of female students. It may be that male students can find solutions to their problems in a peaceful way that has the effect of new developments instead of traditional methods like ignoring the problem and showing rebellious behaviors.

There was significant difference in interpersonal problem solving according to subject combination at 0.001 level. Therefore, combination 1 students had better interpersonal problem solving than combination 7 students. The possible reason may be that students can think democratic, creative, productive, critical, multiple thinking, learn the learning, respect to the people, having tolerance to the people, having responsibility, and also can solve the problems effectively.

To know the relationship between multiple intelligences and interpersonal personal problem solving of Grade 9 students, correlation analysis was used. The result was $r = .681$, $p < 0.01$ and so there was positive correlation between multiple intelligences and interpersonal problem-solving. Therefore, it can be concluded that if the Grade 9 students' multiple intelligences was higher, their interpersonal problem solving would be better. It can be conducted future research based on the findings of this study by using a larger sample size of students from Basic Education High Schools in Myanmar. Further study should explore middle school students' multiple intelligences and interpersonal problem-solving. Besides, it needs to investigate Grade 9 students' multiple intelligences and interpersonal problem solving by using other demographic factors. Moreover, it will be conducted by case study and interview to explore the relationship between multiple intelligences and interpersonal problem solving. Multiple intelligences and interpersonal problem solving are more important for both teachers and students because individuals should have the problem-solving ability for adapting the social life and change. It is essential to have good multiple intelligences and interpersonal problem solving that lead to a successful life. So, all students need to have good intelligence and interpersonal problem solving for all-around development. This study imported that interpersonal problem solving is a matter which effects on multiple intelligences of Grade 9 students.

Acknowledgements

We would like to offer special gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) for their permission to conduct this work. We would like to express my special thanks to Chairperson, Dr. Khin Hnin Nwe (Professor / Head of Department, Department of Educational Psychology, Sagaing University of Education) and Dr. Moe Moe Naing (Professor, Department of Educational Psychology, Sagaing University of Education) for their warm and kind- heart supports and invaluable suggestions, unwavering love, and accessibility during my research work.

References

- Anitha, T. S, Dr. Vannessa, J and Sreelakshmi, G. (2013). A study on the multiple intelligence levels of Secondary school students of Government and Private schools in Secunderabad. IOSR Journal of Research & Method in Education (IOSR-JRME) e-ISSN: 2320-7388, p-I. Retrieved July 12, 2019, from <http://www.iosrjournals.org/iosr-jrme/papers/Vol-3%20Issue-4/C0341218.pdf?id=7370>
- Buschkuehl, M and Jaeggi, S.M. (2010). Improving Intelligence: a Literature Review. Swiss Med Wkly 2010; 140 (19 – 20): 266-272 • www. smw. Ch. Retrieved August 21, 2019, from https://www. streetdirectory. com/travel_guide/13057/education/15_secrets_to_boost_your_iq_in_less_than_30_days.html
- Chen, F. S, Lin, Y. M and Liu, M. H. (2007). The Development of an Inventory to assess the Problem-Solving Attitude of Industrial High School Students. World Transactions on Engineering and Technology Education © 2007 UICEE Vol.6, No.1, 2007,173. Retrieved July 18, 2019, from <https://www. scribd. com/doc/67905634/Problem-Solving-Style-Questionnaire>

- Chinaveh, M. (2010). Training Problem-Solving to Enhance Quality of Life: Implication towards Diverse Learners. Retrieved October 17, 2019, from <https://pdf.sciencedirectassets.com/277811/1-s2.0-S1877042810X0012X/s2.0S187704281002046X/main.pdf?X-Amz-Security>
- Dr. Moe Moe Naing. (2008). *A Preliminary Analysis of Multiple Intelligence*.
- Erozkan, A. (2013). The Effect of Communication Skills and Interpersonal Problem Solving Skills on Social Self-Efficacy. Retrieved September 16, 2019, from <https://files.eric.ed.gov/fulltext/EJ1017303.pdf>
- Jefferson, W. C. (2007). The Implementation of Multiple Intelligences in the Classroom to Enhance Student Learning. Retrieved September 21, 2019, from <https://core.ac.uk/download/pdf/5067051.pdf>
- Koc, H. and Arslan, C. (2017). Analyzing Interpersonal Problem Solving in Terms of Solution Focused Approach and Humor Styles of University Student. Retrieved December 16, 2019, from <https://pdf.sciencedirectassets.com/277811/1-s2.0-S1877042814X00364/1-s2.0-S1877042814044048/main.pdf?X-Amz-Security>
- Legg, S and Hutter, M. (2006). A Collection of Definitions of Intelligence. IDSIA, Galleria 2, Manno-Lugano CH-6928, Switzerland shane@idsia.ch. Retrieved July 12, 2019, from https://int.search.myway.com/search/GGmain.jhtml?n=78591057&p2=%5EY6%5Expv788%5ETTAB03%5Emm&ptb=CABE4D91-D56D-47AC-B85B9618C374C50D&q=si=EAIAIqobChMIozD_oG_5QIVjEcrCh2gtgB_EAEYASAAEGJpavD
- Matthews, G., Zeidner, M., & Robert, R. (2004). *Emotional Intelligence: Science and Myth*, London: Massachusetts Institute of Technology.
- McKenzie, W. (1999). Multiple Intelligences (M.I.) Inventory. Retrieved July 18, 2019, from <https://www.kerstens.org/alicia/planning10/Multiple%20Intelligences%20Inventory.pdf>
- Ms. Geeta, N and Dr.Gupta, S.M. (2017). A Study of Multiple Intelligences of Secondary School Students of Jodhpur City of Rajasthan State. International Journal of Research in all Subjects in Multi Language Vol. 5, Issue: 8, August: 2017 (IJRSML) ISSN: 2321 – 2853. Retrieved September 12, 2019, from https://int.search.myway.com/search/GGmain.jhtml?n=78591057&p2=%5EY6%5Expv788%5ETAB03%5Emm&ptb=CABE4D91-D56D-47AC-B85B-9618C374C50D&q=si=EAIAIqobChMIozD_oG_5QIVjEcrCh2gtgB_EAEYASAAEGJpavD_BwE&ss=sub&st=tab&trs=wt&tr=sb
- Ozus, E.E., Celikoz, M, Tufana, M. and Erdena, F. (2014). Interpersonal Problem Solving Abilities of Students of Professional Education Faculty Dressing Programme of Selcuk University. Retrieved November 14, 2019, from https://www.researchgate.net/publication/277949745_Interpersonal_Problem_Solving_Abilities_of_Students_of_Professional_Education_Faculty_Dressing_Programme_of_Selcuk_University
- Palraj, S., Witt, D.D., and Alias, N. (2017). Teachers Beliefs in Problem Solving in Rural Malaysian Secondary Schools. Retrieved October 28, 2019, from <https://www.mojet.net/frontend/articles/pdf/v5i4/v05i04-04pdf.pdf>
- Richardson, D.L. (2009). Evaluation of Interpersonal Problem Solving Skills Program for Pre School and Elementary Children. Retrieved September 14, 2019, from <https://www.google.com/search?q=EVALUATION+OF+INTERPERSONAL+PROBLEMSOLVINGSKILLS+PROGRAM+FOR+PRESCHOOL+ANDELEMENTARY+CHILDRENByDEBORAH+L.+RICHARDSON&ie=utf-8&oe=utf-8>
- Saygın,Y., Akdeniz,S and Deniz, M.E. (2015). Loneliness and Interpersonal Problem Solving as Predictors of Subjective Well-Being. International Journal of Information and Education Technology, Vol. 5, No. 1, January 2015. Retrieved September 23, 2019, from <https://pdfs.semanticscholar.org/941f/572a31b9a6e3d2f719f6e3c2b48173b0ac9b.pdf>
- Wilson, S.D. (n.d.). The Relationship between Leadership and Multiple Intelligences with the 21st Century's Higher Education Faculty. Journal of Applied Business and Economics vol.11 (3). Retrieved July 26, 2019, from <https://int.search.myway.com/search/GGmain.jhtml?p2=%5EY6%5Expv788%5ETTAB03%5Emm&ptb=CABE4D91-D56D-47AC-B859618C374C50D&n=78591057&cn=>
- Yaworsky, P. (2018). A Model for General Intelligence. Information Directorate Air Force Research Laboratory Rome, New York 13441 November 14, 2018. Retrieved September 10, 2019, from <https://arxiv.org/ftp/arxiv/papers/1811/1811.02546.pdf>

LOCUS OF CONTROL AND JOB SATISFACTION OF TEACHER EDUCATORS FROM EDUCATION COLLEGES

Lei Yin Win¹, Pa Pa Nyein²

Abstract

The main aim of this study is to examine locus of control and job satisfactions of teacher educators from Selected Education Colleges in Upper Myanmar. Quantitative research design and survey method were applied for this study. The sample of this study were 475 teacher educators from eleven Education Colleges in Upper Myanmar. Locus of control questionnaire and teachers' job satisfaction questionnaire were used. In this study, descriptive statistics, independent sample *t* test, one-way analysis of variance (ANOVA) and Pearson-moment Correlation were used to analyze the data. According to the result of this study, there were significant differences in locus of control by age and teaching experience. The (30-39) age group teacher educators had higher in locus of control than (40-49) age and over 50 age groups. Moreover, the (1-9) year group had greater in locus of control than over 20 years. But, there was no significant difference in locus of control of teacher educators according to education level and marital status of teacher educators. In addition, there was significant difference in job satisfaction by age. The (30-39) age group teacher educators had the highest mean score than other age groups. Furthermore, there was no significant difference in job satisfaction by educational level, teaching experience and marital status of teacher educators. Pearson correlation ($r = 0.531$, $p < 0.01$) revealed that the overall locus of control was positively correlated with job satisfaction. According to the findings of this study, teacher educators with high internal locus of control are more satisfied in job.

Keywords: Locus of control, Internal Locus of Control, External Locus of Control, Job Satisfaction

Introduction

Almost all human beings always strive for satisfaction in every aspect of life. But in the organizational context, this may be related to striving towards securing a good job, with a good pay and high job satisfaction. Satisfaction with job has always been an important aspect for practitioners, human resource managers and academicians because of the reason that job satisfaction significantly affects major organizational outcomes, such as individual performance, organizational productivity, employee absenteeism, employee commitment, job involvement, employee engagement and employee turnover (Gangai et al., 2016).

Since most of the working hours are spent at work, it is imperative to find out the various factors that determine job happiness. Evidently, it is all about the gap between reality and expectations, but the issue seems to be much more complicated than it appears. According to many researchers the type of locus of control an individual carries has an effect on the level of job satisfaction (Vijayashree & Jagdishchandra, 2011). Judge (1997) supported the direct impact of locus of control on individual behaviors that impact job performance and job satisfaction in the workplace.

Purpose of the Study

The purpose of the study is to investigate locus of control and job satisfactions of teacher educators from selected Education Colleges in Upper Myanmar.

Definition of Key Terms

Locus of Control: The concept of locus of control refers to a generalized belief that a person can or cannot control his or her own destiny (Rotter, 1966).

¹ Lecturer, Department of Educational Psychology, Sagaing Education College

² Assistant Lecturer, Department of Educational Psychology, Sagaing University of Education

Internal Locus of Control: Internal locus of control refers to an individual's belief that an event or outcome is contingent on his or her own behaviour or on relatively permanent characteristics such as ability (Stipek & Weisz, 1981).

External Locus of Control: The belief that an event is caused by factors beyond the individual's control (e.g, luck, task difficulty, powerful other) has been labelled as external locus of control (Stipek & Weisz, 1981).

Job satisfaction: Job satisfaction refers to the employees' perceptions of their working environment, relations with colleagues, institution aims and strategies and success criteria (Belias & Koustelios, 2014).

Review of Related Literature

Rotter's Social Learning Theory

In social learning theory, Rotter (1966) emphasized that behavior is influenced not only by the reinforcement itself, but more importantly by the individual's perception of the relationship between his/her behavior and the reinforcement. Rotter's theory of locus of control places an individual on a spectrum between internal and external (Miller, 2005). According to Rotter, "locus of control," therefore, refers to whether an individual can acquire a reinforcement through his/her own abilities and efforts (i.e., internals), or if it flows from un-controllable external factors (i.e., externals) (Stewart, 2012).

Theories for Job Satisfaction

Hierarchy Needs Theory

Hierarchy Needs Theory was one of the oldest theories of job satisfaction. Abraham Maslow (1970) has classified human needs into seven broad categories. They are Physiological needs, Security and safety needs, Social and belonging needs, Self-esteem, Cognitive needs Aesthetic needs and Self-actualization.

Herzberg's Two-Factor Theory

Two Factor Theory proposed by Herzberg et al. (1959) was based on need fulfillment and satisfaction of workers. It is also known as the motivator-hygiene theory because Herzberg categorized main two factors that are Hygiene factors and Motivation factors (Tin May Htwe, 2019). The first one result is into increasing job satisfaction but the second one result is into decreasing job dissatisfaction. Herzberg stated in his theory that some features of a job are related to job satisfaction (motivators or intrinsic factors) while, others are related to job dissatisfaction (hygiene or extrinsic factors). Motivation factors such as achievement, recognition, the job itself, responsibility, promotion and growth are those factors, which stand above and beyond hygiene factors. These factors provide more productivity and inspiration to workers for achieving organization goals. However, hygiene factors are those basic things that people consider important for every kind of job like salary, bonus, work environment, supervision, social relations, policies and strategies. According to Herzberg, these factors are not motivators, but when they do not exist, they could hurt the moral of workers as well as this kind of work atmosphere will lead to low productivity (Alemi, 2014).

Method

The method used in this study was quantitative research design and survey method.

Sampling

Teacher educators from eleven Education Colleges in Upper Myanmar were chosen as the participants of the study. This study involved 475 teacher educators. The sample of the teacher educators were identified by using simple random sampling method.

Instruments

In this study, the key instrument used to measure locus of control was developed by Terry Petition (1992). The instrument for locus of control was composed of 20 items. The instrument used to measure teachers' job satisfaction was developed by Beheshta Alemi (2014). The instrument used to measure teachers' job satisfaction was composed of 6 subscales (Job in general, Supervision, Opportunity for Promotion, Colleagues, Salary and Bouns, Work environment). These 6 subscales were composed of 13 items for job in general and 8 items for opportunity for promotion supervision and 9 items for opportunity for promotion and 7 items for colleagues and 5 items for salary and bouns and 10 items for work environment. Response to the items of both questionnaires was based on a five-point Likert-scale. The reliability coefficient of the instruments was 0.69 for locus of control and 0.87 for teachers' job satisfaction, indicating that the instruments were reliable tools for this study.

Findings

Descriptive Statistics for Locus of Control of Teacher Educators

After collecting the data concerned with locus of control of teacher educators, the descriptive statistics were computed to analyze data. The results of analysis were described in Table 1.

Table 1 Descriptive Statistics for Locus of Control of Teacher Educators

Variable	N	Minimum	Maximum	Mean	SD
Locus of Control	475	62	96	77.02	6.177

As shown in Table 1, the result showed that the minimum and maximum of locus of control of teacher educators were 62 and 96. Moreover, the mean and standard deviation for the whole sample were 77.02 and 6.177 respectively. Thus, it can be interpreted that locus of control of the teacher educators were satisfactory.

Differences in Locus of Control of Teacher Educators by Age

In order to examine whether there exists the age differences within locus of control, descriptive statistics and one way ANOVA were calculated. Table 2 displayed mean and standard deviation for locus of control of teacher educators by age.

Table 2 Descriptive Statistics for Locus of Control of Teacher Educators by Age

Variable	Age	N	Mean	SD
Locus of Control	(20-29)	106	77.49	5.848
	(30-39)	145	78.50	6.596
	(40-49)	131	75.73	5.984
	50 and above	93	76.00	5.634

According to Table 2, the (30-39) age group teacher educators had the highest mean score 78.50 in locus of control. The (40-49) age group teacher educators had the lowest mean score 75.73.

To explore the significant difference of locus of control by age specifically, one way analysis of variance was conducted. The results of the analysis were displayed in Table 3.

Table 3 The Results of One Way ANOVA for Locus of Control of Teacher Educators by Age

Variable		Sum of Squares	df	Mean Square	F	p
Locus of Control	Between Group	656.358	3	218.786	5.912**	0.001
	Within Group	17430.388	471	37.007		
	Total	18086.746	474			

Note: **The mean difference is significant at 0.01 level.

Table 3 indicates that a statistically significant difference was found among four levels of age on locus of control ($F= 5.912$, $p=0.001$) at 0.01 level.

To investigate more specifically how much teacher educators' locus of control differed among their age groups, the Post Hoc Test was carried out by Tukey *HSD* method. The results were shown in the following Table 4.

Table 4 Result of Tukey (HSD) Test Multiple Comparison of Locus of Control of Teacher Educators by Age

Variable	Age (I)	Age (J)	Mean Difference (I-J)	p
Locus of Control	(20-29)age	(30-39) age	-1.013	0.562
		(40-49) age	1.758	0.122
		Over 50	1.491	0.312
	(30-39) age	(20-29) age	1.013	0.562
		(40-49) age	2.771**	0.001
		50 and above	2.503*	0.011

Note: *The mean difference is significant at 0.05 level.

Note: **The mean difference is significant at 0.01 level.

As shown in Table 4, the result revealed that it was significantly different between (30-39) age and (40-49) age at 0.01 level. Thus, it can be interpreted that (30-39) age group was higher in locus of control than (40-49) age group. Moreover, the result revealed that there was a significant difference in locus of control between (30-39) age and 50 and above group. However, there was no significant difference between the other groups of age. Thus, there was age effect on teacher educators' locus of control. This result is inconsistent with the findings of Richardson (1987) that older teachers are more likely to be internals.

Differences in Locus of Control of Teacher Educators by Education Level

In order to study whether there was a significant difference in locus of control by education level, independent sample *t* test was used. The results of descriptive statistics and independent sample *t* test were shown in Table 5.

Table 5 Comparison of Mean, Standard Deviation and the Result of *t* Test for Locus of Control by Education Level

Variable	Education Level	N	Mean	SD	t	df	p
Locus of Control	Bachelor degree	172	76.57	6.053	-1.206	473	0.228
	Master degree and above	303	77.28	6.242			

According to the results of Table 5, there was no significant difference in locus of control between Bachelor degree and Master degree and above teacher educators. Thus, this result is inconsistent with the result of Jeloudar and Lotifi-Goodorzi (2012). It can be concluded that there was no effect on locus of control of teacher educators by their education level.

Mean Comparison in Locus of Control of Teacher Educators by Teaching Experience

To find out the differences of teacher educators' locus of control by teaching experience, descriptive statistics and one way analysis of variance (ANOVA) were conducted. Table 6 displayed mean and standard deviation for locus of control scores of teacher educators by teaching experience.

Table 6 Descriptive Statistics of Locus of Control of Teacher Educators by Teaching Experience

Variable	Teaching Experience	N	Mean	SD
Locus of Control	(1-9) year	171	78.05	6.150
	(10-19) year	183	76.55	6.491
	20 year and above	121	76.29	5.556

According to Table 6, the (1-9) year group had the highest mean score 78.05 in locus of control. Teacher educators who had 20 years, teaching experience and above teacher educators had the lowest mean score 76.29. The mean score of (10-19) year group was slightly higher than those of 20 years and above. To find out the differences of teacher educators' locus of control according to teaching experience, one way analysis of variance was conducted. The result can be seen in Table 7.

Table 7 ANOVA Result for Locus of Control of Teacher Educators by Teaching Experience

Variable		Sum of Squares	df	Mean Square	F	p
Locus of Control	Between Group	284.987	2	142.493	3.778*	0.024
	Within Group	17801.759	472	37.716		
	Total	18086.746	474			

Note: *The mean difference is significant at 0.05 level.

Table 7 indicates that a statistically significant difference was found according to teaching experience on locus of control ($F= 3.778$, $p=0.024$) at 0.05 level. It can be interpreted that there was an effect on locus of control by teaching experience.

To investigate more specifically how much teacher educators' locus of control differed in relation to their teaching experience, the Post Hoc Test was carried out by Tukey *HSD* method. The results were shown in the following Table 8.

Table 8 Result of Tukey (HSD) Test Multiple Comparison of Teacher Educators' Locus of Control by Teaching Experience

Variable	Teaching Experiences (I)	Teaching Experiences (J)	Mean Difference (I-J)	p
Locus of Control	(1-9) years	(10-19) years	1.495	0.058
		over 20 years	1.758*	0.043
	(10-19) years	(1-9) years	-1.495	0.058
		over 20 years	0.263	0.929
	20 years and above	(1-9) years	-1.758*	0.043
		(10-19) years	-0.263	0.929

Note: *The mean difference is significant at 0.05 level.

Post Hoc Tukey (*HSD*) Test revealed that the (1-9) years group teacher educators were significantly higher in locus of control than 20 years and above group. Thus, the result revealed that teacher educators whose teaching experience was (1-9) years were higher in locus of control than those of 20 years and above. However, there was no significant difference between other

levels of teaching experience. This result is similar with the findings Demirkasimoglu et al., (2012).

Differences in Locus of Control of Teacher Educators by Marital Status

In order to study whether there was a significant difference in locus of control between married and single teacher educators, descriptive statistics and independent sample *t* test were used. The results were shown in Table 9.

Table 9 Comparison of Mean, Standard Deviation and the Result of *t* Test on Locus of Control of Teacher Educators by Marital Status

Variable	Marital Status	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Locus of Control	Married	169	76.38	5.902	-1.677	473	0.094
	Single	306	77.38	6.306			

Note: *The mean difference is significant at 0.05 level.

According to the results of Table 9, there was no significant difference in locus of control between married and single teacher educators. This result is similar with the findings Asiedu-Appiah and Addai (2014). It can be concluded that there was no effect on locus of control of teacher educators by marital status.

Descriptive Statistics for Job Satisfaction of Teacher Educators

After collecting the data concerned with job satisfaction of teacher educators, the descriptive statistics were computed to analyze data. The results of analysis were described in Table 10.

Table 10 Descriptive Statistics for Job Satisfaction (JOBS) of Teacher Educators

Variable	N	Minimum	Maximum	Mean	SD
Job Satisfaction	475	146	255	194.47	13.309

According to Table 10, the minimum and maximum score for job satisfaction of teacher educators were 146 and 255 respectively. The mean score of teacher educators' job satisfaction was 194.47 with standard deviation 13.309. Thus, it can be seen that teacher educators' job satisfaction was high and satisfactory.

Table 11 Descriptive Statistics for Subscales of Job Satisfaction of Teacher Educators

Subscales	No of Item	N	Minimum	Maximum	Mean	Mean %	SD
Job in General (JG)	13	475	32	65	48.75	75	5.357
Supervision (S)	8	475	18	40	29.98	74.95	3.550
Opportunity for Promotion (OP)	9	475	24	45	33.18	73.73	3.219
Colleagues (C)	7	475	17	35	26.75	76.43	2.869
Salary and Bonus (SB)	5	475	10	25	19.30	77.2	2.783
Work Environment (WE)	10	475	23	50	36.50	73	4.013

The descriptive statistics for job satisfaction of teacher educators was shown in Table 11. The mean percent and standard deviation for the subscales of job satisfaction was shown in Table 11. According to the above table, salary and bonus had the highest mean percent 77.2 and the standard deviation of 2.783. This result revealed that teacher educators were able to satisfy themselves in their salary and bonus. As mentioned in Table 11, work environment had the lowest mean percent 73 and the standard deviation of 4.013. Thus, teacher educators' satisfaction about work environment was lower than other subscales.

Differences in Job Satisfaction of Teacher Educators by Age

The descriptive statistics and one-way analysis of variance (ANOVA) were conducted. The result was shown in Table 12.

Table 12 Comparison of Descriptive Statistics and ANOVA Results of Job Satisfaction (JOBS) of Teacher Educators by Age

Variables	under 29age		(30-39)age		(40-49)age		50 and above age		F	df	p
	Mean	SD	Mean	SD	Mean	SD	Mean	SD			
JG	49.44	5.263	49.11	5.484	48.13	5.267	48.28	5.331	1.642	3,471	0.179
S	30.01	3.845	30.24	3.489	29.76	3.321	29.86	3.637	0.461	3,471	0.710
OP	32.90	3.123	33.39	3.363	33.02	3.350	33.40	2.909	0.731	3,471	0.534
C	26.77	3.278	27.41	3.013	26.47	2.567	26.09	2.316	4.768	3,471	0.003
SB	19.33	2.930	19.84	2.748	18.93	2.681	18.95	2.708	3.144	3,471	0.025
WE	36.49	3.808	36.74	4.623	35.91	3.732	36.98	3.529	1.566	3,471	0.197
JOBS	194.94	12.940	196.74	13.849	192.23	13.140	193.55	2.685	2.869	3,471	0.036

Note: *The mean difference is significant at 0.05 level.

According to Table 12, under 29 age group teacher educators had the highest mean score 49.44 in job in general. (30-39) age group teacher educators had the highest mean score 30.24 in supervision, opportunity for promotion, colleagues, salary and bonus and work environment. (30-39) age group teacher educators had the highest mean score 196.74 in overall job satisfaction. (40-49) age group teacher educators had the lowest mean score 192.23 in overall job satisfaction.

Table 12 indicates that statistically significant differences were found among levels of age on colleagues ($F=4.768$, $p=0.003$) at 0.05 level and on salary and bonus ($F=3.144$, $p=0.025$) at 0.05 level. And the statistically significant difference was found among levels of age on overall job satisfaction ($F=2.869$, $p=0.036$) at 0.05 level. This result was similar with the findings of Vanlawma (1987). Thus, in this study, it can be interpreted that teacher educators' job satisfaction depends on their age.

To investigate more specifically how much teacher educators' job satisfaction differed in relation to level of age, the Post Hoc Test was carried out by Tukey *HSD* method.

Table 13 Result of Tukey (HSD) Test Multiple Comparison of Job Satisfaction of Teacher Educators by Age

Variable	Age (I)	Age (J)	Mean Difference (I-J)	p
C	(30-39) age	under 29 age	0.640	0.291
		(40-49) age	0.941*	0.031
		50 years and above age	1.328*	0.003
SB	(30-39) age	under 29 age	0.511	0.470
		(40-49) age	0.910*	0.033
		50 years and above age	0.895	0.071
JOBS	(30-39) age	under 29 age	1.795	0.713
		(40-49) age	4.509*	0.025
		50 years and above age	3.190	0.268

Note: *The mean difference is significant at 0.05 level.

The result revealed that it was significantly different between (30-39) age group and (40-49) age group at 0.05 level in colleagues. It was significantly different between (30-39) age group and 50 years and above age group at 0.05 level in salary and bonus. And then, it was significantly different between (30-39) age group and (40-49) age group at 0.05 level in job satisfaction. Thus, the result revealed that teacher educators that their age was (30-39) age had higher in job satisfaction than (40-49) age group. However, there was no significant difference between other levels of age. This result is inconsistent with the findings of Marry and Raj (2005), Solomon and Muhammad (2010).

Mean Comparison in Job Satisfaction of Teacher Educators by Education Level

In order to study whether there was a significant difference in job satisfaction of teacher educators by education level, independent sample *t* test was used. The results were shown in Table 14.

Table 14 Comparison of Mean and the Result of *t* Test for Job Satisfaction of Teacher Educators by Education Level

Variables	Bachelor Degree		Master Degree and Above		<i>t</i>	<i>df</i>	<i>p</i>
	Mean	SD	Mean	SD			
JG	48.30	4.976	49.01	5.553	1.900	1,473	0.169
S	29.81	3.234	30.08	3.719	0.655	1,473	0.419
OP	33.08	2.988	33.25	3.347	0.356	1,473	0.551
C	26.59	2.635	26.84	2.994	0.823	1,473	0.365
SB	18.99	2.873	19.48	2.720	3.295	1,473	0.070
WE	36.55	3.816	36.48	4.126	0.035	1,473	0.853
JOBS	193.31	11.786	195.13	14.076	2.058	1,473	0.152

According to Table 14, master degree and above teacher educators had the highest mean score in job in general (49.01), supervision (30.08), opportunity for promotion (33.25), colleagues (26.84) and salary and bonus (19.48). Bachelor degree teacher educators had the highest mean score 36.55 in work environment. Master degree and above teacher educators had the highest mean score 195.13 in overall job satisfaction.

According to the results of Table 14, there was no significant difference in all subscales between bachelor degree and master degree and above teacher educators. Moreover, there was no significant difference in job satisfaction between bachelor degree and master degree and above teacher educators. This result is similar with the findings of Dowell (1985), Khan, and Kord (2009). It can be concluded that there was no effect on job satisfaction of teacher educators by education level.

Differences in Job Satisfaction of Teacher Educators by Teaching Experience

It was assumed that there was teaching experience effect on job satisfaction of teacher educators. Table 15 displayed descriptive statistics and ANOVA result for job satisfaction of teacher educators by teaching experience.

Table 15 Comparison of Descriptive Statistics and ANOVA results of Job Satisfaction of Teacher Educators by Teaching Experience

Variables	(1-9) Year		(10-19) Year		20 Years and Above		F	df	p
	Mean	SD	Mean	SD	Mean	SD			
JG	49.51	5.139	48.23	5.759	48.46	4.930	2.801	2,472	0.062
S	30.16	3.518	29.86	3.715	29.92	3.353	0.355	2,472	0.701
OP	33.19	3.079	33.18	3.576	33.17	2.848	0.001	2,472	0.999
C	27.05	3.179	26.81	2.901	26.23	2.239	3.000	2,472	0.051
SB	19.47	2.762	19.36	2.869	18.97	2.671	1.245	2,472	0.289
WE	36.67	3.798	36.36	4.602	36.48	3.314	0.278	2,472	0.757
JOBS	196.06	12.539	193.80	15.120	193.23	11.150	1.993	2,472	0.137

According to Table 15, (1-9) year group teacher educators had the highest mean score 49.51 in all subscales of job satisfaction. (1-9) year group teacher educators had the highest mean score 196.06 in job satisfaction. 20 years and above group teacher educators had the lowest mean score 193.23 in job satisfaction.

According to Table 15, there were no significant differences in all subscales of job satisfaction. Moreover, there was no statistically significant difference in overall job satisfaction by teaching experience. This result is similar with the findings of Mary and Raj (2005), Sridevi (2011) and Bhayana (2012).

Differences in Job Satisfaction of Teacher Educators by Marital Status

In order to study whether there was a significant difference in job satisfaction between married and single teacher educators, independent sample *t* test was used. The results were shown in Table 16.

Table 16 Comparison of Mean and the Result of *t* Test for Job Satisfaction of Teacher Educators by Marital Status

Variables	Married		Single		<i>t</i>	df	<i>p</i>
	Mean	SD	Mean	SD			
JG	48.83	5.132	48.71	5.485	0.054	1,473	0.817
S	30.02	3.638	29.96	3.506	0.034	1,473	0.854
OP	33.51	3.192	33.00	3.224	2.830	1,473	0.093
C	26.70	2.846	26.78	2.885	0.072	1,473	0.789
SB	19.41	2.857	19.24	2.744	0.389	1,473	0.533
WE	36.44	3.897	36.54	4.081	0.065	1,473	0.799
JOBS	194.92	13.937	194.22	12.965	0.296	1,473	0.586

According to Table 16, married teacher educators had the highest mean score 48.83 in job in general, 30.02 in supervision, 33.51 in opportunity for promotion and 19.41 in salary and bonus. Single teacher educators had the highest mean score 26.78 in colleagues. Single teacher educators had the highest mean score 36.54 in work environment. Married teacher educators had the highest mean score 194.92 in overall job satisfaction.

According to the results of Table 16, there was no significant difference in all subscales between married and single teacher educators. And then, there was no significant difference in job satisfaction between married and single teacher educators. This result is similar with Bhuyan and Choudhary (2003), Mohammad and Haque and Rashid (2013) and Getahun et al (2016). It can be concluded that there was no significant difference in job satisfaction of teacher educators by marital status.

The Relationship between Locus of Control and Job Satisfaction of Teacher Educators

To investigate the relationship between Locus of Control and Job Satisfaction, the Pearson Product-Moment Correlation was conducted. The results were shown in Table 17.

Table 17 Intercorrelation between Locus of Control and Job Satisfaction of Teacher Educators

Variables	LOC	JG	S	OP	C	SB	WE	JOBS
LOC	-							
JG	0.521**	-						
S	0.199**	0.260**	-					
OP	0.270**	0.242**	0.170**	-				
C	0.350**	0.272**	0.189**	0.205**	-			
SB	0.306**	0.256**	0.184**	0.230**	0.259**	-		
SB	0.209**	0.231**	0.265**	0.228**	0.219**	0.328**	-	
JOBS	0.531**	0.712**	0.572**	0.546**	0.545**	0.572**	0.636**	-

Note: **Correlation is significant at 0.01 level (2-tailed).

Table 17 showed that the correlation between locus of control and job satisfaction of teacher educators. The result revealed that locus of control is positively correlated with overall job satisfaction ($r=.531$, $p<0.01$). The strength of correlation is rather strong. Thus, it can be interpreted that the teacher educators with high internal locus of control had better job satisfaction. It was agreed with the finding of Hans et al (2014).

Conclusion

Based on the above results, there was a significant difference in locus of control by age. (30-39) age teacher educators were higher in locus of control than (40-49) age and 50 years and above. The reason is that (30-39) age is the age level that individuals may fairly achieve in their career as well as education. Thus, they may have a belief that their efforts will lead to success. Moreover, the older teachers feel that they exercise less control over the affairs of their life and career throughout their life history.

In this study, there was no significant difference in locus of control of teacher educators by their education level. The cause of this result may be the fact that both groups of teachers may have similar experience and expectation to get their respective degrees and almost equal prior success history.

Moreover, the ANOVA result, there was a significant difference in locus of control by teaching experience. According to the result of Tukey Test for locus of control of teacher educators among (1-9) year was higher in locus of control than 20 years and above. This may be due to the fact that teachers with years of service of over 20 years may experience some uncontrolled situations throughout their long work experience.

Furthermore, in this study, there was no significant difference in locus of control between married and single teacher educators. This may be due to the fact that single teacher educators may have the struggles to strive for their success in life like the married teachers experience.

And then, there was significant difference in job satisfaction by age. (30-39) age group teacher educators have more satisfied in their job than (40-49) age group teacher educators. In other words, the younger teacher educators had higher in job satisfaction than older teacher educators. This may be due to the fact that the younger teacher educators are fresh, energetic and active persons with high expectations and they may also have some success in job. Hence, they felt more satisfied about job.

In this study, there was no significant difference in locus of control by educational level. The teacher educators in both educational levels may have fair and satisfactory job progress and work life balance in education colleges and this may lead to be equal satisfaction about job.

Moreover, the ANOVA result, there was no significant difference in job satisfaction by teaching experiences. This result may be due to the fact that all levels of service can participate in the similar teacher training program of education colleges and they may equally have the reasonable and acceptable opportunities in promotional aspects and professional advancement.

Furthermore, in this study, there was no significant difference in job satisfaction between married and single teacher educators. The reason for this result may be the fact that both single and married teachers may have almost equal opportunities for promotion and other working conditions in education colleges.

Pearson correlation revealed that the overall locus of control was positively correlated with job satisfaction. It can be concluded that teacher educators with high internal locus of control are more satisfied in job. Different studies (Judge et al., 2001, John et al., 2002, Dayo, 2012, Aghaei et al., 2013) had reported similar results with the finding of this study.

Based on the results of this study, teacher educators should be given more responsibility for taking decisions related to their profession, especially in their fields. Policymakers in education should replace some old policies in the case of promotion. They need to consider ways how to reduce the workload of teacher educators and how to provide enough holidays to them. Teacher educators should be provided the opportunity to promote their quality in teaching profession with appropriate training programs and workshops. The older teachers with more service should be given some opportunities and benefits for their personal growths. The principals should make an effort to ensure that their relationships with teachers are cordial to promote job satisfaction.

Therefore, the results of the study indicate that locus of control plays an important role in job satisfaction.

Acknowledgements

We would like to offer respectful appreciation to Dr. Saw Pyone Naing, Rector, Sagaing University of Education, Dr. MyatMyat Thaw, Pro-Rector, Sagaing University of Education, Dr. KhinHnin New, Professor and Head of Department of Educational Psychology, Sagaing University of Education, and Dr. Moe Moe Naing, Professor, Department of Educational Psychology, Sagaing University of Education for their encouragement, administrative supports, official permission, and providing facilities throughout the research. We would like to express our indebtedness to principals and teacher educators from Selected Education Colleges in Upper Myanmar for their permission to conduct this study.

References

- Aghaei, M., Asadollahi, A., Moezzi, A. D., Beigi, M., & Parvinnejad, F. (2013). The relation between personality type, locus of control, occupational satisfaction and occupational exhaustion and determining the effectiveness of stress inoculation training (SIT) on reducing it among staffers of Saipa Company. *Research Journal of Recent Science*, 2(12), 6-11.
- Alemi, B. (2014). "Job Satisfaction among Afghan Teacher Educators". A study of Job Satisfaction in four Teacher Training Colleges in northern Afghanistan. Retrieved July 20, 2019.
- Asiedu-Appiah & Addai (2014). An Investigation into the Causal Relationship between Employees' Locus of Control and Contextual Performance. ASBBS Annual Conference: Las Vegas. Proceedings of ASBBS, Volume 21, No. 1. Retrieved Dec 20, 2019.
- BEd Second Year (First Semester) Textbook, (2019). Department of Educational Psychology, Sagaing University of Education.
- Belias, D., & Koustelios, A. (2014). Organizational Culture and job satisfaction: A review. *International Review of Management and Marketing*, 4(2), 132-149.

- Dayo. I. A. (2012). Locus of control and job satisfaction as predictors of Perceived non-teaching staff's productivity in higher institutions in Ogun state, Nigeria, *Global Advanced Research Journal of Management and Business Studies*, 1 (6), 181-187.
- Demirkasimoglu, N., Aydin, I., Erdogan, C., & Akin, U. (2012). Organizational rules in schools: Teachers' opinion and functions of rules, rule-following and breaking behaviors in relation to their locus of control. *Educational Studies*, 38(2), 235-247. doi:10.1080/03055698.2011.598674.
- Gangai et al., (2016). "Association between Locus of Control and Job Satisfaction in Employees": A Critical Review. *The International Journal of Indian Psychology*, Volume 3, Issue 2, No.10. Retrieved July 20, 2019, from <http://www.ijip.in> | January - March, 2016
- Getahun et al., (2016). Teacher's Job Satisfaction And Its Relationship With Organizational Commitment In Ethiopian Primary Schools: Focus On Primary Schools Of Bonga Town. *European Scientific Journal May 2016 edition* vol.12, No.13 ISSN: 1857 – 7881(Print) e - ISSN1857- 7431. URL:[http:// dx.doi.org/10.19044/esj.2016.v12n13p380](http://dx.doi.org/10.19044/esj.2016.v12n13p380)
- Herzberg et al., (1959). *The Motivation to Work* (2nded.). New York: John Wiley and Sons Inc.
- Jeloudar, S.Y. and Lotfi-Goodarzi, F. (2012) "Predicting Teachers' Locus of Control and Job performance among MA and BA Teachers Senior Secondary Schools". *International Journal of Humanities and Social Science*, 2(12), 242- 258.
- John Salazar, Susan Hubbard & Leta Salazar (2002) found that internal/external locus of control impacts job satisfaction.
- Judge, T.A., & Bono, J.E. (2001). Relationship of core self-evaluations traits— self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A met-analysis. *Journal of Applied Psychology*, 86(1): 80-92.
- Miller, J. (2005). The impact of locus of control on minority students. A Research Paper submitted in Partial Fulfillment of the Requirements for the Master of Science Degree in Guidance and Counseling, Graduate School, University of Wisconsin-Stout.
- Mohammad, T. A., Haque, M. M. & Rashid, A.C. (2013). Gender, marital status and job satisfaction an empirical study. *International Review of Management and Business Research*, 2(2), 488-498.
- Richardson, A. G. (1987). Age and sex differences in locus of control among student teachers. *College Student Journal*, 21(2), 118-120.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80(1), 1-28.
- Rotter JB. (1966). Generalized expectancies of internal versus external control of reinforcements. *PsycholMonogr* 80(1):1-28. doi: 10.1037/h0092976.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80: Whole no. 609.
- Stewart, T. (2012). Undergraduate honersservice-learning& effects on locus of control. *Journal of Service-learning in Higher Education*, 1, May, ISSN 2162-6685.
- Tin May Htwe, (2019). "Teachers' Job Satisfaction in Education College" for the complement of Master of Public Administration (MPA). University of Economics, Meiktila.
- Vanlawma, T (1987). A Study of Job Satisfaction and Adjustment among the High School Teachers of Aizawl Town, Dissertation submitted in partial fulfilment of MA (Education) Degree.
- Vijayashreem, L. & Jagdishchandra, M.V. (2011). "Locus of Control and Job Satisfaction: Psu Employees". *Serbian Journal of Management* 6 (2), 193 - 203. Retrieved July 20, 2019, from <http://www.sjm06.com>

FAMILY ENVIRONMENT AND HARDINESS OF STUDENTS FROM EDUCATION COLLEGES IN UPPER MYANMAR

Hnin Ei Zin¹, Khaing Nyein Thant²

Abstract

The main aim of this study is to investigate the family environment and hardiness of students from education colleges in Upper Myanmar. A total of 1000 first year students (Male = 460, Female = 540) from Education Colleges in Upper Myanmar were randomly selected as participants of this study. The instruments were the Family Environment Scale (FES) developed by Moos and Moos (1994) and Hardiness Scale (HS) developed by Maddi et al. (2006). According to the result of descriptive statistics, it was found that most of the students from education colleges in Upper Myanmar perceived their family environment as satisfactory and their hardiness level was high. The result of *t* test showed that there was significant difference in total family environment and its dimensions by gender. Female students perceived their family environment better than male ones. The result of *t* test showed that there was no significant difference in family environment by locality but for its dimensions, there was significant difference in relationship dimension by locality. Students from rural had better relationship than those from urban. For hardiness, the result of independent samples *t* test showed that there was significant difference in hardiness by gender. Female students had higher hardiness than male ones. Moreover, it was also found significant difference in hardiness by locality. Rural students from education colleges in Upper Myanmar had higher hardiness than urban ones. And the result of correlation analysis revealed that there was statistically significant positive correlation between family environment and hardiness ($r = .457$, $p < .01$). So, it can be concluded that the better family environment students had, the higher hardiness they possessed.

Keywords: Family Environment, Hardiness, Commitment, Control, Challenge

Introduction

Importance of the Study

Family environment is considered as a system where the behavior and relationship among all family members is interdependent. Family environment is the core process of every child upbringing, with positive and negative influences. Family environment is the situation good or bad seen in the family and have some effects on the children (Nancy & Asir, 2014). So, the family environment involves the circumstances and social climate conditions within families (Rao, 2012). Since each family is made up of different individuals in a different setting, each family environment is unique. The family environment can differ in many ways.

Family environment provides the foundation for children to develop both cognitive and affective components of pro-social behavior, such as social relatedness and empathy (Plomin, 1977). The family environment maintains its importance for the psychological development of the child (Dasgupta & Sain, 2015).

According to Cash (2011), hardiness is a set of beliefs and attitudes that people bring to the situation which affects how the situation is perceived and what is done to manage the situation. Hardiness was a personality characteristic, which Kobasa defined as having three component parts, commitment, control, and challenge (Kobasa, 1977).

The person who has a higher level of commitment believes in the significance of who he is and what he does. Those who show higher levels of control believe in the predictability and controllability of life events; they think they can affect what happens around them through their efforts. People who have higher levels of challenge look at the negative or positive situations that

¹ Lecturer, Department of History Methodology, Monywa Education Degree College

² Dr, Lecturer, Department of Educational Psychology, Sagaing University of Education

demand adjustment as a chance for learning and growth rather than a threat against their safety and comfort (Kobasa, 1979; Maddi, 1990).

Researches done by Kobasa (1979) indicated that facing the life problems, people with lower levels of hardiness show stronger emotional reactions and in the long run receive the greatest share of suffering from the psychological pressures while those with higher levels of hardiness stay healthy dealing with the same pathogenic conditions.

Aim of the Study

The main aim of this study is to investigate family environment and hardiness of students from education colleges in Upper Myanmar. The specific objectives are:

1. To examine family environment of students from education colleges in Upper Myanmar by gender and locality,
2. To investigate dimensions of family environment by gender and locality,
3. To study hardiness of students from education colleges in Upper Myanmar by gender and locality, and
4. To investigate relationship between family environment and hardiness of students from education colleges in Upper Myanmar.

Definitions of Key Terms

Family environment is the perception each member has of his/her family, which the social-family atmosphere is resulting from the relationship, personal growth, organizations and control of the family system (Moos & Moos, 1994).

Hardiness is a personality construct composed of three traits- commitment, control and challenge- there are theorized to make one resilient in the face of stress (Kobasa, 1979).

Commitment is the tendency to feel deeply involved in the life experiences (Maddi, 1982).

Control is the tendency to believe that one can influence his life experiences (Maddi, 1982).

Challenge is the tendency to consider changes as opportunities to learn and grow (Maddi, 1982).

Review of Related Literature

According to Ahmadi (2007), family is a small social group consisting mostly of fathers, mothers and children with relatively fixed social relationships and is based on blood, marriage and/ or adoption bonds. The family is the primary unit through which customs, beliefs, habits, values, and modes of behavior are transmitted from one generation to the next through the process of socialization (Saraswathi & Dutta, 2011). It is the basic and important unit of society because of the role it plays in generation of human capital resources and the power that is vested in it to influence individual, households, and community behavior (Sriram, 1993).

Model of Family Environment by Moos and Moos (1994): They defined the family environment as the perception each member has of his/her family, i.e. the social family atmosphere resulting from the relationship, personal growth organization and control of the family system. Moos and Moos (1991)'s model consisted of three related dimensions of the environment: the relationship dimension, the personal growth or goal orientation dimension, and the system maintenance and change dimension. All three categories of evaluation are strength based, as they focus on finding what works well for a person within a given setting.

Hardiness Model by Maddi and Khoshaba (2003): Hardiness has been defined as a "pattern of attitudes and skills that facilitates turning adversity into opportunity, thereby enhancing performance and health". The construct of hardiness was first introduced by Kobasa (1979), who

defined it as a resistance resource in the encounter with stressful situation. It is considered as a pattern of personality characteristics comprising three mutually related dispositions-commitment, control and challenge. Individual low on hardiness will be more likely to withdraw from some life circumstances and perceive them as more threatening (Maddi, 1999). In opposition, person high on hardiness approach life demands actively and perceive that they can handle them successfully, view them as meaningful and useful, which results in less stressful experience (Maddi, 1990).

Methodology

Research Design and Method

In this study, quantitative approach and descriptive survey design was used.

Participants of the Study

By using simple random sampling technique, the participants for the present study were first year students who were randomly selected from five education colleges located in Upper Myanmar. All of the participants involved in this study 1000 first year students (460 males and 540 female) in (2019-2020) academic year.

Table 1 Participants of the Study

No.	Colleges	Number of Students		Total
		Male	Female	
1	Myitkyina Education College	73	232	305
2	Kyaingtong Education College	17	32	49
3	Mandalay Education College	128	128	256
4	Monywa Education College	109	78	187
5	Pakokku Education College	133	70	203
Total		460	540	1000

Instrumentation

The research instruments were Family Environment and Hardiness Scale Questionnaire. The Family Environment Scale (FES) is a 90- item instrument designed to measure students' family environment. The survey instrument consisted of three dimensions; (1) Personal Growth dimension (2) Relationship dimension and (3) System Maintenance dimension. There were 27 items for relationship dimension, 45 items for personal growth dimension and 18 items for system maintenance dimension. The total items were 90 items in which 54 items were positively stated and 36 items were negatively stated. Individual students responded the questionnaire using a four-point-Likert scales, ranging from "1= Not at all true", "2= A little true", "3= Quite true" and "4= Completely true".

For hardiness, The Personal Views Survey, Third Edition-Revised (PVS III-R) (Maddi & Khoshaba, 2001a) was used. The PVS III-R was an 18-item survey. The survey instrument consisted of three dimensions; (1) commitment (2) control (3) challenge. There were 6 items for commitment dimension, 6 items for control dimension and 6 items for challenge dimension. The total items were 18 items in which 9 items were positively stated and 9 items were negatively stated. Individual students responded the questionnaire using a four-point-Likert scales, ranging from "1= Not at all true", "2= A little true", "3= Quite true" and "4= Completely true".

Data Analysis

In this study, descriptive statistics was used to identify the mean, standard deviation, frequency, maximum and minimum scores for the family environment and hardiness of students from some selected education colleges in Upper Myanmar. Then, Independent Samples *t* Test

was used to examine whether there were significant differences in the family environment and hardiness of first year students by gender and locality.

Lastly, the Bivariate Pearson Correlation was used to describe the degree and direction of relationship among family environment and hardiness of students from some selected education colleges in Upper Myanmar.

Findings

Family Environment of Students from Education Colleges in Upper Myanmar

To examine the family environment of students from education colleges in Upper Myanmar, descriptive statistics was firstly used. The result was shown in Table 2.

Table 2 Descriptive Statistics for Family Environment of Students from Education Colleges in Upper Myanmar

Variable	N	Minimum	Maximum	Mean	SD
Family Environment	1000	178	317	253.83	20.66

According to Table 2, the minimum score for family environment of students from some selected education colleges in Upper Myanmar was 178 and the maximum score was 317. Then, mean and standard deviation of students from some selected education colleges in Upper Myanmar for family environment were 253.83 and 20.66 respectively.

Since the present study found that mean score for family environment of students from some selected education colleges in Upper Myanmar was (253.83) while the highest possible score from Family Environment Scale was (360), it can be concluded that family environment of students from education colleges in Upper Myanmar was satisfactory.

Comparison for Family Environment of Students from Education Colleges in Upper Myanmar by Gender

To examine the difference in family environment of students from education colleges in Upper Myanmar by gender, descriptive statistics was firstly used. The result was shown in Table 3.

Table 3 Descriptive Statistics for Family Environment of Students from Education Colleges in Upper Myanmar by Gender

Variable	Gender	N	Mean	SD
Family Environment	Male	460	250.55	21.03
	Female	540	256.64	19.95

In Table (3), for family environment, it was found that the mean score for family environment of female students from education colleges in Upper Myanmar (256.64) was greater than that of male ones (250.55) with a mean difference (6.09).

Moreover, to be more specific, the independent samples *t* test was used to examine significant mean difference in family environment of students from education colleges in Upper Myanmar by gender. The result was shown in Table 4.

Table 4 Results of Independent Samples *t* Test for Family Environment of Students from Education Colleges in Upper Myanmar by Gender

Variable	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	MD
Family Environment	Male	460	-4.69 ***	998	.000	-6.09
	Female	540				

Note: *** Significance at the 0.001 level.

According to the result of *t* test, it was found that there was significant difference in family environment of students from education colleges in Upper Myanmar by gender at 0.001 level ($t = -4.69$, $p = .000$). Therefore, it can be concluded that female students from education colleges in Upper Myanmar perceived their family environment better than male ones.

Comparison for Dimensions of Family Environment by Gender

To examine the differences in dimensions of family environment among students from education colleges in Upper Myanmar by gender, descriptive statistics was firstly used. The result was shown in Table 5.

Table 5 Descriptive Statistics for Dimensions of Family Environment by Gender

Subscales	Gender	N	Mean	SD
Relationship	Male	460	70.17	6.07
	Female	540	71.56	5.74
Personal Growth	Male	460	69.03	6.36
	Female	540	70.58	6.07
System Maintenance	Male	460	70.13	8.62
	Female	540	72.63	8.51

In Table (5), for relationship dimension of family environment, it was found that the mean score for relationship of female students from education colleges in Upper Myanmar 71.56 was greater than that of male ones 70.17 with a mean differences (1.39).

For personal growth dimension of family environment, it was found that the mean score for personal growth of female students from education colleges in Upper Myanmar (70.58) was greater than that of male ones (69.03) with a mean differences (1.54).

For system maintenance dimension of family environment, it was found that the mean score for system maintenance of female students from education colleges in Upper Myanmar (72.63) was greater than that of male ones (70.13) with a mean differences (2.49).

Moreover, to be more specific, the Independent Sample *t* Test was used to examine significant mean differences in dimensions of family environment of students from education colleges in Upper Myanmar by gender. The result was shown in Table 6.

Table 6 Results of Independent Samples *t* Test for Dimensions of Family Environment by Gender

Subscales	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Relationship	Male	460	-3.74***	998	.000	1.39
	Female	540				
Personal Growth	Male	460	-3.92***	998	.000	1.54
	Female	540				
System Maintenance	Male	460	-4.59***	998	.000	2.49
	Female	540				

Note: *** Significance at the 0.001 level.

According to the result of *t* test, it was found that there were significant differences in all dimensions of family environment by gender: relationship dimension ($t = -3.74$, $p = 0.00$), personal growth dimension ($t = -3.92$, $p = .000$) and system maintenance dimension ($t = -4.59$, $p = .000$).

So, it can be concluded that female students from education colleges in Upper Myanmar perceived their family environment as better relationship, higher personal growth, and better system maintenance than male ones.

Comparison for Family Environment of Students from Education Colleges in Upper Myanmar by Locality

To examine difference in family environment of students from some selected education colleges in Upper Myanmar by locality, descriptive statistics was firstly used (See in Table 7).

Table 7 Descriptive Statistics for Family Environment of Students from Education Colleges in Upper Myanmar by Locality

Variable	Locality	N	Mean	SD
Family Environment	Rural	538	254.87	19.53
	Urban	462	252.62	21.87

In Table (7), for family environment, it was found that the mean score for family environment of rural students from some selected education colleges in Upper Myanmar (254.87) was greater than that of urban ones (252.62) with a mean difference (2.25).

Moreover, to be more specific, the Independent Sample *t* Test was used to examine significant mean difference in family environment of students from education colleges in Upper Myanmar by locality. The result was shown in Table 8.

Table 8 Results of Independent Samples *t* Test for Family Environment of Students from Education Colleges in Upper Myanmar by Locality

Variable	Locality	N	<i>t</i>	<i>df</i>	<i>p</i>	MD
Family Environment	Rural	538	1.71	998	.08	2.25
	Urban	462				

According to the result of *t* test, it was found no significant difference in family environment of students from education colleges in Upper Myanmar by locality.

Comparison for Dimensions of Family Environment by Locality

To examine the differences in dimensions of family environment by locality, descriptive statistics was firstly used. The result was shown in Table 9.

Table 9 Descriptive Statistics for Dimensions of Family Environment by Locality

Subscales	Locality	N	Mean	SD
Relationship	Rural	538	71.48	5.66
	Urban	462	70.27	6.16
Personal Growth	Rural	538	69.95	5.90
	Urban	462	69.76	6.64
System Maintenance	Rural	538	71.86	8.59
	Urban	462	71.04	8.70

In Table (9), for relationship dimension of family environment, it was found that the mean score for relationship of rural students from education colleges in Upper Myanmar (71.48) was greater than that of urban ones (70.27) with a mean differences (1.21).

For personal growth dimension of family environment, the mean score for personal growth of rural students from education colleges in Upper Myanmar (69.95) was greater than that of urban ones (69.76) with a mean differences (.19).

For system maintenance dimension of family environment, the mean score for system maintenance of rural students from some selected education colleges in Upper Myanmar (71.86) was greater than that of urban ones (71.04) with a mean differences (.82).

Moreover, to be more specific, the Independent Sample *t* test was used to examine significant mean differences in dimensions of family environment of students from education colleges in Upper Myanmar by locality. The result was shown in Table 10.

Table 10 Results of Independent Samples *t* Test for Dimensions of Family Environment by Locality

Subscales	Locality	<i>N</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Relationship	Rural	538	3.23***	998	.000	1.21
	Urban	462				
Personal Growth	Rural	538	.48	998	.62	.19
	Urban	462				
System Maintenance	Rural	538	1.50	998	.13	.82
	Urban	462				

Note: *** Significance at the 0.001 level.

According to the result of *t* test, it was found that there were no significant differences in all dimensions of family environment, except relationship dimension ($t = 3.23$, $p = 0.000$). So, it can be concluded that rural students from some selected education colleges in Upper Myanmar perceived their family environment as better relationship than urban ones.

Hardiness of Students from Education Colleges in Upper Myanmar

In this section, to examine hardiness of students from some selected education colleges in Upper Myanmar, descriptive statistics was used. Table 11 showed the results.

Table 11 Descriptive Statistics for Hardiness of Students from Education Colleges in Upper Myanmar

Variable	<i>N</i>	Minimum	Maximum	Mean	<i>SD</i>
Hardiness	1000	28	84	61.59	9.67

According to Table 11, the minimum score for hardiness of students from some selected education colleges in Upper Myanmar was 28 and the maximum score was 84. Then, mean score and standard deviation of students from some selected education colleges in Upper Myanmar for hardiness were 61.59 and 9.67 respectively.

Since the present study found that mean score for hardiness of students from some selected education colleges in Upper Myanmar was (61.59) while the highest possible score from Hardiness Scale (HS) was (72), it can be concluded that hardiness of students from some selected education colleges in Upper Myanmar was high.

Comparison for Hardiness of Students from Education Colleges in Upper Myanmar by Gender

To examine the difference in hardiness of students from some selected education colleges in Upper Myanmar by gender, descriptive statistics was firstly used. The result was shown in Table 12.

Table 12 Descriptive Statistics for Hardiness of Students from Education Colleges in Upper Myanmar by Gender

Variable	Gender	<i>N</i>	Mean	<i>SD</i>
Hardiness	Male	460	53.31	6.16
	Female	540	54.10	5.84

In Table (12), for hardiness, it was found that the mean score for hardiness of female students from some selected education colleges in Upper Myanmar (54.10) was greater than that of male ones (53.31) with a mean difference (.80).

Moreover, to be more specific, the independent samples *t* test was used to examine significant mean difference in hardiness of students from education colleges in Upper Myanmar by gender. The result was shown in Table 13.

Table 13 Results of Independent Samples *t* Test for Hardiness of Students from Education Colleges in Upper Myanmar by Gender

Variable	Gender	<i>N</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Hardiness	Male	460	-2.092*	998	.037	-.80
	Female	540				

Note: * Significance at the 0.05 level.

According to the result of *t* test, it was found that there was significant difference in hardiness of students from education colleges in Upper Myanmar by gender at 0.05 level ($t = -2.092$, $p = 0.037$). Therefore, it can be concluded that female students from education colleges in Upper Myanmar had higher hardiness than male ones.

Comparison for Hardiness of Students from Education Colleges in Upper Myanmar by Locality

To examine the difference in hardiness of students from education colleges in Upper Myanmar by locality, descriptive statistics was firstly used. The result was shown in Table 14.

Table 14 Descriptive Statistic for Hardiness of Students from Education Colleges in Upper Myanmar by Locality

Variable	Locality	<i>N</i>	Mean	<i>SD</i>
Hardiness	Rural	538	54.32	5.63
	Urban	462	53.06	6.34

In Table 14, for hardiness, it was found that the mean score for hardiness of rural students (54.32) was greater than that of urban ones (53.06) with a mean difference (1.26).

Moreover, to be more specific, the Independent Sample *t* Test was used to examine significant mean difference in hardiness of students from education colleges in Upper Myanmar by locality. The result was shown in Table 15.

Table 15 Results of Independent Samples *t* Test for Hardiness of Students from Some Selected Education Colleges in Upper Myanmar by Locality

Variable	Locality	<i>N</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Hardiness	Rural	538	3.314**	998	.001	1.26
	Urban	462				

Note: **Significance at the 0.01 level.

According to the result of *t* test, it was found that there was significant difference in hardiness of students from education colleges in Upper Myanmar by locality at 0.01 level ($t = 3.314$, $p = .001$).

Therefore, it can be concluded that rural students had higher hardiness than urban ones.

Correlation Analysis on Family Environment and Hardiness of Students from Education Colleges in Upper Myanmar

In order to explore the relationship between family environment and hardiness of students from education colleges in Upper Myanmar, the Person Product-Moment Correlation was conducted. The result was shown in Table 16.

Table 16 Correlation Matrix between Family Environment and Hardiness of Students from Some Selected Education Colleges in Upper Myanmar

Variable	Family Environment	Hardiness
Family Environment	-	.457***
Hardiness	.457***	-

*** Correlation is significant at the 0.001 level (2-tailed).

According to Table 16, it was found statistically significant positive correlation between family environment and hardiness ($r = .457$, $p = 0.00$). So, it can be concluded that the better family environment students had, the higher hardiness they possessed.

Conclusion

Family Environment of Students from Education Colleges in Upper Myanmar: It was found that family environment of students from education colleges in Upper Myanmar was satisfactory.

Hardiness of Students from Education Colleges in Upper Myanmar: It was found that hardiness of students from education colleges in Upper Myanmar was high.

Gender Difference in Family Environment Total and its Dimensions: To analyze gender differences in family environment, independent samples t test was used and the result revealed that there was significant difference in family environment with respect to gender. Female students had better family environment than male ones. In comparing with dimensions of family environment by gender, it was also found that female significantly perceived their family environment as better relationship, higher personal growth and better system maintenance than males. This finding is consistent with the studies of Nilam (2016), Lundberg (2016), Rossi and Rossi (1990), Buck and Scott (1993).

Concerning with relationship dimension, gender difference may be because females express emotions more frequently than males. Moreover, males exhibit restrictive emotionality which is the tendency to inhibit the expression of certain emotions and an unwillingness to self-disclose intimate feelings (Jansz, 2000). Thus, the above mentioned factors seem to make females have better relationship than males.

Concerning with personal growth dimension, gender difference may be because males were interested in achieving on tasks that involved impersonal ideas or inanimate objects (task oriented). In opposition, females were interested in tasks that involved interaction with people (socially oriented). That is why; females seem to possess higher personal growth than males.

In the present study, system maintenance dimension tests the household members' degree of importance of clear organization and structure in planning family activities and responsibilities. According to organismic Integration Theory (Deci & Ryan, 1995), there are three motivations, amotivation, extrinsic motivation and intrinsic motivation. Among these motivations, more intrinsic motivation led to more disciplined behaviours. According to Murcia et al., (2007), females tend to show more self-determined reasons to be disciplined and perceive others as more intrinsically motivated to maintain discipline than males. So, females seem to have higher in system maintenance than males.

Locality Differences in Family Environment and its Dimensions: To analyse locality differences in family environment of students from some selected education colleges in Upper Myanmar, independent samples *t* test was used and the result revealed that there were no significant locality differences in total family environment, personal growth dimension and system maintenance dimension, but there was significant difference in only relationship dimension. So, it can be concluded that students who lived in rural had better relationship among household members than those who lived in urban. This finding is consistent with the study of Pappattu (2017) and Manminder (2017).

This may be because rural is the homogeneous environment (Cracken & Barcinas, 2006). This seems to make rural people have a tendency to be warm and welcoming, often prepared to really get know each other.

Gender Difference in Hardiness: To analyse gender differences in hardiness, independent samples *t* test was used and the result revealed that there was significant difference in hardiness with respect to gender. It can be concluded that female students had higher hardiness than male ones. This finding is consistent with the study of Madi (2013).

This may be because; hardiness is the stress coping ability. Although females are more likely than males to report that their stress levels are on the raise, males seem to show slower chance to success in coping these stress. So males seem to have lower hardiness than females.

Locality Differences in Hardiness: To analyse locality differences in hardiness of students from education colleges in Upper Myanmar, independent samples *t* test was used and the result revealed that there was significant difference in hardiness with respect to locality. So, it can be concluded that students who lived in rural had higher hardiness among household members than those who lived in urban. This finding was consistent with the study of Manminder (2017).

This is because, rural students seem to be more stressful than urban ones, and as a consequence they may possess higher stress coping ability as the experience.

Relationship Between Family Environment and Hardiness: In order to explore the relationship between family environment and hardiness of students from some selected education colleges in Upper Myanmar, the Pearson Correlation was conducted. It was found statistically significant positive correlation between family environment and hardiness. So the better family environment the students had, the higher hardiness they may possess.

To have better family environment and higher hardiness, some suggestions were discussed for household members as follows. They should-

- Help and support one another
- Express feelings directly and openly convey anger and conflict
- Be independent and accountable
- Take discussion-time among family members concerning political, intellectual, and cultural matters
- Participate in social and recreational activities together
- Define each person's duties clearly in the household
- Have reasonable rules in the household and clearly define the consequences for obeying or breaking these rules
- Downplay and minimize the effects of change through exploring the consequences of change
- Switch inner voice from "I can't" to "I can handle it".
- Use relaxation strategies for reducing stress (e.g. Muscle relaxation, Meditation).

Acknowledgements

Firstly, we would like to offer respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education), Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) and Dr. Khin Hnin Nwe (Head of Department of Educational Psychology, Sagaing University of Education) who allowed us to do this research paper. Moreover, we would also like to thank all of students form education colleges in Upper Myanmar for their cooperation in data collection of this study.

References

- Ahmadi, A. (2007). *Sociology Pendelikon*. Jakarta: Rinka Cipta.
- Cash, M. L., & Gardner, D. (2011). Cognitive hardiness, appraisal and coping: Comparing two transactional models. *Journal of Managerial Psychology*, 26, 646-664.
- Dasgupta & Sain, (2015). The Impact of Family Environment Upon Development of Life.
- Deci, E. L. & Ryan, R. M (1995). Human autonomy: The basis for true self-esteem. In M. Kernis (Ed.), *Efficacy, agency, and self-esteem* (pp 31-94). New York: Plenum.
- Escarti, A., Roberts, G. C. & Guzman, J. F. (1999). Adolescent, goal orientations and the perceptions of criteria of success used by significant others. *International Journal of Sport and Exercise Psychology*, 30, 309-324.
- Jansz, J. (2000). Masculine identity and restrictive emotionality. In A. H. Fischer (Ed.), *Gender and Emotion: Social Psychological Perspective* (pp 166-188). Cambridge University Press.
- Kobasa, S.C., (1997). Hardiness and health: A perspective study. *Journal of Health and Social Psychology*, 42, 884-890.
- Maddi, S. R., Harvey, R. H., Khoshaba, D. M., Fazel, M., & Resurreccion, N. (2012). The relationship of hardiness and some other relevant variables to college performance. *Journal of Humanistic Psychology*, 52, 190-205.
- Manminder, K. (2017). Comparative Study of Psychological Hardiness Among Adolescents in Relation to Some Demographic Variables. *Journal for advanced research in applied sciences*. 4 (6), 47-55.
- Moos & Moos (1994) & Timko, C., *Family Environment Scale Manual: Development, applications, and Research*, (3rd Ed.).
- Nancy & Dr. Sam Deva Asir R.M (2014). A Study on Family Environment among Children of alcoholics at Chettikulam, Peramvalur District. IOSR. *Journal of Humanities and Social Scirnce (IOSSR-JHSS)*. Volume 19, Issue 7.
- Nilam, M. (2016). A Comparative Study of Family Environment of Secondary School Students of Chaka Block of Allahabad. *International Journal of Arts, Humanities and Management Studies*. 1 (10), 58-63.
- Pappattu & Vanntha (2017). A Study of Family Environment and Its Effect on Academic Achievement in Science Among Secondary School Students. *International Journal of research-Granthaalayah*. 5(6),428-436.
- Plomin, M. (1977). Genotyp-environment interaction and correlation in the analysis of human behavior. *Psychological Bulletin*.
- Rao, D. C. (2012). Influences of genes and shared family environment on adult body mass index assessed in an adoption study by a comprehensive path model.
- Rossi & Rossi (1990). *Of human bondage: parent child relations across the life course*. New York.
- Saraswathi & Dutta (2011). *Human Development in the India Context*, Volume II.
- Sriram, R. (1993). *Demographic Correlates of Individualism and Collectivism: A Study of Social Values in Sri Lanka*.

HARDINESS, SOCIAL SUPPORT AND BURNOUT OF TEACHERS FROM MOMEIK TOWNSHIP

Aye Thanda Tun¹, Khin Khin Thant²

Abstract

The main purpose of the present study is to examine hardiness, social support and burnout of teachers. This study is also conducted to investigate the significant differences in hardiness, social support and burnout of teachers by gender and position as well as the correlation of age with hardiness, social support and burnout of teachers. The sample consisted by 502 teachers. This research used descriptive research design. Data of this study were collected by administering Copenhagen Burnout Inventory developed by Kristensen, Borritz, Villadsen and Christensen (2005) for Burnout, Dispositional Resilience Scale developed by Bartone (2007) for hardiness and Revised Multidimensional Scale of Perceived Social Support developed by Ho and Chan (2017) for social support of teachers. The results revealed that the teachers from Momeik Township had moderate low level of burnout, and very high degree of hardiness and social support. It was found that there was no significant difference in burnout of teachers by gender and position. It was also found that there was no significant difference in hardiness and social support by gender while there were significant differences by position of teachers. The primary teachers revealed the significant higher degrees in hardiness and social support than the senior teachers. Next, it was found that there were significant negative correlations of age with hardiness and burnout of teachers except social support. And then, there was negative correlations between burnout and both of hardiness and social support of teachers. As last, it was found that the combination of hardiness and social support can be accounted for the level of burnout by 9.8% and teacher burnout decreased 0.524 units for each units of hardiness increased and 0.307 units for each unit of social support increased. The present study concluded that hardiness and social support are affected burnout of teachers.

Keywords: Burnout, Hardiness, Social Support

Introduction

Importance of the Study

Human service organizations are not mechanical lifeless structures; they are composed of people, people work in them and people manage those (Cherniss, 1980). Teaching is a complex and demanding profession. Teaching within the organizational context of a school places staff with diverse personalities and varying degrees of professional skill and training into situations that require frequent interaction and cooperation.

The environment of the school is frequently demanding, requiring workers to be emotionally involved with students as well as being mentally and physically challenged. The profession of teaching has historically been viewed as a labor of love. Unfortunately, the realities of classroom life have made teaching a stressful occupation. Burnout is the result of prolonged work stress. Burnout sets in when an individual's demands drain their resources.

Beside in any society, the higher the educational level in term of quality, the more the development and growth of that society will be. Teachers are the cornerstone of the educational system. Teachers are entrusted with the responsibility to educate the future leaders of tomorrow and are essential to student achievement (Murphy, Delli, & Edwards, 2004). Often blame is placed upon teachers for the problems of education today. These pressures are causing in education today.

¹ Senior Assistant Teacher, No. (1) Basic Education High School, Momeik

² Associate Professor, Department of Educational Psychology, Sagaing University of Education

In studies dating back to the 1970s, researchers have attempted to understand the many facets of teacher burnout (Freudenberger, 1974; Maslach, 1976; Vandenberghe & Huberman, 1999). Work-related burnout is a gradual process widespread among many professional and occurs in response to prolonged exposure to stress (Fernet, Guay, Senecal, & Austin, 2012). Because of work-related burnout, teachers leave their chosen profession at higher rate than do other professionals (Fisher, 2011). Yet many burned-out teachers do not retire because of their inability to use their skills in other marketable fields and the sense of defeat evoked by a loss of status (Buunk et al., 2007). With teachers demonstrating burnout behaviors remaining in the classroom, much is unknown as to their effectiveness as leaders of students and colleagues. Burned-out teachers who remain in the classroom influence the learning environment and have harmful effects on students, especially those with mental health issues (Jenning & Greenberg, 2009).

Here, the most interesting part was how burned-out teachers did cope to adapt to the stress in the profession. This process is generally formed according to whether stressful event is perceived as threats or opportunity by the individual, whether she/he has the belief of having skill for coping it or not and choosing/applying suitable coping method with it (Lazarus and Folkman, 1984). If she/he has not that belief, the teacher will experience less satisfaction in their work environment, and difficulty coping in their personal lives. According to the research by Pines and Aronson (1988) burnout is caused by our need to believe that our lives have meaning and that everything we do is useful to society and important. When the individuals who try to find meaning in their lives through their work and feel that they have failed, the result in burnout.

Then, the concepts related with coping of burnout are hardiness and social support. The personality characteristics of hardiness seem beneficial in protecting individuals from stress and burnout (Chan, 2002). Hardy individuals are committed to what they do; believe they have control over the causes and solutions of the problem and view life changes as challenges and opportunities (Maddi, 2011). Hardy individuals look at change as an opportunity, and have the courage to change a negative situation into a positive one.

Yet, there are teachers, their exposure to the stress of teaching who do not exhibit symptoms of burnout at the same high levels as other teachers in similar situations. The authorities and educators ought to have the urge to understand the reasons and find ways to prevent and cure teachers' burnout. Previous research has attempted to examine the relationships among teacher background, organizational factors, individual personality, and various aspects of teacher burnout.

As for this research, the factors that may be predicted burnout: hardiness and social support. Based on the previous studies on both hardiness and social support as the factors to increase teachers' well-being and to reduce the occupational stresses, the enhancement of hardiness and social support would be decreased the possibility of teachers' burnout.

Since teacher burnout is an issue to be taken into consideration, the researcher would like to undertake this research on the level of hardiness and social support of teachers, and the degree of burnout in Myanmar. The better understanding of the nature of burnout of teachers and the sources to intervene the stress and burnout may help to develop a more productive and healthy organization climate in education.

Aim of the Study

The main aim of the study is to examine hardiness, social support and burnout of teachers in Momeik Township. The specific objectives are as follows:

- To explore teachers' burnout, hardiness, and social support
- To study teachers' burnout, hardiness, and social support in terms of gender, and position
- To investigate the correlation among burnout, hardiness, social support and age
- To find out the relationship among burnout, hardiness, and social support

Definitions of the Key Terms

Burnout: Burnout is a state of physical, emotional, and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding (Schaufeli & Greenglass, 2001).

Personal Burnout: Personal burnout is the degree of physical and psychological fatigue and exhaustion experience by the person (Kristensen et al., 2005).

Work-related Burnout: Work-related burnout is defined as the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work (Kristensen et al., 2005).

Client-related Burnout: Client-related burnout is defined as the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work with clients (Kristensen et al., 2005).

Hardiness: Hardiness is a set of attitudes, or disposition that motivates an individual to the kind of positive action that aids in converting personal tragedy into a growth experience (Maddi, 2002).

Commitment: Commitment is the tendency to see the world as interesting and meaningful (Bartone, 2008).

Control: Control is the belief in one's own ability to control or influence events (Bartone, 2008).

Challenge: Challenge involves seeing change and new experiences as exciting opportunities to learn and develop (Bartone, 2008).

Social support: Social support refers to the assistance provided by the social network (Taylor et al., 2004).

Sampling

Participants of this research were Senior Teachers, Junior Teachers and Primary Teachers from Momeik Township. Although there were (618) teachers in Momeik Township, only (502) teachers responded the questionnaires. The response rated 83.67%. All of these respondents (502) (32 males and 470 females) were selected as participants.

Research Design and Method

In this research, quantitative research design and descriptive survey method were used.

Instrumentation

In this study, three instruments were used in order to obtain the data of teachers from Momeik Township.

Copenhagen Burnout Inventory: It was originally developed by Kristensen, Borritz, Villadsen and Christensen (2005). It consisted of 19 items and was originally developed to evaluate three aspects of burnout: personal burnout (6 items), work-related burnout (7 items) and student-related burnout (6 items). These items were measured on 5 point Likert scales such as 1 (never), 2 (seldom), 3 (sometimes), 4 (often) and 5 (always).

Dispositional Resilience Scale: It was originally developed by Bartone (2007) and consisted of 15 items using 4 point Likert scales such as 1 (strongly disagree), 2 (disagree), 3 (agree) and 4 (strongly agree). A higher score indicates greater hardiness. This scale measures three conceptually important facets of hardiness: commitment, control and challenge. Each subscale consists of five items respectively.

Revised Multidimensional Scale of Perceived Social Support: It was developed by Ho and Chan (2017), consisting of 16 items, and classified into four groups according to the major sources of social support: principal, colleagues, family, and friends. For each group, there are four items respectively. These items were measured on 4 point Likert scales such as 1 (strongly disagree), 2 (disagree), 3 (agree) and 4 (strongly agree).

Data Analysis and Findings

Descriptive Statistics for Burnout of Teachers

After collecting the required data, descriptive statistics was used to analyze data for burnout of teachers. The results were presented in Table 1.

Table 1 Descriptive Statistics for Burnout of Teachers

No	Variable	N	Minimum	Maximum	Mean	SD
1.	Personal Burnout	502	6	27	14.41	2.895
2.	Work-related Burnout	502	7	29	15.17	3.757
3.	Student-related Burnout	502	6	26	11.61	3.683
4.	Overall Burnout	502	23	79	41.19	9.199

The descriptive statistics for burnout of the teachers was shown in Table 1. According to Table 1, the mean and standard deviation of burnout for the whole sample were 41.19 and 9.199. So, it can be said that the burnout of the teachers from Momeik Township was moderately low.

Descriptive Statistics for Hardiness of Teachers

After collecting the required data, descriptive statistics was used to analyze data for hardiness of teachers. The results were mentioned in Table 2.

Table 2 Descriptive Statistics for Hardiness of Teachers

No	Variable	N	Minimum	Maximum	Mean	SD
1.	Commitment	502	8	20	14.69	1.847
2.	Control	502	7	20	15.17	1.837
3.	Challenge	502	9	20	14.04	1.772
4.	Overall Hardiness	502	28	58	43.89	4.084

According to Table 2, the total mean score was 43.89 and standard deviation was 4.084. So, it can be interpreted that the hardiness of the teachers from Momeik Township was very high. The components of hardiness were identified as commitment, control and challenge, and control level was the highest.

Descriptive Statistics for Social Support of Teachers

After collecting the required data, descriptive statistics was used to analyze data for social support of teachers. The results are described in Table 3.

Table 3 Descriptive Statistics for Social support of Teachers

No	Variable	N	Minimum	Maximum	Mean	SD
1.	Principal	502	4	16	12.14	1.696
2.	Colleagues	502	8	16	12.29	1.274
3.	Family	502	8	16	13.05	1.683
4.	Friends	502	6	16	11.64	1.358
5.	Overall Social Support	502	38	64	49.12	4.365

Table 3 showed that descriptive statistics for social support of the teachers. According to Table 3, the total mean score was 49.12 and standard deviation was 4.365. So, it can be said that the social support of the teachers from Momeik Township was high. The support from family was the highest and that from friends was the lowest.

Comparison of Teachers' Burnout by Gender

In order to compare Teachers' Burnout by gender, descriptive statistics and independent samples *t* test were used. The means and standard deviations were shown in the following Table 4.

Table 4 Comparison of Means, Standard Deviations and the Result of Independent Samples *t* test for Teachers' Burnout by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Burnout	Male	32	39.66	9.279	-.974	500	.330
	Female	470	41.29	9.194			

According to Table 4, the mean values of burnout of teachers were 39.66 for males and 41.29 for females respectively. It can be said that there were no mean differences in teacher's burnout by gender. Based on the result of *t* test, teachers' burnout was not significantly different by gender. So, it can be concluded that burnout was not influenced by gender.

Comparison of Teachers' Hardiness by Gender

In order to compare Teachers' Hardiness by gender, descriptive statistics and independent samples *t* test were used. The means and standard deviations were shown in the following Table 5.

Table 5 Comparison of Means, Standard Deviations and the Result of Independent Samples *t* test for Teachers' Hardiness by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Hardiness	Male	32	44.75	4.220	1.228	500	.220
	Female	470	43.83	4.072			

According to Table 5, the mean values of hardiness of teachers were 44.75 for males and 43.82 for females respectively. It can be said that there were no mean differences in teacher's hardiness by gender. Based on the result of *t* test, teachers' hardiness was not significantly different by gender. So, it can be concluded that hardiness was not influenced by gender.

Comparison of Teachers' Social Support by Gender

In order to compare Teachers' Social support by gender, descriptive statistics and independent samples *t* test were used. The means and standard deviations were shown in the following Table 6.

Table 6 Comparison of Means, Standard Deviations and the Result of Independent Samples *t* test for Teacher's Social Support by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Social Support	Male	32	48.38	4.492	-.992	500	.322
	Female	470	49.17	4.357			

According to Table 6, the mean values of social support of teachers were 48.38 for males and 49.17 for female respectively. It can be said that there were no mean differences in teacher's social support by gender. Based on the result of *t* test, teachers' social support was not significantly different by gender. So, it can be concluded that social support was not influenced by gender.

Comparison of Teachers' Burnout by Position

In order to explore differences of burnout among positions such as Senior Assistant Teachers (SAT), Junior Assistant Teachers (JAT), Primary Assistant Teachers (PAT), descriptive statistics and one way analysis of variance (ANOVA) were conducted. The means and standard deviations of teachers' burnout by different positions were shown in Table 7.

Table 7 Means and Standard Deviations of Teachers' Burnout by Position

Variable	Position	Number	Mean	SD
Burnout	SAT	56	39.63	7.806
	JAT	198	40.88	10.022
	PAT	248	41.79	8.772
	Total	502	41.19	9.199

According to Table 7, the mean scores of teachers grouped by their positions such as SAT, JAT and PAT were 39.63, 40.88 and 41.79 in burnout respectively. The mean score of PAT was the highest and that of SAT was the lowest in the sample.

To make sure the differences of teachers' burnout by their positions, one way analysis of variance (ANOVA) was conducted. The results were shown in Table 8.

Table 8 ANOVA Result for Teachers' Burnout by Position

Factor	Burnout	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Position	Between Groups	243.895	2	121.948	1.441	.237
	Within Groups	42147.127	499	84.463		
	Total	42391.022	501			

The result revealed that there was no significant difference in burnout of teachers by positions, $F(2, 499) = 1.444$, $p > 0.05$. So, it could be concluded that there was no significant difference in teachers' burnout by position.

Comparison of Teachers' Hardiness by Position

In order to explore differences of hardiness among positions, descriptive statistics and one way analysis of variance (ANOVA) were conducted. The means and standard deviations of hardiness among different positions were shown in Table 9.

Table 9 Means and Standard Deviations for Teachers' Hardiness by Position

Variable	Position	Number	Mean	SD
Hardiness	SAT	56	42.63	3.328
	JAT	198	43.90	4.443
	PAT	258	44.17	3.895
	Total	502	43.89	4.084

According to Table 9, the mean scores of teachers grouped by their positions such as SAT, JAT and PAT were 42.63, 43.9 and 44.17 in hardiness respectively. The mean score of PAT was the highest and that of SAT was the lowest.

To make sure the differences of teachers' hardiness by their position, one way analysis of variance (ANOVA) was conducted. The results were shown in Table 10.

Table 10 ANOVA Result for Teachers' Hardiness by Position

Factor	Hardiness	Sum of Squares	df	Mean Square	F	p
Position	Between Groups	109.002	2	54.501	3.298	.038
	Within Groups	8245.189	499	16.523		
	Total	8354.191	501			

The result revealed that there was significant difference of hardiness among positions of teachers, $F(2,499) = 3.298$, $p < 0.05$. So, it could be said that there was significant difference of hardiness by positions.

To be clearer, the result of Tukey HSD for hardiness of teachers by positions was shown in Table 11.

Table 11 Result of Tukey HSD for Teachers' Hardiness by Position

Variable	(I) Position	(J) Position	Mean Difference (I-J)	p
Hardiness	SAT	JAT	-1.279	.095
		PAT	-1.544	.028
	JAT	PAT	-.265	.772

According to the result of Table 11, there was significant difference in hardiness between senior teachers and primary teachers. But there were no significant differences in the hardiness between junior teachers and senior teachers as well as junior teachers and primary teachers. So, it could be concluded that the hardiness of the primary teachers was higher than that of the senior teachers.

Comparison of Teachers' Social Support by Position

In order to explore differences of social support among positions, descriptive statistics and one way analysis of variance (ANOVA) were conducted. The means and standard deviations of social support among different positions were shown in Table 12.

Table 12 Means and Standard Deviations for Teachers' Social Support by Position

Variable	Position	Number	Mean	SD
Social Support	SAT	56	47.64	3.792
	JAT	198	49.04	4.553
	PAT	248	49.51	4.274
	Total	502	49.12	4.365

According to Table 12, the mean scores of teachers grouped by their positions such as SAT, JAT and PAT were 47.64, 49.04 and 49.51 in social support respectively. The mean score of PT was the highest and that of ST was the lowest.

To make sure the differences of teachers' social support by positions, one way analysis of variance (ANOVA) was conducted. The results were shown in Table 13.

Table 13 ANOVA Result for Teachers' Social Support by Position

Factor	Social Support	Sum of Squares	df	Mean Square	F	p
Position	Between Groups	160.781	2	80.391	4.274	.014
	Within Groups	9386.518	499	18.811		
	Total	9547.299	501			

The result revealed that there was significant difference of social support among position of teachers, $F(2,499) = 4.274, p < 0.05$. So, it could be said that there was significant difference of social support by position.

To be clearer, the result of Tukey HSD for teachers' social support by position was shown in Table 14.

Table 14 Result of Tukey HSD for Teachers' Social support by Position

Variable	(I) Position	(J) Position	Mean Difference (I-J)	p
Social Support	SAT	JAT	-1.398	.085
		PAT	-1.865	.011
	JAT	PAT	-.468	.495

According to the result of Table 14, there was significant difference in the mean values of social support between senior teachers and primary teachers. But there is no significant difference in the social support between junior teachers and senior teachers as well as junior teachers and primary teachers. So, it could be concluded that the social support of the primary teachers was higher than that of the senior teachers.

Relationship between Age and Burnout of Teachers

To investigate the relationship between age and burnout of teachers, the Pearson product-moment correlation coefficient was calculated and the results were shown in Table 15.

Table 15 Relationship between Age and Burnout of Teachers

Factor	Personal Burnout	Work-related Burnout	Student-related Burnout	Overall Burnout
Age	-.135**	-.115**	-.064	-.115**

Note: **. Correlation is significant at 0.01 level (2-tailed)

According to Table 15, it indicated that the age of teachers was slightly correlated with personal burnout ($r = -.135, p < .01$) and work-related burnout ($r = -.115, p < .01$). And then the result revealed that the age of teachers was significantly correlated with burnout ($r = -.115, p < .01$). And then, the relationship between the age and burnout of teachers was low negative correlation. But the strength of correlation was very weak (Evans, 1996). Therefore, it could be interpreted that the younger the teacher is, the higher level of burnout they would have.

Relationship between Age and Hardiness of Teachers

To investigate the relationship between the age and hardiness of teachers, the Pearson product-moment correlation coefficient was calculated and the results were shown in Table 16.

Table 16 Relationship between Hardiness and Age of Teachers

Factor	Commitment	Control	Challenge	Hardiness
Age	-.003	-.148**	-.090*	-.107*

Note: **. Correlation is significant at 0.01 level (2-tailed)

*. Correlation is significant at 0.05 level (2 tailed)

According to Table 16, it indicated that the age of teachers was slightly correlated with control ($r = -.148, p < .01$) and challenge ($r = -.090, p < .05$). And then the result revealed that the age of teachers was significantly correlated with hardiness ($r = -.107, p < .05$). But the strength of correlation was very weak (Evans, 1996). And then, the relationship between the age and hardiness of teachers was low negative correlation. Therefore, it could be interpreted that the younger the teacher is, the higher level of hardiness they would have.

Relationship between Age and Social Support of Teachers

To investigate the relationship between social support and age of teachers, the Pearson product-moment correlation coefficient was calculated and the results were shown in Table 17.

Table 17 Relationship between Age and Social Support of Teachers

Factor	Principal	Colleagues	Family	Friends	Social Support
Age	.065	-.048	-.073	-.040	-.029

According to Table 17, it indicated that the age of teachers was not correlated with their social support ($r = -.029, p > .05$). Moreover any dimension of social support was not correlated with the age of teachers.

Relationship among Hardiness, Social Support and Burnout

The means and standard deviations of the three variables, and the correlation can be found in Table 18.

Table 18 Means, Standard Deviations and Correlations for Hardiness, Social Support and Burnout (N = 502)

Variables	Mean	SD	Hardiness	Social Support
Dependent				
Burnout	41.66	9.199	-.288***	-.235***
Predictor				
Hardiness	43.89	4.084	-	.382***
Social Support	49.12	4.365	-	-

Note: *** $p < .001$

As can be seen Hardiness and Social support were negatively and significantly correlated with Burnout, indicating that those with higher scores on these variables tend to have lower Burnout.

In general, multiple regression analysis is compared to predict a normal dependent variable from a combination of several scales and independent variables. In this study, a simultaneous multiple regression was conducted to predict teacher's burnout from the combination of hardiness and social support of teachers. Table 19 summarizes analysis results of multiple regression.

Table 19 Simultaneous Multiple Regression Analysis Summary for Hardiness and Social Support Predicting Burnout

Variable	B	SEB	β	F	R ²
Hardiness	-.524	.103	-.233***	28.156***	.098
Social Support	-.307	.097	-.146**		
Constant	79.303	5.183			

Note: R² = .098, F (2,499) = 28.156, $p < .001$.

** $p < .01$, *** $p < .001$.

The multiple regression established that Hardiness and Social support could statistically significantly predict Burnout, $F (2,499) = 28.156$, $p < .001$ and Hardiness and Social support accounted for 9.8% (R² = .098) of the explained variability in Burnout. According to Table 19, Hardiness and Social support had significant negative regression weights, indicating teachers with higher hardiness and social support were expected to have lower burnout. This result was consistent with the previous results (e.g., Kobasa, 1982; Sarrason, et al., 1983; Eschelman, et al., 2010). A significant regression equation was so formed as

$$\text{Burnout} = 79.303 - .524 (\text{Hardiness}) - .307 (\text{Social Support})$$

Teachers burnout decreased .524 units for each units of hardiness increased and .307 units for each unit of social support increased. The multiple regression model of Burnout with Hardiness and Social Support was shown in Figure.

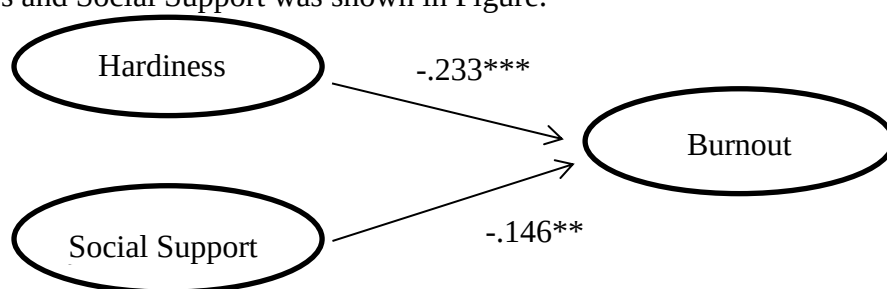


Figure Multiple Regression Model of Hardiness, Social Support and Burnout

Path values were Standardized Regression Coefficients, *** $p < .001$ and ** $p < .01$

Discussion and Conclusion

Discussion

Level of Burnout of Teachers: It was found that the burnout of the teachers from Momeik Township was moderately low. But the burnout scores in the present study were above the average scores found by Kristensen et al. (2005), and it was between 30 and 36. The reasons for increase in burnout scores of teachers may be the work load (such as paper work, assignment, ...) and the demand of parents were increasing on the one hand, and the teachers were being assigned

the subjects to teach for requirement whatever it is or is not related to specialization on the other hand. Then the teachers decrease job satisfaction and increase in the sense of burnout.

Hardiness of Teachers: The hardiness of the teachers from Momeik Township was very high (> 39). According to Bartone's (2007) guideline for interpretation of hardiness scores, the teachers from Momeik Township nearly always see the world as interesting and meaningful, enjoy their daily activities, and believe they can influence people and things around them. They also adjust and adapt quickly to changing circumstances. And they had the lowest score in subscale "Challenge". The teachers had little chance to adapt quickly to changing circumstances because of red tape and then they remained lower level in challenge.

Social Support of Teachers: The social support of the teachers from Momeik Township was very high. The support perceived from family was the highest and that from friend was the lowest. This may happen because of the increase in time pressure and work load resulting in less time for rest and decreasing time to meet with friends.

Difference in Burnout of Teachers by Gender: In the present study, the independent variable (gender) was not found to be significant different in burnout of the teachers. It can be interpreted that teachers' gender did not have an effect on burnout of teachers. Some studies have found that there was no difference in burnout rates (Farber, 1984; Bachelor & Gold, 1988; Whitehead, 2007; Durr, 2008; cited in Jamshidirad et al., 2012) and this was in accordance with this present finding. There were many possible reasons for not showing significant difference in burnout of teachers by gender. The working conditions in school influence the level of teacher burnout, such as school facilities, equipment, and class size (Gold & Roth, 1993; Chan, 2003; Hakanen et al., 2006; Landeche, 2009; Baran et al., 2010; cited in Fernet et al., 2012). There is no difference in working conditions for teachers from the same working place by gender. So it may be an explanation for the burnout of teachers was not shown any difference by gender.

Difference in Hardiness of Teachers by Gender: In the present study, the independent variable (gender) was not found to be significant different in hardiness of the teachers. It can be interpreted that teachers' gender did not have an effect on hardiness of teachers. Personal autonomy is extremely important in hardiness formation (Maksimenko & Serdiuk, 2016). The teachers possess autonomy in teaching pedagogy and individual classroom operation regardless of gender (Fachrurrazi, 2017). So the hardiness of the teachers in Momeik Township was not different by gender.

Difference in Social Support of Teachers by Gender: In the present study, the independent variable (gender) was not found to be significant different in the social support of the teachers. It can be interpreted that teachers' gender did not have an effect on social support of teachers. Some studies described that there was no significant relationship between the gender and social support (Rajakala & Kumar, 2015) and it was consistent with the current study. The social support for the female teachers was slight higher than males although it was not significant. Some other studies also said that females react more positively to social support (Frost et al., 2017). Since the female teachers have more emotional support (thrust, listening, concern) for peer than males (Sarros, 1989) it can be said that female teachers perceived more social support.

Difference in Burnout of Teachers by Position: It was found that there was no significant difference in burnout of teachers by position, it was not found similar to the previous studies. Although it was not significant different, the primary teachers had shown the highest score. The primary teachers in Momeik Township had to work with students all the working hours so they may be more exhausted than the teachers of other positions.

Difference in Hardiness of Teachers by Position: In this study there was significant difference in hardiness of teachers by position. The hardiness of senior teachers was lower than that of

primary teachers although there was no significant difference. Senior Teacher may doubt that his/her life is somewhat empty of meaning since they have the high expectation (Kardum et al., 2012). They may see life is boring for them when the working conditions are not in accordance with their expectations, then they decrease the sense of commitment and challenge.

Difference in Social Support of Teachers by Position: The result regarding social support by teachers' position indicated that there was significant difference. The result shown senior teachers had lower social support than primary teachers. It was consistent with the previous results (Morelock, 1994; De Meulenaere, 2016). The senior teachers' role in work environment is tenser than primary teachers. They have many paper work and assignment that are emotional draining and decrease meeting time with friends. Then the senior teachers had perceived lower social support than primary teachers.

Correlation of Age and Burnout of Teachers: The results of this study indicated that burnout is related to age, younger teachers tended to obtain higher burnout scores and this has been reported in other studies (Claxton & Catalan, 1998; Lau et al., 2005; Luk et al., 2010; Gavish & Friedman, 2010; Fisher, 2011; cited in Singh et al., 2016). One reason for such an outcome could be that in the early years of one's job, young teachers are enthusiastic and take on challenge of the job with ease. Younger teachers may also be more idealistic and may feel inadequate and undervalued if they fail to reach their students. Moreover, younger teachers, because of lack of experience are more prone than older ones to an excessive job involvement leading them to burnout (Goswami, M., 2013). Experienced teachers develop technical, psychological and social characteristics that are protection against the negative effects of job-related pressure. So younger teachers were more suffer from burnout.

Correlation between Age and Hardiness of Teachers: Upon reflecting the results of Pearson product-moment correlation coefficient on the age and hardiness of the teachers, younger teachers had significantly the higher hardiness. In general, the older teachers more stable do not want changes as a normal life but the young expect and accept change, and have much future prospect, so the younger teachers had significantly the higher hardiness.

Correlation between Age and Social Support of Teachers: The results of the current study shown the age and social support of teachers were not significantly correlated and it was consistent with the previous studies (Rajakala & Kumar, 2015; DeMeulenaere, 2016; Frost et al., 2017). DeMeulenaere (2016) suggested that the age and the satisfaction of the teachers with the support people were not related. The teachers at any age can get the support from principal, colleagues and their friends.

Can the Combination of Hardiness and Social Support predict Burnout of Teachers? The results of this study indicated that burnout was significantly negatively correlated with hardiness. By this study, the teachers higher in hardiness were suggested that they will have less burnout. As mentioned, hardy personality is an effective tool when mediating stress and burnout (Maddi & Kobasa, 1984), the findings of this research was consistent. The results also revealed that there were significant negative correlations between social support and burnout. So the teachers who perceived higher social support, the lower burnout of the teachers had. Social support according to Sarason, et al. (1983) is the emotional comfort that teachers receive from administrators, colleagues, and family, which has been identified as a resource that enables teachers to cope with stress.

Then, the results of multiple regression on hardiness, social support (as predictors) and burnout (dependent) revealed that Hardiness and Social support accounted for 9.8% the explained variability in Burnout. Hardiness and Social support had significant negative regression weights, indicating teachers with higher hardiness and social support were expected to

have lower burnout. The accounted percentage was only 9.8% and the other factors (such as working environment, emotional factors) may influence the burnout of the teachers. Social support, according to the early research on hardiness, indicated that social support could be effective in mediating stress (Kobasa, 1982; Sarason, et al., 1983; Eschelman, et al., 2010).

Conclusion

Teachers are an extremely important facet of any society for a number of reasons and their role in society is both significant and valuable. The world changes day by day and there are no doubt that the modern society is not the same with an ancient one. Education system has changed completely. The environment of the school is frequently demanding, requiring workers to be emotionally involved with students as well as being mentally and physically challenged. Prolonged exposure of stressful situation and job dissatisfaction tend to burnout of teachers (Pines and Aronson, 1988). The teachers who have the higher hardiness level can defend the stressful situations. The social support perceived by teachers can also help to prevent improving the sense of burnout.

In the present study, there is a negative relationship between the combination of hardiness and social support, and burnout of teachers. Thus, in order to be lack of burnout, the teachers should try to enhance their hardiness and stay commitment in working society actively to increase perceiving social support. Other than the indigenous implications of the study specifically made in light of the findings of current study, administrators as well as teachers must look at the personality attribute of hardiness as a prevention technique for burnout. The remedial ways of burnout can be shared among the members of educational environment.

Besides, the teachers should try-

- to identify the problems, facing both personally and academically
- to encounter the stress situation
- to encounter unexpected situations without powerlessness and learn the new matter in the aging life
- to trust and listen to each other
- to give emotional help and support each other
- to be a person who can be relied when things get tough at work
- to relax after work and avoid confrontation
- to devote more time to particular tasks

To conclude, since teachers are such a valuable resource to education, making proper plan and decisions, and implementing scientific and effective intervention are necessary to decrease teacher burnout.

Limitations

There are many limitations on this study. One of them is that the data collection was conducted within one-month period of time. It represents snapshot of teachers' burnout, level of hardiness and social support at a certain point in the school year. The survey distributed was a self-report questionnaire. Teachers may also feel that they cannot be truthful with their response on the questionnaire. Another issue is that the recall such as the teachers may forget how they felt about a particular situation that may have occurred in the past. Moreover, one of limitations of this study was the use of a convenient sample. The study sample was extracted from one

township. It may be the ones who were experiencing burnout did not take part in the study. Those issues limit the ability to generalize to the population as a whole.

Recommendations for Future Research

Although findings of the current research reveal interesting conditions, recommendation for future research can be presented in the followings.

- Further research needs to compare hardiness, social support and burnout of teachers from different samples and population.
- Further research needs to conduct other socio-demographic characteristics such as marital status, size of the family, the distance from residence to school, teaching experience and school type which may influence burnout.
- Further research should be investigated many different environmental factors that can lead to teacher burnout, including the excessive class size, poor working conditions, lack of external sources of support, disrespect and disruptive students and job satisfaction.
- A longitudinal study could also examine if surveying teachers with hardy personalities determines if there is a relationship between hardiness and their job satisfaction and burnout.
- Multiple methodological techniques such as observations, interview and case-study should be utilized in further research.

Acknowledgements

We would like to express my deep gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education), Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) for their permission to conduct this study. We would like to express my most sincere and heartfelt thanks to Dr. Khin Hnin Nwe (Professor and Head of Department, Department of Educational Psychology, Sagaing University of Education) for her invaluable guidance, encouragement, suggestions, and administrative supervision in order to make my thesis more perfect and better. Lastly, we would like to express special thanks to the Township Education Officer, the principals, and teachers from Momeik Township for their help and participation in this research patiently.

References

- Bartone, P. (2007). Test-retest reliability of the dispositional resilience scale-15, a brief hardiness scale. *Psychological Reports, 101*, 943-944. <http://doi:10.2466/PRO.101.3.943-944>
- Bartone, P. T. (2008). Welcome to hardiness-resilience.com. Retrieved February 5, 2019 from <http://www.hardiness-resilience.com>
- Buunk, A. P., Peiró, J. M. Rodríguez, I., & Bravo, M. J. (2007). A loss of status and a sense of defeat: An evolutionary perspective on professional burnout. *European Journal of Personality, 21*, 471-485. <http://doi:10.1002/per.627>
- Chan, D. (2002). Stress, self-efficacy, social support, and psychological distress among prospective Chinese teachers in Hong Kong. *Educational Psychology, 22*(5), 557-569.
- Cherniss, C. (1980b). *Staff burnout: job stress in the human services*. Beverly Hills, California: Sage.
- DeMeulenaere, M. A. (2016). "A Study of the Relationship of Stress, Burnout, Hardiness, and Social Support in Pre-Kindergarten and Kindergarten Teachers". *LSU Doctoral Dissertations*. 2961. Retrieved July 21, 2018 from https://digitalcommons.lsu.edu/gradschool_dissertations/2961
- Eschleman, K., Bowling, N., & Alarcon, G. (2010). A meta-analytic examination of hardiness. *International Journal of Stress Management, 4*, 277-307.
- Evans, J. D. (1996). *Straightforward statistics for the behavioral sciences*. Pacific Grove, CA: Brooks/Cole Publishing.
- Fachrurrazi, F. (2017). *Relationship between teacher professional competences and teacher work-autonomy*. <http://doi:10.23533/01203>

- Fernet, C., Guay, F., Senécal, C., & Austin, S. (2012). Predicting individual changes in teacher burnout: The role of perceived school environment and motivational factors. *Teaching and Teacher Education*, 28, 514-525. <http://doi:10.1016/j.tate.2011.11.013>
- Fisher, M. (2001). Factors influencing stress, burnout, and retention of secondary teachers. *Current Issues in Education*, 14(1). Retrieved from <https://cie.asu.edu/ojs/index.php/cieatasu/article/view/658>
- Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues*, 30, 159-165. <http://doi:10.1111/j.1540-4560.1974.tb00706.x>
- Frost, L., Mang, C., & Ferguson, K., (2017). Teacher stress and social support usage. *Brock Education Journal*, 26(2), 62-86.
- Goswami, M. (2016). A study of burnout of secondary school teachers in relation to their job satisfaction. *Journal of Humanities and Social Science*, 10(1), 18-26. <http://doi:10.9790/0837-01011826>
- Ho, S. K., & Chan, E. S. (2017). Modification and validation of the multidimensional scale of perceived social support for Chinese school teachers. *Cogent Education*, 4, 12277824. <http://dx.doi.org/10.1080/2331186x.2016.1277824>
- Jamshidirad, M., Mukundan, J., & Nimehchisalen, V. (2012). Language Teacher's burnout and gender. *International Journal of Applied Linguistics and English Literature*, 1(4), 46-52. <http://doi:10.7575/ijalel.v.1n4p.46>
- Jennings, P.A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, 79, 491-525. <http://doi:10.3102/0034654308325693>
- Kardum, I., Hudek-Knezevic, J., & Krapic, N. (2012). The structure of hardiness, its measurement invariances across gender and relationships with personality traits and mental health outcomes. *Psihologijske Teme*, 21(3), 487-507.
- Kobasa, S. C. (1982). Commitment and coping among stress resistance among lawyers. *Journal of Personality and Social Psychology*, 42, 707-717
- Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen burnout inventory: A new tool for the assessment of burnout. *Work & Stress*, 19(3), 192-207. Retrieved September 11, 2018 from <https://www.researchgate.net/publication/247511197>
- Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Maddi, S. R. (2002). The story of hardiness: Twenty years of theorizing, research, and practice. *Consulting Psychology Journal*, 54, 173-185.
- Maddi, S. R., & Kobasa, S. C. (1984). *The hardy executive: Health under stress*. Homewood, IL: Dow Jones-Irwin.
- Maddi, S. R., Harvey, R., Khoshaba, D. M., Fazel, M., & Resurreccion, N. (2011). The personality construct of hardiness, V: relationships with the construction of existential meaning in life. *Journal of Humanistic Psychology*, 51(3), 15-23.
- Maksimenko, S., & Serdiuk, L. (2016). Psychological potential of personal self-realization. *Social welfare: interdisciplinary approach*, 1(6), 92-100.
- Maslach, C. (1976). Burned-out. *Human Behavior*, 5(9), 16-22.
- Morelock, D. F. (1994). A correlational study of hardiness, health and burnout among teachers in the Sullivan county school system. *Electronic Theses and Dissertations*. Paper 2753. <http://dc.etsu.edu/etd/2753>
- Murphyhy, P. K., Delli, L. A. M., & Edwards, M. N. (2004). The good teacher and good teaching: Comparing beliefs of second grade students, pre-service teachers, and in-service teachers. *Journal of Experimental Education*, 72, 69-92.
- Pines, A. M., & Aronson, E. (1988). *Career burnout: Causes and cures*. New York: The Free Press.
- Rajakala, R., & Kumar, S. S. (2015). Social support and job satisfaction among the school teachers in Truchirappalli educational revenue district, Tamil Nadu, India. *International Journal of Resarch-Granthaalayah*, 3, 83-91.
- Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: the social support questionnaire. *Journal of personality and social psychology*, 44(1), 127.

- Sarros, A. M. (1989). Teacher burnout and its relationship to social support (PhD thesis). Retrieved from https://minerva-access.unimelb.edu.au/bitstream/handle/11343/36769/275309_sarros_teacher_2.pdf?sequence=1
- Schaufeli, W. B., & Greenglass, E. R. (2001). Introduction to special issue on burnout and health. *Psychology and Health*, 16, 501/10.
- Singh, S., Prakach, J., Das, R., Srivastava, K. (2016). A cross-sectional assessment of stress, coping, and burnout in the final year medical undergraduate students. http://doi.10.4103/ipj.ipj_68_16
- Taylor, S. E., Sherman, D. K., Kim, H. S., Jarcho, J., Takagi, K., & Dunagan, M. S. (2004). Culture and social support: Who seeks it and why? *Journal of Personality and Social Psychology*, 87, 354-362.
- Vandenberghe, R., & Huberman, A. M. (1999). *Understanding and preventing teacher burnout: A sourcebook of international research and practice*. Cambridge, UK: Cambridge College Press.

USING ERROR PATTERN ANALYSIS FOR DIAGNOSTIC ASSESSMENT IN PRIMARY MATHEMATICS LEARNING

Khin Hnin Nwe¹, Ye Lin Kyaw²

Abstract

The purpose of the study is to analyze the error patterns for diagnostic assessment in primary mathematics learning, especially in addition and subtraction of fractions. Descriptive survey method was used in this study. In this study, sixteen problems associated with the addition of and subtraction of fractions were prepared to analyze error patterns. This test was developed using the problems from primary mathematics course. It comprised of 8 test items which fall into eight levels for the addition of fractions and 8 test items which fall into eight levels for the subtraction of fractions. For the classification of systematic errors in addition and subtraction of fractions, the researcher used the classification developed by Brueckner (1980). The tests were administered during November last week and December first week of 2017. The sample was the 400 Grade (5) students from four Basic Primary Schools, South Dagon Township, Yangon Region. Out of the subjects, 51.8% (N=207) were males and 48.3% (N=193) were female primary students. It was found that the students demonstrated with the highest percentage of the error related to the converting the whole number to improper fraction (21.9%), followed by the error related to the reducing of fraction (20.5%), and 12.5% of converting the improper fraction to mixed fraction. The other errors were random error (9.5%), careless error (6.6%), the error of converting from mixed fraction to improper fraction (5.1%), and the error related to the finding lowest common denominator (4.5%) respectively. The results of the error analysis revealed an overall lack of experience with basic fraction concepts. Then, the results of this analysis magnify the existence of a problem in learning mathematics that must be rectified.

Keywords: Error, Error pattern, Error pattern analysis, Diagnostic assessment

Introduction

Many students who are not proficient in basic mathematics skills demonstrate numerous mathematics misconceptions. When students make errors and formulate mathematical misconceptions, teachers should recognize the errors, prescribe an appropriate instructional focus, and implement an effective and efficient remediation plan. Error pattern analysis provides an effective and efficient method for pinpointing specific problems students are having with computation. By determining that the student is consistently using an inaccurate procedure for solving computation problems, the teacher can then provide specific instruction and monitoring to assist the student to use an effective procedure for solving specific types of computations.

Error pattern analysis is much more than a diagnostic tool for determining a student's procedural effectiveness; often, it provides them a window for determining that a student lacks basic conceptual understanding. It is important to investigate error patterns in that emerge as students attempt to solve problems involving the ability to apply fraction concepts and perform operations on fractions, especially on addition and subtraction. And also Grade-5 is the very important final stage of the primary level in Basic Education. Thus, it is necessary to build a firm foundation for the primary (Grade-5) students in mathematics learning.

Purpose of the Study

The purpose of the study is to analyze the error patterns for diagnostic assessment in primary mathematics learning, especially in addition and subtraction of fractions.

¹ Dr, Professor, Head of Department of Educational Psychology, Sagaing University of Education

² Master Student, Department of Educational Psychology, Yangon University of Education

Definitions of Key Terms

Error: A mistake or miss step in Arithmetic computation that results in an incorrect answer. It is an incorrect step in a process of solving problems in basic arithmetic skills (Joshi, 2011).

Error pattern: Categorization of errors having significant element in common. Error patterns taken for study are namely regrouping, directional, attention to sign, placement, omission, guessing (Joshi, 2011).

Error analysis: Error analysis is a type of diagnostic assessment that can help a teacher determine what types of errors a student is making and why. More specifically, it is the process of identifying and reviewing a student's errors to determine whether an error pattern exists - that is, whether a student is making the same type of error consistently (Brown, Skow K & the IRIS Center, 2016).

Diagnostic assessment: Diagnostic assessment is an evaluation of a learner's skills, strengths and weaknesses (ERIC, 2002).

Method

In this study, a survey method was utilized to examine the student's mathematical error patterns especially in addition and subtraction of fractions.

Participants

The sample consists of 400 (207 males and 193 females) Grade (5) students from four Basic Primary Schools, South Dagon Township, Yangon Region.

Instrumentation

In this study, sixteen problems associated with the addition of and subtraction of fractions were prepared to analyze error patterns. It comprised 8 test items which fall into eight levels for the addition of fractions and 8 test items which fall into eight levels for the subtraction of fractions. The fractions used in the tests for addition of fractions were restricted to those having a denominator not larger than 12 and a common denominator not larger than 21. For the subtraction of fractions, the test restricted the fractions used to those having a denominator not larger than 10 and a common denominator not larger than 12. The computations in the test were kept as simple as possible so that errors due to faulty handling of fractions would be revealed rather than errors due to difficult computation. Test items were also based on the Grade-5 Mathematics textbook used in primary schools. Table 1 and Table 2 show the description of item types according to the levels for addition and subtraction respectively. The test was a pencil and paper test.

Table 1 Description of Item Types in Addition of Fractions

Item level	Description of item level	Example
Level 1	Addition of proper fractions with unrelated denominators. No reduction.	$\frac{1}{4} + \frac{1}{3} = \frac{3}{12} + \frac{4}{12} = \frac{7}{12}$
Level 2	Addition of proper fractions with related denominators. Reduction.	$\frac{1}{2} + \frac{1}{6} = \frac{3}{6} + \frac{1}{6} = \frac{4}{6} = \frac{2}{3}$
Level 3	Addition of proper fractions with related denominators. No reduction. Answer change from improper fraction to mixed fractions.	$\frac{4}{5} + \frac{3}{10} = \frac{8}{10} + \frac{3}{10} = \frac{11}{10} = 1\frac{1}{10}$
Level 4	Addition of proper fractions with unrelated denominators. No reduction. Answer change from improper fraction to mixed fractions.	$\frac{2}{3} + \frac{3}{7} = \frac{14}{21} + \frac{9}{21} = \frac{23}{21} = 1\frac{2}{21}$

Item level	Description of item level	Example
Level 5	Addition of mixed fraction and proper fractions with related denominators. Reduction.	$\frac{5}{12} + 1\frac{1}{3} = \frac{5}{12} + \frac{4}{3} = \frac{5}{12} + \frac{16}{12} = \frac{21}{12}$ $= 1\frac{9}{12} = 1\frac{3}{4}$
Level 6	Addition of mixed fractions with related denominators. Answer change from improper fraction to mixed fractions and reduction.	$2\frac{2}{3} + 1\frac{7}{12} = \frac{8}{3} + \frac{19}{12} = \frac{32}{12} + \frac{19}{12} = \frac{51}{12}$ $= 4\frac{3}{12} = 4\frac{1}{4}$
Level 7	Addition of mixed fractions with unrelated denominators. No reduction.	$4\frac{1}{5} + 1\frac{1}{4} = \frac{21}{5} + \frac{5}{4} = \frac{84}{20} + \frac{25}{20}$ $= \frac{109}{20} = 5\frac{9}{20}$
Level 8	Addition of three mixed fractions with related denominators. No reduction. Answer change from improper fraction to mixed numbers.	$2\frac{3}{4} + 1\frac{5}{8} + 1\frac{1}{4} = \frac{11}{4} + \frac{13}{8} + \frac{5}{4}$ $= \frac{22}{8} + \frac{13}{8} + \frac{10}{8} = \frac{45}{8} = 5\frac{5}{8}$

Table 2 Description of Item Types in Subtraction of Fractions

Item level	Description of item level	Example
Level 1	Subtraction of proper fractions having common denominators. Reduction.	$\frac{3}{4} - \frac{1}{4} = \frac{3-1}{4} = \frac{2}{4} = \frac{1}{2}$
Level 2	Proper fractions subtracted from mixed fraction. Fractions with similar denominators. Reduction.	$7\frac{5}{6} - \frac{1}{6} = 7\frac{4}{6} = 7\frac{2}{3}$
Level 3	Proper fractions subtracted from mixed fraction with similar denominators. Value of subtrahend bigger than minuend. No reduction.	$3\frac{1}{7} - \frac{4}{7} = \frac{22}{7} - \frac{4}{7} = \frac{18}{7} = 2\frac{4}{7}$
Level 4	Whole number subtracted from mixed fraction.	$6\frac{1}{2} - 2 = 4\frac{1}{2}$
Level 5	Proper fraction subtracted from whole number.	$3 - \frac{1}{2} = \frac{3}{1} - \frac{1}{2} = \frac{6}{2} - \frac{1}{2} = \frac{5}{2} = 2\frac{1}{2}$
Level 6	Mixed fraction subtracted from whole numbers.	$5 - 1\frac{1}{3} = \frac{5}{1} - \frac{4}{3} = \frac{15}{3} - \frac{4}{3} = \frac{11}{3} = 3\frac{2}{3}$
Level 7	Proper fraction subtracted from mixed fraction. Unrelated denominators.	$1\frac{1}{3} - \frac{1}{4} = \frac{4}{3} - \frac{1}{4} = \frac{16}{12} - \frac{3}{12} = \frac{13}{12} = 1\frac{1}{12}$
Level 8	Mixed numbers subtracted from mixed fraction. Number of subtrahend bigger than minuend. Reduction.	$4\frac{1}{8} - 1\frac{7}{8} = \frac{33}{8} - \frac{15}{8} = \frac{18}{8} = 2\frac{2}{8} = 2\frac{1}{4}$

Procedure

After preparing the instrument, pilot testing was conducted on 11th November, 2017. These students completed the fraction tests within a forty minutes. The tests were administered during November last week and December first week 2017 at selected schools. The participants were allowed 45 minutes to respond the test items. To analyze, all of the students' errors were classified into three main categories: systematic error, random error and careless error.

Data Analysis and Findings

The results from following table 3 show that the only 2191 (34.2%) of items out of the total of 6400 items (16 items $\times$ 400 students) were all completed and arrived to the correct answers. And also, 2858 (44.7%) of items were composed with various errors that did not arrive to the completely correct answers. Then, the students operated to these items that manifested they had misconceptions about fractions (unrelated operations to the targeted item) and did not describe any operation (skip off) were in the 1351 (21.1%) items.

Table 3 Comparison of the Students' Performances in Their Solution to Items

No.	Description	Frequency	Percentage
1.	All complete and Correct	2191	34.2 %
2.	Total number of Errors	2858	44.7 %
3.	Not understand and not answer	1351	21.1 %
Total Answered Items		6400	100 %

It is obviously seen that nearly half of the items responded by the participated students were contained some types of error that barrier to the correct solutions of these items.

The following table 4 shows the data, especially the common types of errors.

Table 4 Distribution of Common Errors in Addition and Subtraction of Fractions

No.	Type of error	Frequency	Percentage
1.	Converting the improper fraction to mixed fraction	651	22.7 %
2.	Converting the mixed fraction to improper fraction	205	7.2 %
3.	Converting the whole number to improper fraction	263	9.2 %
4.	Operation to the lowest common denominator	216	7.6%
5.	Error related to the reducing of fraction	493	17.3 %
6.	Careless error	423	14.8 %
7.	Random error	607	21.2 %
Total number of errors		2858	100 %

Based on the analysis of errors, seven types of errors have been identified as a whole. The errors included the operation to the lowest common denominator, converting the improper fraction to mixed fraction, converting the mixed fraction to improper fraction, converting the whole number to the improper fraction, errors related to the reducing of fraction, careless errors and random errors. Among them, random errors and careless errors were the combination of many different errors that were not systematic errors. But the other five errors were the systematic errors. The findings showed that the most frequent errors made by students were changing the improper fraction to mixed fraction (22.7%) of all errors and

random errors (21.2%) of all errors, and also this findings are consistent with findings of Noraini Idris (2011).

The following descriptions are the explication of the included forms in each of these seven errors that the most of the students revealed in the test. Firstly, the errors related to the converting the improper fraction to mixed fraction involved,

1. did not convert improper fraction to mixed fractions, and
2. errors in converting from the improper fraction to mixed fraction,
 - (a) misunderstanding in placing quotient, remainder and divisor in the form of the whole number, numerator and denominator.
 - (b) deficiency in basic mathematical skills that involve subtraction, multiplication and division.

Secondly, the errors in converting from the mixed fractions to improper fraction involved the following.

1. addition or multiplication to all whole number, numerator and denominator.
2. misoperation to all whole number, numerator and denominator.
3. left the whole numbers.
4. errors in basic mathematical skills that involve subtraction, multiplication and division.

Third, the components of error forms that involved in the operation to the lowest common denominator are the following;

1. did not find the lowest common denominators.
2. try to perform to get the same denominator but the numerators were be multiplied by one.
3. just use the larger denominator of the two fractions' denominators involved in the in the item.
4. error in basic mathematical skills that involve multiplication.

Next, errors in converting the whole number to the improper fraction involved the following types of error.

1. taking the numerator and the denominator as the whole number.
2. converting the whole number to fraction in the form of rewriting the whole number to the denominator and the numerator as one.
3. confusing with the concepts of whole number and fractions.

And then, the other very commonly found error were the errors related to the reducing of fraction. These errors are as following;

1. did not reduce the fractions which is required, most of the students left off to these step.
2. error committed basic mathematical skills in division.
3. use different divisors to the numerator and the denominator.
4. did not completely reduce the fraction.

Finally, the last two errors were the errors related to the careless error and random error. These two errors were made up of the combination of many other errors. The major reasons for these errors made by the students may be a lack of understanding, procedures

being forgotten, lack of mastery in the operations of unique pattern of fractions, negligence in describing information from the problems, carelessness and guesswork. And also, these errors occurred because of confusion, insufficient time, anxiety, tired, many steps involved in one problem, so many similar type of problem and difficulty of problem.

An initial step would be to concentrate on the problems carefully and understand the tasks required to avoid misunderstanding of the sign/information. Additionally, students should avoid copying numbers/information incorrectly and avoid being careless in calculation. Next, students should not neglect basic mathematical skills that involve addition, subtraction, multiplication and division. These statements described in above may cause mainly to the careless errors, most of random errors and many of other systematic errors.

Specific Analysis of Common Errors in Addition and Subtraction of Fractions

In analyzing the students' errors, the seven common errors were mainly found in all sixteen test items. Errors related to the converting from improper fraction to mixed fraction contained 3 times involved in the test. And, the errors related to the converting from mixed fraction to improper fraction contained 10 times. The frequency of the error related to the finding the lowest common denominator was 12 times involved in the test. Then, the total of 6 times were involved in the reducing errors to fraction. The errors related to the converting the whole number to improper fraction was found only in subtraction and the frequency of this error was 3 times. But the other two errors related to the careless errors and the random error may be contained in all 16 items.

Table 5 Percentage of Common Error Patterns

No	Type of Error	Possible Frequency of errors	Errors quantity	Error Percentage
1.	Improper fraction to mixed fraction	$(13 \times 400) = 5200$	651	12.5%
2.	Mixed fraction to improper fraction	$(10 \times 400) = 4000$	205	5.1%
3.	Lowest common denominator	$(12 \times 400) = 4800$	216	4.5%
4.	Reducing of fraction	$(6 \times 400) = 2400$	493	20.5%
5.	Whole number to improper fraction	$(3 \times 400) = 1200$	263	21.9%
6.	Careless Error	$(16 \times 400) = 6400$	423	6.6%
7.	Random Error	$(16 \times 400) = 6400$	607	9.5%

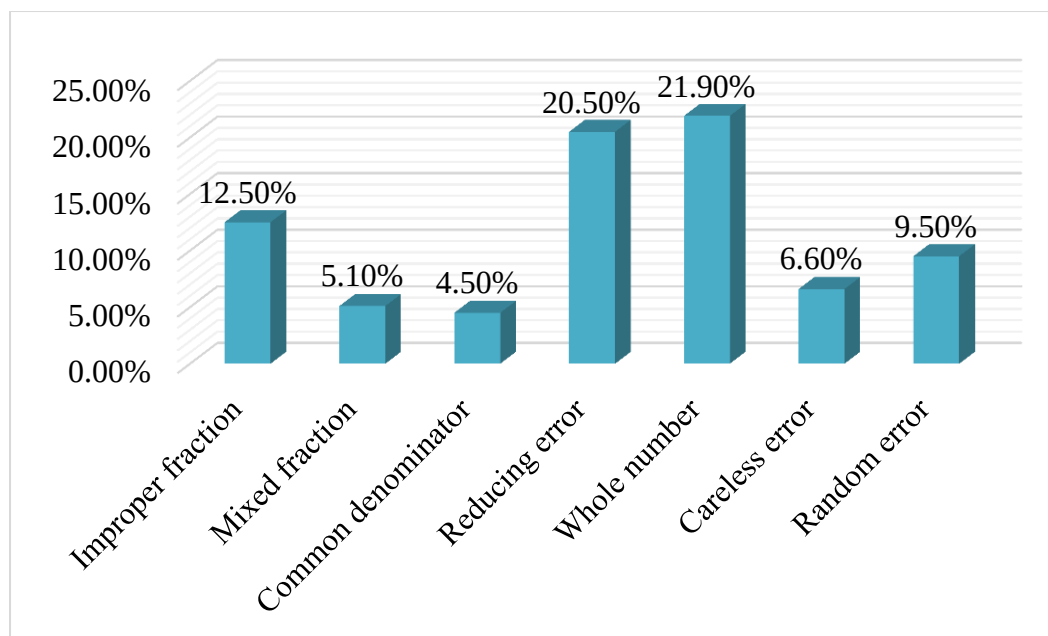


Figure 1 Percentage of Each Common Error Patterns

The above table and figure described the percentage of each common type of error by the possible frequency. It was clear that the students demonstrated the highest percentage in the errors related to the converting the whole number to improper fraction (21.9%), followed by the error related to the reducing of fraction (20.5%), and 12.5% of converting the improper fraction to mixed fraction. The other errors were random error (9.5%), careless error (6.6%), the errors of converting from mixed fraction to improper fraction (5.1%), and the errors related to the finding lowest common denominator (4.5%) respectively. These findings are similar to earlier study by (Gerald Wittmann, 2011), where, in his study with 428 secondary student (6th and 7th graders) of Real- and Werkrealschule in Baden-Wurttemberg, south-west Germany. He examined that the addition of a fraction and an integer shows the several error patterns which occur in the test. So, the two type of errors pattern such as converting the whole number to improper fraction and the reducing of fraction were significantly difficult for all students. The correct answers largely depended on the types of error which were difficult to solve and on the number of steps involved in this item. The composition of the most common errors will tend to be poor result for the average learners. Hence, the analysis of the test items was needed to be continued.

Specific Analysis of Incorrect items in Addition and Subtraction of Fractions

According to the analysis of the incorrect items in the test, it is required to know that which items were poorly performed and why. Overall, students faced difficulties in one or more items by somewhat of errors. Almost all students were confronted with some types of error in their calculation to the test items.

Table 6 Describing the Correctly Performed Students in Addition of Fractions

No.	Grade	N	Item No.							
			1	2	3	4	5	6	7	8
1.	A	122	102	63	85	77	33	44	87	77
2.	B	114	96	49	71	60	29	28	65	61
3.	C	91	48	18	24	26	6	4	18	13
4.	D	73	35	13	6	2	-	-	-	-
Total		400	281	143	186	165	68	76	170	151
		(%)	(54.5)	(35.8)	(46.5)	(41.3)	(17)	(19)	(42.5)	(37.6)

The table 6 shows the percentage of students who got the correct answer in each item of the fractions addition. Among them, item no.2, no.5 and no.6 were the items that the students treated poorly in this test. These items were selected to check the specific analysis of the common error that the students performed in their solving to the items.

A. Item No.2, in addition of fractions, $\frac{1}{2} + \frac{1}{6} = \frac{3}{6} + \frac{1}{6} = \frac{4}{6} = \frac{2}{3}$

This item was the addition of proper fractions with related denominators and reduction. This item consists of finding the lowest common denominator and reducing of fraction. Nearly 64.2% of the students were unable to find the correct answer. The common errors produced in this item are as follows,

1. The major error pattern was the reducing error to fractions that 128 (32%) of students did not perform this step.
2. 23 (5.8%) of students faced difficulties in finding the lowest common denominator.
3. 23 (5.8%) of students made careless errors in basic mathematical skills and other carelessness.
4. 18 students added both numerators and denominators, and 7 students multiplied both numerators and denominators.
5. 15 students made random errors and 22 students indicated that a lack of clear understanding about the strategy to solve.

B. Item No.5 in addition of fractions, $\frac{5}{12} + 1\frac{1}{3} = \frac{5}{12} + \frac{4}{3} = \frac{5}{12} + \frac{16}{12} = \frac{21}{12} = 1\frac{9}{12} = 1\frac{3}{4}$

This item was the addition of mixed fraction and proper fractions with related to denominators and reduction. This item consists of four types of common error pattern as converting mixed fraction to improper fraction, operation to the lowest common denominator, converting the improper fraction to mixed fraction and reducing of fraction. It was observed that 83% (332) of the students were working with errors in solving the item, and could not arrive the correct solutions. The most found common errors displayed in this item were following,

1. The major error pattern was the reducing to fractions, and 90 (22.5%) of students did not perform this step and stop the step at $1\frac{9}{12}$.
2. 75 (18.8%) of students faced difficulties in converting the improper fraction to mixed fraction.
3. 21 (5.3%) of students performed difficulties in converting mixed fraction to improper fractions.

4. 19 (4.8%) of students held difficulties in operation to the lowest common denominator.
5. 36 (9%) of students made the careless errors in basic mathematical skills and other carelessness, 29 students made random errors and 13 students did not attempt to solve and 49 students indicated lack of clear understanding about the strategy to solve.

C. Item No.6 in addition of fractions, $2\frac{2}{3} + 1\frac{7}{12} = \frac{8}{3} + \frac{19}{12} = \frac{32}{12} + \frac{19}{12} = \frac{51}{12} = 4\frac{3}{12} = 4\frac{1}{4}$

This item was the addition of mixed fractions with related to denominators. Answer was obtained by changing the mixed fraction to improper fraction, changing the improper fraction to mixed number and reduction. This item consists of four types of common error patterns such as converting mixed fraction to improper fraction, operation to the lowest common denominator, converting the improper fraction to mixed fraction and reducing the fraction. It was observed that 324 (81%) of the students were working with errors in their solving the item, cannot arrive to the correct solutions. The common errors in this item are following,

1. The major error pattern was the reducing error to fractions; 68 (17%) of students did not perform this step and stop at the step of $4\frac{3}{12}$
2. 4 (13.5%) of students faced difficulties in converting the improper fraction to mixed fraction.
3. 20 (5%) of students produced difficulties in converting mixed fraction to improper fractions.
4. 22 (5.5%) of students committed the errors in operation of the lowest common denominator.
5. 58 (14.5%) of students made the careless errors in basic mathematical skills and other carelessness, 48 students made random errors and 22 students did not attempt to solve and 38 students indicated lack of clear understanding about the strategy to solve.

The next description of the error analysis by the subtraction of fractions items are as shown in table 7.

Table 7 Describing the Correctly Performed Students in Subtraction of Fractions

No.	Grade	N	Items no.							
			1	2	3	4	5	6	7	8
1.	A	122	81	48	76	52	59	57	70	65
2.	B	114	58	29	53	39	38	38	56	41
3.	C	91	22	7	13	9	8	5	18	6
4.	D	73	1	-	-	-	-	-	2	-
Total		400	162	84	142	100	105	100	146	112
		(%)	(40.5)	(21)	(35.5)	(25)	(25.3)	(25)	(36.5)	(28)

The table 7 shows the percentage of students who got the correct answer in each item of the subtraction of fractions. Among them, items no.2, no.4, no.5 and no.6 were the items that the students treated poorly in this test. These items were selected to check the specific analysis of the common error that the students perform in their solving the items.

A. Item No.2 in subtraction of fractions, $7\frac{5}{6} - \frac{1}{6} = 7\frac{4}{6} = 7\frac{2}{3}$.

This item consists of proper fractions subtracted from mixed fraction that fractions with similar denominators and the answer is required reducing. Nearly 84 (21%) of the students were able to find the correct answer but 79% of students were unable to find the correct solution. The common errors discovered in this item are as follows,

1. The major error pattern was the reducing error to fractions that 67 (16.8%) of students did not perform this step.
2. 63 (15.8%) of students faced difficulties in converting the improper fraction to mixed fraction.
3. 27 (6.8%) of students produced the difficulties in converting mixed fraction to improper fractions.
4. 33 (8.3%) of students made the careless errors in basic mathematical skills and other carelessness.
5. 38 students made random errors, 54 students did not attempt to solve, and 34 students indicated that a lack of clear understanding about the strategy to solve.

B. Item No.6 in subtraction of fractions, $5 - 1\frac{1}{3} = \frac{5}{1} - \frac{4}{3} = \frac{15}{3} - \frac{4}{3} = \frac{11}{3} = 3\frac{2}{3}$

Item No.4, No.5 and item No.6 were similar, so discussion of one item is covered to others. This item is the subtraction of mixed fraction with whole numbers and consists of reduction. This item consists of four types of common error patterns such as converting mixed fraction to improper fraction, converting the improper fraction to mixed fraction, operation to the lowest common denominator, and converting of whole number to improper fraction. It is observed that 75% of the students were working with errors in their solving the item, cannot arrive to the correct solution. The most common errors in this item are following,

1. The major error pattern was the converting of whole number to improper fraction that 84 (21%) of students did not perform well in this step.
2. 21 (5.3%) of students faced difficulties in converting the improper fraction to mixed fraction.
3. 10 (2.5%) of students worked out difficulties in converting mixed fraction to improper fractions.
4. 14 students made random errors and 114 students did not attempt to solve the item.
5. 44 students indicated that a lack of clear understanding about the strategy to solve.

As described in the above, the major reasons of error pattern for wrong operation to fraction were involved four types of error patterns such as the converting mixed fraction to improper fraction, converting the improper fraction to mixed fraction, converting from whole number to improper fraction, reducing to fraction and these patterns also effect on the test items significantly. And then, the minor error patterns that committed in this test were contained such as the operation to the lowest common denominator, careless errors and random errors. Although careless errors and random errors are not the systematic error, the other five errors are systematic error.

The first error indicates a lack of clear understanding about the converting from the mixed fraction to improper fraction. This error is a student-developed modification of the poorly understood algorithm for renaming a mixed number as an improper fraction.

Accordingly, students who are unable to convert the mixed number as a sum do not understand the meaning of mixed fraction notation. Students, who have only learned the shortcut algorithm for converting mixed fraction as improper fractions may not know that a mixed fraction is a sum. Since the shortcut method, “denominator $\times$ whole number + numerator over denominator” is not easily generalized for the students, they make mistakes in the place of addition, and multiplication of these three things. And the other is that when adding or subtracting mixed fractions, students may ignore the fractional parts and work only with the whole numbers (e.g., $5\frac{3}{5} - 2\frac{1}{7} = 3$). These students are either ignoring the part of the problem they do not understand, misunderstanding the meaning of mixed fraction, or assuming that such problems simply have no solution.

The second error is that the error related to the operation of the improper fraction to mixed fractions. And also, this error is the student-developed modification of the poorly understood algorithm for converting a mixed fraction as an improper fraction. Most of the students in this study correctly found the suitable solutions of the fractions operations as the improper fractions and then leaved the answer as improper fractions, and some of students converted the improper fractions incorrectly. Many of these students made the missing the placements of the quotient, remainder and divisor as the whole number, numerator and denominator.

The third error is that whole numbers need to be converted to the suitable improper fractions in the computation with fractions. A related misconception is thinking that whole numbers have the same denominator as a fraction in the problem. This misconception might lead students to translate the problem $3 - \frac{1}{2}$ into $\frac{3}{2} - \frac{1}{2}$ and find an answer of $\frac{2}{2}$ or 1. Another founded misunderstanding is that the students wrote the translation of whole number to fractions as “3 into $\frac{1}{3}$ ”. These students need to be able to master the basic fraction concepts so that they can construct a relationship between the whole number and fraction.

The algorithm employed by the students is dependent upon their ability to exhaust all of the factors that are common to both numerator and denominator. Most of the students’ errors in this study were unable to complete this operation without any errors. This operation implies that both numerator and denominator can be divided by the same number without changing the value of the fraction. As reducing error included in the most commonly found error pattern in the test, most students stopped their computing before arriving to the simplest form of the fractions. However, reducing fractions into the lowest terms is only one component of the complete concept of equivalence. That indicates that these students may not have the mastery level of concepts about fractions. Students may be proficient in reducing fractions, but they are to be provided with problem solving experiences in which they must decide which equivalent form of the fraction is best suited for the given situation.

Next, the first important minor error pattern in this study is related to the operation with the lowest common denominator. Failing to find a common denominator when adding or subtracting fractions with unlike denominators and wrongly operation for common denominator are significant for computation with fractions. Students often fail to convert fractions to a common, equivalent denominator before adding or subtracting them, and instead just use the larger of the two denominators in the answer (e.g., $\frac{4}{5} + \frac{3}{10} = \frac{7}{10}$). Students do not understand that different denominators reflect different-sized unit fractions and that adding and subtracting fractions require a common unit fraction (i.e. denominator). The same underlying misconception can lead students to make a similar error: Changing the denominator of a fraction without making a corresponding change to the numerator—for example, converting the problem

$\frac{2}{3} + \frac{2}{6}$ to $\frac{2}{6} + \frac{2}{6}$. To help the child find the least common denominator for two fractions, work separately with the denominators as whole numbers if the student is able to identify the least common multiple, this value is the most useful common denominator for addition and subtraction of two fractions.

And then, carelessness were manifested errors in all types of item, so it is required to train the students for the concentration to the problems especially when working with mathematics. This type of error was mostly occurred in the operations of the qualified students due to insufficient time, anxiety, tired, many steps involved in one problem and so many similar type of problems.

Most of the average students and under-qualified students made most of the random errors than qualified students. These errors includes many types of error that affected by the misconceptions of the basic concept of the fractions' operations and other factors. More specifically, these errors made by the students may be a lack of mastery in the operations of unique pattern of fractions and basic mathematical skills that involve addition, subtraction, multiplication and division, negligence in describing information from the problems, guesswork, confusion and so on.

Conclusion

Error analysis can prove to be a useful tool in diagnostic assessment process. Mathematical errors can provide valuable insight for the teacher into the pupils' thinking as well as for the students themselves, for "unless students are forced to confront explicitly the conflict between their misconceptions and the scientific principles they have learned, the connections may never be made; the misconceptions and the scientific principles may coexist as separate islands of knowledge" (Hiebert & Carpenter, 1992).

An analysis of the 'partially' incorrect answers gives insight into content/skills that could be developed in learners. Evidence from the test results, it appears that many Grade 5 students still have problems in doing fractions work, appearing to lack the basic factual knowledge. Not only have students lacked the concept knowledge but they also lacked the mechanical skills to perform calculations. Generally, most misconceptions in mathematics are a challenge for students. Factors that contribute to misconceptions should also be delicately considered.

References

- Brown J., Skow K., & the IRIS Center. (2016). *Mathematics: Identifying and addressing student errors*. Retrieved from http://iris.peabody.vanderbilt.edu/case_studies/ics-matherr.pdf.
- Brueckner, L. J. (1980). *Diagnostic and remedial teaching in arithmetic*. Minneapolis, MN: Winston.
- ERIC.(2002). *Diagnostic Assessment*. Retrived November 3, 2003, from [http://www.defs.gov.uk/readwriteplus/ learningInfrastructure](http://www.defs.gov.uk/readwriteplus/learningInfrastructure)
- Hiebert, J. & Carpenter, T. (1992). *Learning and Teaching with Understanding*. In Grouws, D.A. (Ed.). *Handbook of Research on Mathematics Teaching and Learning*, Macmillan, New York.
- Idris, N. (2011). *Error Patterns in Addition and Subtraction of Fractions among Form Two Students*. Journal of Mathematics Education © Education for All December 2011, Vol. 4, No. 2. University of Malaya.
- Joshi, P.N., & Mehendale, M. (2011). *Identifying Learning Difficulties and Types of Error Patterns in Basic Arithmetic Skills Made By Primary School Students*. Golden Research Thoughts.
- Wittmann, G. (2011). *The consistency of Students' Error Patterns in Solving Computational Problems with Fractions*. Padagogische Hochschule Freiburg, Germany.

PERCEIVED SOCIAL SUPPORT AND ACADEMIC ENGAGEMENT OF HIGH SCHOOL STUDENTS IN PYINMANA TOWNSHIP

Myo Ko Aung¹, Hnin Myat Noe Tun²

Abstract

The primary purpose of the present study is to investigate the impact of perceived social support on academic engagement of high school students in Pyinmana Township. Moreover, the present study is to examine the relationship between perceived social support and academic engagement in terms of gender, locality, subject combination, parents' education level and parents' job. Descriptive survey research method and quantitative data analysis were applied in this study. As the research instruments, Child and Adolescent Social Support Scale (CASSS) developed by Malecki and Demaray, and Elliot (2000) and Student Course Engagement Questionnaire (SCEQ) developed by Handelsman and colleagues (2005) were applied. A total of 900 high school students (450 males and 450 females) selected from six schools in Pyinmana Township participated in this study. After that, the data were analyzed by using descriptive statistics, independent sample *t* test and ANOVA test. According to the descriptive statistics, the Grade 10 students from Pyinmana Township were good in perceived social support and academic engagement. The result of this study revealed that students were significantly different in perceived social support and academic engagement with respect to gender, subject combinations and mothers' education level. The students were not significantly different in perceived social support and academic engagement with respect to locality, fathers' education level and fathers' job and also mothers' job. The result revealed that there was positively significant relationship between perceived social support and academic engagement. Therefore, it could be interpreted that students who perceive greater social support will be better in academic engagement.

Keywords: Social Support, Perceived Social Support, Academic Engagement, Student Engagement

Introduction

Academic failure and dropout are prevalent challenges at all levels of the education system. Research so far pointed out that social support is the main factor to foster learning and persistence. On the other hand, some scholars highlighted the role of student engagement itself in developing performance on academic tasks. Social support is considered to be a valuable resource to cope with stress and also to achieve school and academic activities.

Importance of the Study

Students of adolescent period are known to be a period of transition with special needs. Researchers have hypothesized the transition from middle school to high school as a difficult and challenging experience for many students (Roybal et al., 2014). High school demands more academic requirements compared to middle school, underscoring the importance of having sufficient skills to meet the demands for educational success (Crosnoe et al., 2015). Without support from teachers, parents, and leaders, at-risk children transitioning to high school may face challenges that can affect their academic performances (Crosnoe et al., 2015; Roybal et al., 2014).

Researchers have regarded that there is a relationship between student engagement and academic success (Lee, 2014; Weiss & Garcia, 2015). Fostering student engagement is often regarded as a precursor to learning and academic success among students (Lee, 2014). Many researchers revealed many resources which are supported to students to become more engage in academic performance. One of the resources to get higher achievement in academic performance is to have social support in student engagement. Research has consistently

¹ Dr, Professor, Department of Educational Psychology, Sagaing University of Education

² Senior Assistant Teacher, Basic Education High School (Branch), Khit Aye, Zayarthiri

shown that low levels of social support are related to poor academic outcomes for adolescents (Richman, Rosenfeld, & Bowen, 1998). Conversely, high levels of social support can mitigate the negative impact of academic outcomes (Harnre & Painta, 2006).

Based on the above reasons, this study aims to investigate perceived social support and academic engagement of Grade 10 students in Pyinmana Township. It is essential to produce students who actively engage in their academic and quailed and educated leaders of our country by enhancing physical and emotional support in their academic tasks.

Aim of the Study

The main aim of the study is to investigate perceived social support and academic engagement of Grade 10 students in Pyinmana Township.

The specific objectives of the study are as follows:

1. To find out whether perceived social support of students differs according to gender, locality, subject combination, parents' education level and parents' job.
2. To explore whether academic engagement of students differs according to gender, locality, subject combination, parents' education level and parents' job.
3. To investigate the relationship between perceived social support and academic engagement of Grade 10 students.
4. To examine whether perceived social support impact on academic engagement of Grade 10 students.

Definition of Key Terms

Social Support is defined as one's perception of supportive behaviors from individual in his or her social network (e.g. parents, teachers, classmates, close friends, school), that enhance functioning and/or may buffer him or her from adverse outcomes. (Malecky & Demaray, 2002)

Perceived Social Support is defined as perception of how much social support one has necessary. (Lahey and Cohen, 2000)

Academic engagement is students' active involvement in academic activities. (Harrison, 2013)

Student engagement is defined as a student's willingness, need, desire and compulsion to participate in and be successful in the learning process promoting higher level thinking for enduring understanding. (Saeed, S., & Zyngier, D., 2012)

Review of Related Literature

Perceived Social Support: Israel and Schurman (1990) described social support as the physical and emotional comfort given to individual by their family, friends and other significant persons in their lives. According to Crockenburg (1987) teenagers who receive more social support are less likely to exhibit angry and hostile behaviors throughout adolescence and have a decreased probability of exhibiting such behaviors in adulthood. It has also been stated that social support relates positively to students' satisfaction with their schooling experience (DeSantis King, Huebner, Suldo, & Valois, 2006). Some scholars supported the existence of four main types of social support, emotional, instrumental/tangible, informational and personal feedback.

Emotional support is what people most often think of when they talk about social support; it is defined by perceptions of care and warmth. Instrumental (i.e., tangible) support relates to concrete helping behaviors (Tardy, 1988) such as giving advice, loaning money, or sacrificing one's time. Finally, informational support includes the accessibility of advice and/or guidance that is helpful in solving one's personal problems (Vaux, Burda, & Stewart, 1986), while

appraisal support alludes to non-critical personal feedback which the recipient values as honest and helpful.

Academic Engagement: Hu and Kuh (2001) mentioned that student engagement is the quality of effort students devote to educationally purposeful activities that directly contribute to desirable educational outcomes. Similarly, many scholars revealed that student engagement is a precursor to several key factors in a student's life and school performance, such as academic achievement, dropout rate, motivation in learning, student boredom, and disaffection. According to Handelsman, Briggs, Sullivan, and Towler (2005) student engagement is comprised of four different factors: skills, emotional, participation, interaction, and performance.

Methodology

Research Design and Method

In this study, descriptive survey research design and quantitative research method were used.

Participants

Table 1 Selected Schools and Number of Grade 10 Students in Pyinmana Township

School	Number of Students		
	Male	Female	Total
School 1	100	73	173
School 2	100	100	200
School 3	50	53	103
School 4	87	94	181
School 5	66	77	143
School 6	47	53	100
Total	450	450	900

Instrumentation

Child and Adolescent Social Support Scale (CASSS): In order to investigate students' perceived social support, Child and Adolescent Social Support Scale (CASSS; Malecki, Demaray, & Elliot, 2000) was used. It was composed of 36 items. To collect the responses, five point Likert scales was used.

Student Course Engagement Questionnaire (SCEQ): For examining students' academic engagement, Student Course Engagement Questionnaire (SCEQ; Hendelsman and colleagues, 2005) was used. It was composed of 23 items. To analyze the responses, four point Likert scales was used.

Data Analysis and Findings

Descriptive Statistics of Grade 10 Students' Perceived Social Support

Students' perceived social support consists of three sources, namely, parent support, teacher support and classmate support. By conducting the descriptive statistics, the results of students' perceived social support are shown in Table 2.

Table 2 Descriptive Statistics for Grade 10 Students' Perceived Social Support

Variables	N	Minimum	Maximum	Mean	SD
Perceived Social Support	900	57	180	133.64	22.285

According to Table 2, it can be shown that the mean and standard deviation of students' perceived social support for the whole sample were 133.64 and 22.285. The highest score for the perceived social support of students was 180 and lowest score was 57. It was found that the level of perceived social support for Grade 10 students in Pynmana Township was good as the observed mean score 133.64 was higher than theoretical mean score 90.

Comparison for Grade 10 Students' Perceived Social Support by Gender

In order to find out the mean score for students' perceived social support, descriptive statistics was used. The mean score of perceived social support for female students was greater than that of male students.

In order to examine whether these differences were significantly different or not, the independent sample *t* test was conducted. The results can be seen in Table 3.

Table 3 Result of Independent Samples *t* Test for Students' Perceived Social Support by Gender

Gender	N	Mean	SD	<i>t</i>	Df	<i>p</i>	MD
Male	450	128.80	21.822	-6.679	897.975	.000	-9.691
Female	450	138.49	21.706				

The result of *t* test stated that there was significant difference in perceived social support by gender. It was revealed that male students were significantly different from female students of perceived social support ($t=-6.679$, $p<0.001$). In comparing mean scores for perceived social support between males and females, the mean score of female students (Mean=138.49) were higher than male students (Mean=128.80). Therefore, mean score of female students for perceived social support exceeded (6.679) that of the male students. The result is similar to a study by Lian and Geok (2009) that females have been found to receive more perceived social support than males. Moreover, the study of social support by Rueger, Malecki and Demaray (2008) found that females receive higher levels of classmate and close friend support than males. Furthermore, Demaray and Malecki (2002) found that females obtained high scores in all sources of social support than males. Therefore, it could be interpreted that female have high perceived social support more than male students.

Comparison for Grade 10 Students' Perceived Social Support Dimensions by Gender

In order to find out the mean score for students' perceived social support dimensions, descriptive statistics was used. It can be seen in Table 4.

Table 4 Means and Standard Deviations of Students' Perceived Social Support Dimensions by Gender

Dimensions	Gender	N	Mean	SD
Parent Support	Male	450	43.52	8.551
	Female	450	46.81	8.299
Teacher Support	Male	450	45.58	8.991
	Female	450	48.51	8.351
Classmate Support	Male	450	39.69	10.080
	Female	450	43.17	10.200

According to Table 4, it was represented that the mean score of perceived social support dimensions for female students was greater than that of male students.

In order to examine whether these differences were significantly different or not, the independent sample *t* test was conducted. The results can be seen in Table 5.

Table 5 Result of Independent Samples *t* Test for Students' Perceived Social Support Dimensions by Gender

Dimensions	Gender	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Parent Support	Male	-5.851	898	.000	-3.287
	Female				
Teacher Support	Male	-5.067	898	.000	-2.931
	Female				
Classmate Support	Male	-5.138	898	.000	-3.473
	Female				

The result of *t* test stated that there was significant difference in all perceived social support dimensions by gender.

Comparison for Students' Perceived Social Support by Mothers' Education Level

In order to examine whether there was significantly differences in students' perceived social support by mothers' education level or not, the mean comparison by the types of mothers' education were studied. Mothers' education levels were categorized as primary, middle, higher, and graduate. To be clear, the descriptive statistics of mothers' education was represented in Table 6.

Table 6 Means and Standard Deviations of Students' Perceived Social Support by Mothers' Education Level

Mothers' Education Level	<i>N</i>	Minimum	Maximum	Mean	<i>SD</i>
Primary	291	67	179	132.40	21.883
Middle	433	57	180	133.18	22.256
Higher	148	58	180	137.66	22.995
Graduate	28	88	164	132.39	21.871

Table 6 indicates the means and standard deviations of the students' perceived social support according to their mothers' education level. Among the students, the mean score of students whose mothers' education level of higher education was slightly higher in perceived social support than others. In order to investigate whether perceived social support differs significantly across mothers' education level, one-way ANOVA was used.

Table 7 ANOVA Result of Students' Perceived Social Support According to Mothers' Education Level

Perceived Social Support	Sum of Square	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Between groups	3945.981	3	992.840	2.006	.112
Within groups	442535.098	896	494.981		
Total	446481.079	899			

The ANOVA result shows that there was no significant difference in perceived social support for students according to their mothers' education level.

Comparison for Students' Perceived Social Support Dimensions by Mothers' Education Level

In order to examine whether there was significantly differences in students' perceived social support dimensions by mothers' education level or not, the mean comparison by the types of mothers' education was studied. The scales of mothers' education were categorized primary,

middle, higher, and graduate. To be clear, the descriptive statistics of mothers' education was represented in Table 8.

Table 8 Means and Standard Deviations of Students' Perceived Social Support Dimensions by Mothers' Education Level

Dimensions	Mothers' Education Level	N	Minimum	Maximum	Mean	SD
Parent Support	Primary	291	17	60	44.70	8.429
	Middle	433	12	60	45.08	8.453
	Higher	148	15	60	46.47	9.030
	Graduate	28	24	59	44.46	9.418
Teacher Support	Primary	291	17	60	47.47	8.372
	Middle	433	12	60	46.37	9.179
	Higher	148	13	60	48.09	8.643
	Graduate	28	31	56	47.50	7.250
Classmate Support	Primary	291	15	60	40.22	10.052
	Middle	433	12	60	41.74	10.172
	Higher	148	18	60	43.11	10.840
	Graduate	28	17	57	40.43	10.308

According to Table 8, the mean score of students whose parents' education level are higher was slightly higher in all social support dimensions than others. But, there was significant difference only in classmate support dimension by mothers' education level. Thus, one-way ANOVA analysis was used.

Table 9 ANOVA Result of Students' Classmate Support Dimension According to Mothers' Education Level

Classmate Support	Sum of Square	df	Mean Square	F	p
Between groups	1089.738	3	304.705	2.900	.034
Within groups	93964.852	896	105.067		
Total	95054.590	899			

The ANOVA result showed that classmate support statistically across mothers' education level was significantly different at 0.05 level ($p < 0.05$). This means that the classmate support of students was significantly different according to their mothers' education level. To get more information about which level of mothers' education differed on classmate support, the Post-Hoc analysis was applied.

Table 10 Result of Tukey (HSD) Multiple Comparison for Classmate Support Dimension by Mothers' Education Level

Variable	(I) Mothers' Education Level	(J) Mothers' Education Level	Mean Difference (I-J)	p
Classmate Support	Primary	Higher	-2.892*	.042

Note: *.The mean difference is significant at 0.05level.

According to Table 10, it was observed that the mean difference in classmate support between students whose parents have higher education and students whose parents have primary education was 2.892 and it was significantly different ($p < 0.05$). Thus, students whose parents with higher education received greater classmate support than students whose parents with primary education.

Descriptive Statistics for Grade 10 Students' Academic Engagement

As already mentioned above, student academic engagement was comprised of four different factors: skills, emotional, participation/interaction and performance. By using the descriptive statistics with the data obtained from the Student Course Engagement Questionnaire, the sample students' academic engagement is described in Table 11.

Table 11 Descriptive Statistics for Grade 10 Students' Academic Engagement

Variables	N	Minimum	Maximum	Mean	SD
Academic Engagement	900	33	115	72.43	9.461

According to Table 11, it can be shown that the mean and standard deviation of students' academic engagement for the whole sample were 72.43 and 9.461. The highest score for the academic engagement of students was 115 and lowest score was 33. It was found that the level of academic engagement for Grade 10 students was good as the observed mean score 72.43 was higher than theoretical mean score 46.

Comparison for Grade 10 Students' Academic Engagement by Gender

In order to find out the mean score for students' academic engagement, descriptive statistics was used. The mean score of academic engagement for female students was greater than that of male students. In order to examine whether these differences were significantly different or not, the independent sample *t* test was conducted.

Table 12 Result of Independent Samples *t* Test for Students' Academic Engagement by Gender

Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Male	450	70.43	.461	-6.511	898	.000	-4.016
Female	450	74.44	.410				

The result of *t* test stated that there was significant difference in academic engagement by gender. It was revealed that male students were significantly different from female students of academic engagement ($t=-6.511$, $p=.000$). The result is similar to previous research findings (Ruslin Amir, Anisa Saleha, Zalizan Mohd Jelas, Abdul Razaq and Hukemri, 2014) that females students are more emotionally engaged in school activities and learning tasks than the male students. Therefore, it could be interpreted that female have high academic engagement more than male students.

Comparison for Grade 10 Students' Academic Engagement Dimensions by Gender

In order to find out the mean score for students' academic engagement dimensions, descriptive statistics was used. It can be shown in Table 13.

Table 13 Means and Standard Deviations of Students' Academic Engagement Dimensions by Gender

Dimensions	Gender	N	Mean	SD
Skill	Male	450	27.71	4.240
	Female	450	29.86	3.563
Emotional	Male	450	15.28	2.573
	Female	450	15.81	2.428
Participation	Male	450	18.01	3.066
	Female	450	18.68	2.944
Performance	Male	450	9.43	1.567
	Female	450	10.09	1.323

According to Table 13, it was represented that the mean score of academic engagement dimensions for female students was greater than that of male students. In order to examine whether these differences were significantly different or not, the independent sample *t* test was conducted.

Table 14 Result of Independent Samples *t* Test for Students' Academic Engagement Dimensions by Gender

Dimensions	Gender	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Skill	Male Female	-8.222	872.154	.000	-2.147
Emotional	Male Female	-3.225	898	.001	-.538
Participation	Male Female	-3.349	898	.001	-.671
Performance	Male Female	-6.827	873.481	.000	-.660

The result of *t* test stated that there was significant difference in all academic engagement dimensions by gender.

Comparison for Students' Academic Engagement by Subject Combinations

In order to examine whether there was significantly differences in students' academic engagement by subject combinations or not, the mean comparison by the types of subject combinations was studied. The scales of subject combinations were categorized as combination 1, combination 2, and combination 7.

Table 15 Means and Standard Deviations of Students' Academic Engagement by Subject Combination

Combinations	<i>N</i>	Minimum	Maximum	Mean	<i>SD</i>
Combination 1	601	33	115	72.39	9.641
Combination 7	221	43	92	72.00	9.262
Combination 2	78	48	86	74.01	8.521

The mean scores of students' academic engagement according to their subject combinations as combination 1, combination 7 and combination 2 were 72.39, 72.00 and 74.01 respectively. Among the students who take combination 2 was slightly higher in academic engagement than others. In order to investigate whether academic engagement differs significantly across students' subject combinations, one-way ANOVA was used.

Table 16 ANOVA Result of Students' Academic Engagement According to Different Subject Combinations

Academic Engagement	Sum of Square	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Between groups	238.038	2	119.019	1.331	.265
Within groups	80237.094	897	89.450		
Total	80475.132	899			

The ANOVA result showed that there was no significant difference in academic engagement for students according to their subject combinations.

Comparison for Students' Academic Engagement Dimensions by Subject Combinations

In order to examine whether there was significantly differences in students' academic engagement dimensions by their subject combinations or not, the mean comparison by the types of subject combinations was studied. The scales of subject combinations were categorized combination 1, combination 2, and combination 7. To be clear, the descriptive statistics of students' subject combinations was represented in Table 17.

Table 17 Means and Standard Deviations of Students' Academic Engagement Dimensions by Subject Combination

Dimensions	Combinations	N	Minimum	Maximum	Mean	SD
Skill	Combination 1	601	13	45	28.66	4.132
	Combination 7	221	19	36	28.94	3.919
	Combination 2	78	17	35	29.32	3.870
Emotional	Combination 1	601	5	25	15.67	2.539
	Combination 7	221	8	20	15.06	2.582
	Combination 2	78	10	19	15.91	1.895
Participation	Combination 1	601	7	30	18.33	3.038
	Combination 7	221	8	24	18.20	2.984
	Combination 2	78	11	24	18.83	3.000
Performance	Combination 1	601	3	15	9.73	1.512
	Combination 7	221	6	12	9.80	1.427
	Combination 2	78	6	12	9.95	1.458

Table 17 indicates the means and standard deviations of the students' academic engagement dimensions according to their subject combinations. The mean score of students who took combination 2 was higher in all dimensions of academic engagement than others. In order to investigate whether academic engagement dimensions differ significantly across students' subject combinations, one-way ANOVA was used.

Table 18 ANOVA Result of Students' Emotional Engagement According to Different Subject Combinations

Emotional Engagement	Sum of Square	df	Mean Square	F	p
Between groups	71.657	2	35.829	5.727	.003
Within groups	5611.565	897	6.256		
Total	5683.222	899			

The ANOVA result showed that emotional engagement statistically across subject combination was significantly different at 0.01 level ($p < 0.01$). To get more information about which level of subject combination differed on emotional engagement, the Post-Hoc analysis was applied.

Table 19 Result of Games-Howell for Students' Emotional Engagement According to Different Subject Combinations

Dimension	Subject Combination (I)	Subject Combination (J)	Mean Difference(I-J)	p
Emotional Engagement	Combination 1	Combination 7	.611*	.008
	Combination 7	Combination 1	-.611*	.008
		Combination 2	-.847*	.007

Note: *.The mean difference is significant at 0.05 level.

According to Table 19, the mean difference between students who took combination 1 and students who took combination 7 was .611 and then it was also significantly different ($p < 0.05$). And, the mean difference between students who took combination 2 and students who took combination 7 was .847 and it was significantly different ($p < 0.05$). Therefore, combination 1 and combination 2 students were more emotionally engaged than combination 7 students.

Relationship between Perceived Social Support and Academic Engagement of Students

In order to explore the relationship between perceived social support and academic engagement of students, Pearson Product-Moment correlation coefficient was calculated.

Table 20 Relationship between Perceived Social Support and Academic Engagement of Students

Variables	Perceived Social Support	Academic Engagement
Perceived Social Support	-	.615**
Academic Engagement	.615**	-

Note: ** Correlation is significant at 0.01 level (2-tailed).

It was found that there was a significant positive relationship between perceived social support and academic engagement of students ($r = .615$, $p < 0.01$), which indicates that as perceived social support increases, academic engagement increases accordingly. It can be interpreted that students who perceive greater social support will be better in academic engagement.

In order to find out the inter-relationship between perceived social support dimensions and academic engagement dimensions, Pearson Product-Moment correlation was computed.

Table 21 Inter-relationship between Perceived Social Support Dimensions and Academic Engagement Dimensions

Variables	1	2	3	4	5	6	7
1.Parent Support	-						
2.Teacher Support	.532**	-					
3.Classmate Support	.450**	.443**	-				
4.Skill	.430**	.396**	.421**	-			
5.Emotional	.378**	.323**	.428**	.701**	-		
6.Participation	.438**	.474**	.498**	.619**	.617**	-	
7.Performance	.405**	.384**	.408**	.662**	.494**	.537**	-

Note: ** Correlation is significant at 0.01 level (2-tailed).

According to Table 21, the dimensions of perceived social support were significantly inter-correlated with dimensions of academic engagement. Thus, it can be found that all the dimensions of perceived social support were positively correlated to students' academic engagement dimensions. It means that if students receive more social support, then they will be more academically engaged.

Prediction of Academic Engagement by Using Simple Linear-Regression

In order to predict whether there was correlation between students' social support and academic engagement, simple linear regression analysis was conducted.

Table 22 Correlation between Perceived Social Support and Academic Engagement

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.615*	.378	.378	7.464

a. Predictor: Perceived Social Support

b. Dependent Variable: Academic Engagement

According to Table 4.45, the result revealed that the multiple correlation coefficient (R), using all the predictors simultaneously, is .615 ($R^2=.378$) and the adjusted R^2 is .378, meaning that 37.8% of the variance in academic engagement can be predicted from perceived social support.

Conclusion

Students retain more content and learn more effectively when they are actively engaged in their own learning. Perceiving greater social support could help students' better academic engagement. In order to improve sense of perceived social support and academic engagement, the society and community should value students' achievements and should give proper motivation to adolescents so that they emphasize in their successful life.

According to the result, students who perceived greater social support will be better in academic engagement. Therefore, the study of perceived social support and academic engagement truly contributes students' successful life by perceiving social support from their surviving environment.

Acknowledgements

We would like to offer respectful appreciation to Dr. Saw Pyone Naing (Rector, Sagaing University of Education), Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) for their encouragement administrative supports, official permission and providing facilities throughout the research. We would like to express our indebtedness to Headmasters and Headmistresses from selected schools from Pyinmana Township for their permission to conduct this study.

References

- Abdull , S. S., Nurahimah, M. Y., Izam, M. G., Rafish , H. O., & Nur, F. M. (2014). The Relationship Between Lecturers' Teaching Style And Students' Academic Engagement. *Social and Behavioral Sciences* 118, 10-20.
- Adva, H. J. (2016). *The relationship between student engagement and academic success*. The University of Auckland.
- Albert, B. (1994). *Academic Press*. New York: Encyclopedia of Human Behavior.
- Anderson, Amy, R., Christenson, Sandra , L., Sinclair, Mary, F., . . . Camilla, A. (2004). The importance of relationship for promoting engagement with school. *Journal of School Psychology*, 42,95-113.
- Bloom, J. (1990). The relationship of social support and health. *Journal of Social Science and Medicine*.30, 277-280.
- Burcu, O. C., & Burcu, A. M. (2013). Satisfaction and Academic Engagement among Undergraduate Students. *International Journal of Research in Business and Social Science*.
- Christine , K. M., & Michelle, K. D. (2002). Measuring Perceived Social Support: Development of the Child and Adolescent Social Support Scale(CASS). *Psychology in the Schools*, Vol, 39(1), 2-11.
- Cohen, S., & Willls, T. A. (1985). Stress, Social Support and the Buffering Hypothesis. *Psychological Bulletin*98(2), 310-357.
- Ducan, T. E., & McAuley, E. (1993). Social support and efficacy cognitions in exercise adherence. *Journal of Behavioral Medicine* . 16, 199-217.
- Dworetzky, J.P. (1981). *Introduction to Child Development* (3rd ed).New York: West. Eisen,

- Emmons, R. A., & King, L., A (1988). Conflict among personal surviving: Immediate and long-term implications for psychological and physical well-being. *Journal of Personality and Social Psychology*, 54, 1010-1018.
- Enock, A. (2019). *Teacher's Perception of Academic Performance and Student Engagement among Ninth Grade Students*. Walden University.
- Ercan, K. (2014). The Perceived Parental Support, Autonomous-Self and Well-Being of Adolescents: A Cluster-Analysis Approach. *Journal of Child and Family Studies*.
- Finn, J. D., & Voelkl, K. E. (1993). School Characteristics related to Student Engagement. *Journal of Negro Education*, 249-268.
- Frish, M. B., Cornell, J., Villanueva, M., & Retzlaff, P. J. (1962). Clinical validation of the Life Inventory. A measure of life satisfaction for use in treatment planning and outcome assessment. *Psychological Assessment*, 4(1), 92-101.
- Gregory, S. C. (2011). Taiwan Student Engagement Model: Conceptual Framework and Overview of Psychometric Properties Dworetzky, J.P. (1981). *Introduction to Child Development* (3rd ed). New York: West. . Research Gate.
- Gender, F., Proyer, R.T., Ruch, W., & Wyss, T. (2003). Strength-based positive intervention: Further evidence for their potential in enhancing well-being and alleviating depression. *Journal of Happiness Studies*, 14 (4), 1241-1259. doi:10.1007/s 10902-012-9380-0
- Glass T. A., Matchar, D. B., Belyea, M., & Feussner, J. R. (1993). *Impact of social support on outcome in first stroke*, 24,64-70.
- Gore, S. (1981). Stress-buffering functions of social supports: An appraisal and clarification of research models. In B. S. Dohrenwend & B.P. Dohrenwend (Eds.), *stressful life events and their contexts* (202-222). New York: Prodist
- Gregory, T., & Brinkman, S. (2015). *Development of the Australian Student Wellbeing survey: Measuring the key aspects of social and emotional wellbeing during middle childhood*. Published by the Fraser Mustard Centre. Department for Education and Child Development and the Telethon Kids Institute Adelaide. Retrived on 10, October, 2017, from <http://www.decd.sa.gov.au/sites/g/files/net691/f/development-australian-student-wellbeing-survey-report-pdf>
- Harari, M.J., Waehler, C. A., & Rogers, J. R. (2005). An empirical investigation of a theoretically based measure of perceived wellness. *Journal of Counseling Psychology*, 52(1), 93-103.
- Harlow, R.E., & Cantor, N. (1996). Still participating after all these years: A study of life task participation in later life. *Journal of Personality and Social Psychology*, 71, 1235-1249
- Hazel, C., Jack, C., Wonner, R., Albanes, J., & Gallagher, J. (2008). *Measuring Student School Engagaemnent: Aanalysis of Three Models*. University of Denver.
- Henderson, S. (1981). Social relationships, adversity, and neurosis: an analysis of perspective observations. *British Journal of Psychiatry* 138, 391-398.
- Horstmanshof, L., & Zimitat, C. (2007). Future Time Orientation Predict Academent Engagement among First Year University Students. *British Journal of Educational Psychology*, 703-718.
- Jaclyn, E. T., Michelle, K. D., Christine, K. M., Melissa, N. T., Michael, C., & Nathan, E. (2014). Students' Ratings of Teacher Support and Academic and Social- Emotional Well-Being . *School {sychology Quarterly*.
- JJ, A., SL, C., & D, K. (2006). Measuring Cognitive and Psychological Engagement: Validation of the Student Engagement Instrument. *Journal of School Psychology*, 44 (5), 427-445.
- Joe, E. P. (2018). *Behavioral, Affective and Cognitive Engagement of High School Music Students: Relation to Academic Achievement and Ensamble Ratings*. South Florida: University of South Florida.
- Kenny, G., Kenny, D., & Dumont, R. (1995). Mission and Place: Strengthing Learning and Community Through Campus Design. *Orxy/Greenwood*, 37.
- Khu, G. D. (2009). Improving undergraduate success through student engagement. *Presentation to Council for Higher Education, Pretoria*.

- Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, 74(1), 262-273.
- Krause, K., & Coates, H. (2008). Students' Engagement in First Year University. *Assessment and Evaluation in Higher Education*, 33 (5), 493-505.
- L. C. H., j. (2014). Perceived Social Support and Academic Engagement. *Kelaniya Journal of Management*, 85-92.
- LINDA, L. K. (2009). *Resilience of Urban Middle School Students: The Role of Social Support*. Wayne State: Wayne State University.
- M., Ware, J., Donald, C., & Brook, R. (1980). Measuring components of children' Health status. *Medical Care*. 17. 902-921
- Mitchell, M. H., William, L. B., & Annette, T. (2005). A Measure of College Student Course Engagaement. *The Journal of Educational Research*, 184-192.
- Nadia , K. (2012). *A Comparative Study of Student Engagement, Satisfaction and Academic Success among International and American Students*. Iowa State University.
- Natilia, M. (2014). Vygotsky's Theory: LESSONS FOR STUDENT ENGAGEMENT RSEARCH.
- Newman, F. (1989). Student Engagaement and High School Reform. *Educational Leadership*, 46(5), 34-36.
- Nicholls, J. G., Patashinck, M., & Nolen, S. B. (1985). Adolescent's Theory of Education. *Journal of Educational Psychology*, 77, 683-692.
- Paul, V., Monique, B., & Gerard , S. (2005). Perceived Social Support and Well Being in School. *Journal of Youth and Adolescent*, 269-278.
- Sarah, F. (2016). The Importance of Student Engagement. *Panorama Education*.
- Shelley, R. H., Kaitlyn, S., & Shane, R. J. (2011). The Student Engagement in School Questionnaire (SCEQ) and the Teacher Report Form- New (TERF-N). *Contemporary School Psychology*.
- Tiffany, N. W. (2009). *The Influenlce of Perceived Social Support from parents, teachers and classmates on early Asolescents' mental health*. South Florida: University of South Florida.
- Vicki, T. (2010). Student Engagement Literature Review. *Research Gate*.

AN INVESTIGATION INTO FACTORS INFLUENCING DROPOUT STUDENTS IN MEIKHTILA TOWNSHIP

Khin Khin Thant¹ and Thu Thu Htike²

Abstract

Dropouts are defined as students who are enrolled in school at any time during the school year, but are not enrolled at the end of the school year and did not transfer, graduate, or die. Nowadays, the nation is facing a dropout crisis. To address this crisis requires a better understanding of why students drop out. The primary purpose of this study is to investigate factors influencing dropout students in Meikhtila Township. The specific objectives of this study are to examine family factors influencing dropout students, to analyze school factors influencing dropout student, to investigate community factors influencing dropout students and to examine other factors influencing dropout students. Descriptive research design and survey method were used. The sample was formed of 500 dropout students (239 males and 261 females). The data were collected through dropout student questionnaire to find out factors influencing dropout students. According to descriptive statistics, all these family, school, community and other factors are affecting on dropout students. For more detail information, a Pearson chi-square test was conducted. Finally, the various reasons of dropping out of students responded on opened question were described. Based on the factors that affect on dropout students, discussions and suggestions were given in this study. In fact, understanding the factors influencing dropout students will lead to the prevention of dropout. Therefore, this result will be necessary for the youth's development and will also be a profit for education progress.

Keywords: dropout, student, dropout students:

Introduction

In the Republic of the Union of Myanmar, the establishment of many schools through the whole country aims to address the educational needs of youths (school age) learners by providing a high level of studies. For implementing the first goal of EFA National Action Plan, "Ensuring that significant progress is achieved so that all school-age children have access to and complete free and compulsory Basic Education of good quality External resources provide students with academic and social opportunities that contribute positively to their achievement and school retention, such as classroom facilities, free text-books for basic primary school students. Nevertheless, school dropout is widely as a negative life event which is often followed by further problems, and so should be emphasized as a subject of interest for academics, researchers and policy makers. Many researchers concluded that school dropout problem is one of the most significant issues in almost all countries.

Today, student dropout is a serious problem, both for individuals and society as a whole. Actually, the nation's dropout rates are particularly alarming, because there are few employment opportunities that pay living wages, and benefit rare for those who have neither completed a high school education nor access necessary basic skills. Dropouts are less likely to find and hold jobs that pay enough money to keep them off public assistance. Leaving school without a qualification implies a strong decrease in future employment opportunity (Solaga 2002). Even if they find a job, dropout's earns substantially less than high school graduates. On average, youths who dropouts are more likely to experience many negative outcomes in life. Actually, school dropout is an urgent and serious problem not only for individuals themselves but also for the society as a whole. Therefore, it is necessary to investigate factors influencing dropout students for the prevention of dropping out.

¹ Associate Professor, Department of Educational Psychology, Sagaing University of Education

² Assistant Lecturer, Taungyi Education College

Aim of the Study

The main aim of this study is to investigate the factors influencing dropout students. The specific objectives of the study are –

1. To examine family factors influencing dropout students.
2. To examine family factors influencing dropout students.
3. To analyze school factors influencing dropout students.
4. To investigate community factors influencing dropout students.
5. To explore other factors influencing dropout students.

Definitions of the Key Terms

- Dropout : A person who has left high school prior to completion (Stillwell & Hoffman, 2008).
- Student : A person who is enrolled in a school or other educational institution (Wikipedia Dictionary).
- Dropout students : Students, who are enrolled in school at any time during the school year, but are not enrolled at the end of the school year and did not transfer, graduate, or die (Stillwell & Hoffman, 2008).

Review of Related Literature

The completion of Basic Education by all citizens is the basis from which to achieve Universalisation of Basic Education. School enrolment rate activities begun in 1999/2000, have been particularly effective in bringing increased number of school going-age children to school, although further gaps must be filled to significantly raise the percentage of children who complete the primary circle. Today's existing primary net enrollment rates indicate that the population of out-of-school children remains a challenge to address.

Finn's Models for School Dropout

Finn's (1993) theory has been extremely influential in supporting the notion that school engagement is integral to school completion. His model of drop-out prevention suggests students must both actively participate in school and have a feeling of identification with school in order for them to remain in school and graduate. Student participation includes behavioral indicators such as attending school, being prepared for work, and being involved in extracurricular activities. The psychological indicators of identification with school include the feelings and sense of belonging associated with school engagement. Finn's theory suggests that student participation in activities is directly related to successful school performance, which promotes identification with school.

Theories Related to School Dropout

Multiple theories have been related to the dropout problem. Many of these theories contain strands relating to social capital theory.

Five Different Theories of School Dropout

Battin-Pearson, S., Newcomb, M. D., Abbott, R. D., Hill, K. G., Catalano, R. F., & Hawkins, J. D. (2000) presented five different theories. Academic mediation theory states that the relationships between general deviant behaviors, associations with other students practicing deviant behaviors, lack of social bonding in school, lack of parental expectations and education. General deviance theory predicts dropout tendencies based on deviant student behaviors (Battin-Pearson et al.). Deviant affiliation theory provides an explanation for the tendency to drop out of

school based on bonding with antisocial peers (Battin-Pearson et al., 2000). Poor family socialization theory relates that the tendency to drop out of school is due to lack of high expectations from parents and/or lack of parental education (Battin-Pearson et al., 2000). Structure strains theory states that demographic indicators of dropout tendency are based on gender, socioeconomic status, and race (Battin-Pearson et al.) (cited in Drewry, 2007).

Social Capital Theory

According to Coleman (1988), social capital is a resource available to individuals, much like human capital. Coleman's definitions are the relationships available to individuals in all aspects of life: home, work, school, church, and community, among others. Within these relationships, individuals develop networks of information channels for gathering data upon which action is based. Israel and Beaulieu (2004) separated social capital into three dimensions; family social capital, school social capital and community social capital. Family social capital involved aspects of social capital related to the relationships between parents and children that impact educational attainment. The aspects of social capital included parental aspirations for child, family mobility, family structure, and rules and norms established in the household. Israel and Beaulieu (2004) concluded that a lack of positive family social capital may hinder academic achievement and correlate with higher dropout rates. Positive school social capital was found to have a slight correlation with high student achievement and lower dropout rates (Israel & Beaulieu, 2004). Community social capital was defined by demographics of the community and the social networks that existed. In community social capital, networks between parents, students, and schools were found to contribute to the development of social capital, which strengthens the community and leads to decreased dropout tendencies (Israel & Beaulieu).

Human Capital Theory

By Human Capital Theory, education is an engine of growth that on the quality and quantity of education in any country. Formal education is highly instrumental and even necessary to improve the production capacity of a nation and the rationality behind investment in human capital. According to Human Capital Theory, investment in education has positive correlation with economic growth and development. Because it is widely accepted that education creates improved citizens and helps to upgrade the general standard of living in a society. Therefore, positive social change is likely to be associated with the production of qualitative citizen.

Based upon the work of Psacharopoulos and Woodhall (1997), human capital theory rests on the assumption that formal education is highly instrumental and even necessary to improve the production capacity of a population. In short, the human capital theorists argue that an educated population is a productive population. Human capital theory emphasizes how education increases the productivity and efficiency of workers by increasing the level of cognitive stock of economically productive human capability which is a product of innate abilities and investment in human being.

Causes of Dropout (Risk Factors and Dropout Indicators)

There are innumerable sociodemographic factors implicated in the phenomenon of dropout (Hammond, Linton, Smink, & Drew (2007). They identified over 20 risk factors, including: (1) Having a disability or emotional disturbance, (2) High number of work hours, (3) Parenthood, (4) High-risk peer group, (5) High-risk social behavior, (6) Being highly socially active outside of school, (7) Low achievement, (8) Retention or overage of grade, (9) Poor attendance, (10) Low educational expectations, (11) Lack of effort, (12) Low commitment to school, (13) No extracurricular participation, (14) Misbehavior, (15) Early aggression, (16) Low socioeconomic status, (17) High family mobility, (18) Low education level of parents, (19) Large

number of siblings, (20) living with both natural parents, (21) Family disruption, (22) A sibling who has dropped out, (23) Low contact with school, (24) Lack of conversations about school.

Factors Associated with Students Dropout

A number of theories have been advanced to understand the specific phenomenon of dropping out. These theories come from a number of social science disciplines—including psychology, sociology, anthropology, and economics—and identify a range of specific factors related to dropping out. Based on the literature from Rumberger (2001), the effect of family, school, community and other factors on dropout students will be investigated as the purpose of this study.

(a) Family Related Factors

Family socioeconomic level bears by far the strongest relation to dropout; but family structure, mother's age, family stress and maternal employment also enhance or reduce dropout risk, along with other academic and personal resources," according to Alexander, Entwisle, and Kabbani (2001) who conducted the Beginning School Study, a long-term study of dropouts in Baltimore. Students' family background greatly affects their educational outcomes and is commonly viewed as the most important predictor of schooling achievement. Study focused on how family background affects the tendency for students to dropout of school. Researches have consistently found that socioeconomic status, most commonly measured by parental education and income, is a powerful predictor of school achievement and dropout behavior 1998; Pong & Ju, 2000).

Parental education influences students' aspirations and educational support (e.g., help with homework), while family income provides resources to support their children's education, including access to better quality schools, after-school and summer school programs, and support for learning within the home. In addition, students whose parents monitor and regulate their activities, provide emotional support, encourage independent decision making (practicing what is known as *authoritative parenting style*), and are generally more involved in their schooling are less likely to drop out (cited in Rumberger, 2001). Parental income, for example, allows parents to provide more resources to support their children's education including access to better quality schools (cited in Rumberger, 2001).

(b) School Related Factors

Schools are a second contextual factor. It is widely acknowledged that schools exert powerful influences on student achievement, including dropout rates. Four types of school characteristics influence student performance, including the propensity to drop out

or to graduate:

1. Social composition, such as the characteristics of students attending the schools, particularly the socioeconomic composition of the student body.
2. Structural characteristics, such as size, location, and school control (public traditional, public charter, private).
3. School resources, such as funding, teacher quality, and the student– teacher relationship.
4. Policies and practices, such as the academic and social climate (cited in Rumberger, 2001).

Two studies found that the pupil/ teacher ratio had a positive and significant effect on high school dropout rates even after controlling for a host of individual and contextual factors that might also influence dropout rates. One of those studies found that the higher the quality of

the teachers as perceived by students, the lower the dropout rate, while the higher the quality of teachers as perceived by the principal, the higher the dropout rate (Rumberger & Thomas, 2000). Several studies found academic and social climate—as measured by school attendance rates, students taking advanced courses, and student perceptions of a fair discipline policy—predict school dropout rates, even after controlling for the background characteristics of students as well as the resource and structural characteristics of schools. With respect to school policy and practice, Goldschmidt and Wang found that the number of students retained and student referrals were strongly correlated with the dropout rate. School attendance was a strong indicator of dropout rate (Goldschmidt & Wang, 1999).

(c) Community Related Factors

In addition to families and schools, communities and peer groups can influence students' withdrawal from school. Differences in neighborhood characteristics help explain disparities in dropout rates among communities, apart from the influence of families. Some neighborhoods are communities of concentrated disadvantage with extremely high levels of joblessness, family instability, poor health, substance abuse, poverty, welfare dependency, and crime. Disadvantaged communities may influence child and adolescent development through the lack of resources or negative peer influences (cited in Rumberger, 2001).

Settings are important in influencing dropout behavior, but similar settings also affect individuals differently.

- **Urban Settings.** Students are more likely to drop out if they live in urban settings compared to suburban or non-metropolitan areas (Lehr, et. al., 2003).
- **Large Cities.** Students are more likely to drop out if they live in large cities.
- **Poor communities.** Students in poor communities are more likely to drop out of school. Poor communities may influence the risk of dropping out because of a lack of resources for schools and peer influences.
- **Employment opportunities.** Favorable employment opportunities increases the likelihood that students will dropout (cited in Rumberger, 2001).

(d) Other Factors on Dropout Student

There are other factors influencing dropout students such as academic factors. According to Alexander (2001) low academic achievement is one of major predictions of dropping out. Additionally, Rumberger (1955) pointed that students who repeated a grade, were nearly 11 times more likely to drop out compared to students who had not repeated any grade. Therefore, low academic achievement and repeating a grade are really affecting factor on students to become dropouts. Besides, both residential mobility (changing residences) and school mobility (changing schools) increases the risk of dropping out of school. On the other hand, attitudes and behaviors during schooling also predict dropping out. While these attitudes and behaviors influence dropping out, these factors are shaped by the settings where children live. Social factors which have been shown to affect student dropout tendencies include teenage pregnancy and teenage family situations, drug usage, moving out of the family household, and being a language minority youth (Goldschmidt & Wang 1999).

Methods

Research Design

In this study, descriptive research design and survey method were used. Self-report questionnaire was used to explore reasons of dropout.

Sampling

Participants of the study comprised 500 dropout students from various villages in Meikhtila Township (Mandalay Region) and most of these students come from low economic status of family and low community's value on education. In this study, purposive random sampling procedure was conducted. Out of them 239 (47%) were male students and 261(52.2%) were females.

Instrumentation

The instrument used in this study was a self reported questionnaire, containing 35 items which aimed to investigate factors associated with individual characteristics of students and institutional characteristics of their families, school and communities. The data of demographic factors were conducted to explore the items associated with individual characteristics of students. Scores for these items were 4(always), 3(often), 2(sometimes) and 1(never). Self-report questionnaire developed by Andrew Ingram (2006) was used to explore the factors associated with institutional characteristics of students' families, schools and communities.

Data Analysis

After data were collected, they were analyzed by descriptive analysis technique to examine the factors influencing the dropout students. To investigate the family, school, community and other factors influencing dropout students, a Pearson chi-square method was conducted.

Findings

Factors Influencing on Students to be Dropouts

The current study is to investigate the factors influencing dropout student. It was considered four broad factors influencing on students, and they were family, school, community, and other factors related to individuals. The sub-factors were described in the Table 1.

Table 1 Factors and Sub-factors Influencing on Dropouts

Factors	Sub-factors
Family	SES (parents' education and occupation)
	Number of siblings
	Birth order
	Lack of parental involvement
School	Student-Teacher relationship
	School transportation problem
	Location of the school
Community	Dropout within community
	Number of dropout friends
	Peer relationship
Other	Passing in monthly tests
	Participation in school activities
	Attending private tuition
	Having disability or poor health
	Poor academic performance

For the family factor, Socio-Economic Status (SES) of the students were investigated. Concerning the school factor, student-teacher relationship of dropouts, school transportation problem, and location of the school were analyzed. For a third factor, community factor, dropout within community, number of dropout friends, and peer relationship were studied. In addition, other related factors were studied as passing in monthly tests, participation in school activities, attending private tuition, having disability/ poor health, and poor academic performance.

Table 2 Number and Percentage of Dropout Students

Gender	Frequency	Percent
Male	239	47.8 %
Female	261	52.2 %
Total	500	100.0 %

Participants of the study comprised 500 dropout students from various villages in selected area (Meikhtila Township, Mandalay Region).

(a) Family Factor on Dropout Students**Table 3 Father's Education Level of Dropout Students**

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Father's education	Literate	34	37	71	839.6	4	0.000
		6.8%	7.4%	14.2%			
	Primary school level	165	188	353			
		33.0%	37.6%	70.6%			
	Middle school level	34	31	65			
		6.8%	6.2%	13.0%			
	High school level	5	4	9			
		1.0%	0.8%	1.8%			
	Graduate	1	1	2			
		0.2%	0.2%	0.4%			
Total		239	261	500			
		47.8%	52.2%	100%			

In table 3, the results described that 14.2% fathers were literate, 70.6% completed primary education. In addition, 0.4% fathers were graduates. According to the result, it can be said that most of the fathers of the dropout students completed primary education. Pearson chi-square statistics was conducted to investigate whether the father's education level affect on dropouts. The result showed that there was a significant difference among father's education at 0.000 level, $\chi^2_{(4,500)} = 839.6$. Therefore, the father's education is one of the factors influencing on dropouts.

Table 4 Mother's Education of Dropout Students

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Mother’s education	Literate	76	92	168	560.66	4	0.000
		15.2%	18.4%	33.6%			
	Primary school level	130	145	275			
		26.6%	29.0%	55.6%			
	Middle school level	26	20	46			
		5.2%	4.0%	9.2%			
	High school level	7	3	10			
		1.4%	0.6%	2.0%			
	Graduate	0	1	1			
		0.3%	0.2%	0.5%			
Total		239	261	500			
		47.8%	52.2%	100%			

As a result, 33.6% of mothers were literate and 55.0 % completed primary education. Besides, only 0.5% of mothers were graduates. According to the result, most of the mothers of dropouts completed primary education. The result showed that there was a significant difference among mother's education by dropouts at 0.000 level, $\chi^2_{(4,500)}=560.66$ According to chi-square value, it can be concluded that mother's education is also an affecting factor on dropouts.

Table 5 Father's Occupation of Dropout Students

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Father's occupation	Odd-job	94	98	192	426.6	4	0.000
		18.8%	19.6%	38.4%			
	Farmer	109	123	232			
		21.8%	24.6%	46.4%			
	Seller	11	9	20			
		2.2%	1.8%	4.0%			
	Private business	17	9	26			
		3.4%	1.8%	5.2%			
	Government servant	8	22	30			
		1.6%	4.4%	6.0%			
Total		239	261	500			
		47.8%	52.2%	100%			

According to the result shown in table 4.3, 38.4 % of fathers' occupation was odd-job, 46.4 % of fathers were farmers, 4.0 % were sellers, 5.2 % were private-business and 0.4% were government servants.

Table 6 Mother Occupation of Dropout Students

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Mother's occupation	Odd-job	132	154	286	527.7	4	0.000
		26.5%	30.9%	57.4%			
	Farmer	65	63	128			
		13.0%	12.6%	25.6%			
	Seller	28	34	62			
		5.6%	6.8%	12.4%			
	Private-business	13	8	21			
		2.6%	1.6%	4.2%			
	Government servant	0	2	2			
		0.0%	0.4%	0.4%			
Total		239	261	500			
		7.7%	52.3%	100%			

In the table, 57.4% of mothers were doing odd jobs, 25.6% of mothers were farmers, 12.4 % were sellers, 4.2% of mothers were private-business, and only 0.4% was government servants.

Table 7 Number of Siblings of Dropout Students

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Siblings	Less than three siblings	66	81	147	129.6	2	0.000
		13.2%	16.2%	29.4%			
	Between four and six siblings	137	142	279			
		27.4%	28.4%	55.8%			
	Above six siblings	36	38	74			
		7.2%	7.6%	14.8%			
Total		239	261	500			
		47.8%	52.2%	100%			

From the study, the dropouts whose siblings are between 4 and 6 were 55.8%, those who have more than 6 siblings were 14.8%. From the above study, it can be obviously known that children from large family size were more possible to be dropouts.

Table 8 Birth Order in the Families of Dropout Children

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Birth order	Eldest	136	143	279	136.3	2	0.000
		27.2%	28.6%	55.8%			
	Middle	75	79	154			
		15.0%	15.8%	30.8%			
	Youngest	28	39	67			
		5.6%	7.8%	13.4%			
Total		239	261	500			
		47.8%	52.2%	100%			

The result stated that 55.8% of dropout children were eldest in their families. Moreover, 30.8% of children were middle, 13.4% were youngest ones in their families. Therefore, it can be concluded that the eldest or second eldest children were more probable to become dropouts.

Table 9 Parental Encouragement

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Encouragement	Never	4	1	5	179.536	4	0.000
		0.8%	0.2%	1.0%			
	Sometime	96	104	200			
		19.2%	20.8%	40.0%			
	Often	63	58	121			
		12.6%	11.6%	24.2%			
	Always	76	98	174			
		15.2%	19.6%	34.8%			
Total		239	261	500			
		47.8%	52.2%	100%			

According to data, 40% of parents sometimes encouraged their children to study and 24.2% often did so. The parents of 34.8% dropouts always encouraged their children to study.

(b) School Factors on Dropout Students**Table 10 Student-teacher Relation**

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Teacher relation	Scold	1	0	1	472.39	3	0.000
		0.2%	0.0%	0.2%			
	Neglect	3	4	7			
		0.6%	0.8%	1.4%			
	Normal	133	128	261			
		26.6%	25.6%	52.2%			
	Close	102	129	231			
		20.4%	25.8%	46.2%			
Total		239	261	500			
		47.8%	52.2%	100%			

According to the result, it was found that 46.2% of dropouts had close relation with their teachers, 52.2% of dropouts were normal with their teachers and only 1.4% of students were neglected by their teachers. Only one student said that his teacher scolded him.

Table 11 School Transportation Problem

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
School transportation problem	Yes	155	187	342	347.5	1	0.000
		31.0%	37.4%	68.4%			
	No	84	74	158			
		16.8%	14.8%	31.6%			
Total		239	261	500			
		47.8%	52.2%	100%			

From the data, 68.4% of children had the transportation problem go to school and they dropped out of school mostly due to this problem.

Table 12 Location of the School

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Location of the school	Yes	72	65	137	347.5	1	0.000
		14.4%	13.0%	27.4%			
	No	167	196	363			
		33.4%	39.2%	72.6%			
Total		239	261	500			
		47.8%	52.2%	100%			

It was clearly observed that most of the participants in this study had to go to school for a long distance. Only 27.4% of dropouts answered that their schools were near their setting, and 72.6% of dropouts responded that their schools were not near their home.

(c) Community Factors on Dropout Students**Table 13 Number of Dropout Students with in Community**

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Dropout students within community	Many	51	64	115	107.7	2	0.000
		10.2%	12.8%	23.0%			
	Some	66	43	109			
		13.2%	8.6%	21.8%			
	A few	122	154	276			
		24.4%	30.8%	55.2%			
Total		239	261	500			
		47.8%	52.2%	100%			

From the study, 23% of students live in the community in which many students drop out, 55.2% students lived in the community in which there were a few dropout students.

Table 14 Number of Dropout Friends

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Dropout Friends	Many	96	130	226	54.916	2	0.000
		19.2%	26.0%	45.2%			
	Some	59	34	93			
		11.8%	6.8%	18.6%			
	Few	84	97	181			
		16.8%	19.4%	36.2%			
Total		239	261	500			
		47.8%	52.2%	100%			

By the data, 45.2% participants responded that they had many dropout friends, 18.6% of participants had some and 36.2% had few dropout friends. It was clearly known that, living in dropout community and being friends with dropouts were really affecting on students to be dropouts.

Table 15 Peer Group Relation with Dropouts

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Peer Group Relation	Neglect	4	4	8	435.7	2	0.000
		0.8%	0.8%	1.6%			
	Normal	182	196	378			
		36.4%	39.4%	75.8%			
	Close	53	61	114			
		10.6%	12.2%	22.8%			
Total		239	261	500			
		47.8%	52.2%	100%			

Although, 75.8% of the participants were normal in relation with their friends, only a few percentages of dropouts were neglected by their friends, 22.8% of participants had close relation with their friends in classroom.

(d) Other Factors on Dropout Students**Table 16 Passing in Monthly Tests**

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Passing in Monthly Tests	Never	5	3	8	274.5	3	0.000
		1.0%	0.6%	1.6%			
	Sometime	60	44	104			
		12.0%	8.8%	20.8%			
	Often	114	153	267			
		22.8%	30.6%	53.4%			
	Always	60	61	121			
		12.0%	12.2%	24.2%			
Total		239	261	500			
		47.8%	52.2%	100%			

According to the data, 53.4% of students in that selected area described that they often pass their monthly tests. Only 24.2% of students always passed in their exam.

Table 17 Participation in School Activities

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Activity	Never	34	90	124	262.8	3	0.000
		6.8%	18.0%	24.8%			
	Sometime	144	129	273			
		28.8%	25.8%	54.6%			
	Often	20	23	43			
		4.0%	4.6%	8.6%			
	Always	41	19	60			
		8.2	3.8%	12.0%			
Total		239	261	500			
		47.8%	52.2%	100%			

By the data obtained, 24.8% of students never participate in their school activities, 54.6% were sometimes and only 12% always participate in their school activities.

Table 18 Attending Private Tuitions

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Tuition	Yes	20	24	44	748.3	1	0.000
		4.0%	4.8%	8.8%			
	No	219	237	456			
		43.8%	47.4%	91.2%			
Total		239	261	500			
		47.8%	52.2%	100%			

The data showed that most of the participants 91.2% could not attend at any private tuition and only 8.8% of the students could attend the private tuition.

Table 19 Poor Health

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Poor Health	Yes	22	18	40	352.8	1	0.000
		4.4%	3.6%	8.0%			
	No	217	243	460			
		43.4%	48.6%	92.0%			
Total		239	261	500			
		47.8%	52.2%	100%			

The obtained data showed that 92% of students in this study did not have any problem concerning with the disability or poor health, that is only 8.0% of students were poor in health to continue for their study.

Table 20 Success Position in Academic Achievement of Dropouts

Sub-factor		Gender		Total	χ^2	df	p
		Male	Female				
Position	Bottom	30	20	50	588.208	2	0.000
		6.0%	4.0%	10.0%			
	Middle	197	225	422			
		39.4%	45.0%	84.4%			
	Top	12	16	28			
		2.4%	3.2%	5.6%			
Total		239	261	500			
		47.8%	52.2%	100%			

According to result, 84.4% of students were middle according to their position in their class, 10.0% were bottom and only 5.6% were top in their class.

Table 21 Number and Percentage of Children who Responded Various Reasons for Dropping out of School

Respond	Sub-factor	Frequency	Percent
Reasons for Dropout	SES	326	65.2
	School transportation problem	79	15.8
	Many siblings	26	5.2
	Personal affairs	25	5.0
	Novice	27	3.4
	Poor health	15	3.0
	Orphan	12	2.4
	Total	500	100

According to the data, 65.2% of dropouts responded that they were very poor and they had difficulty to continue schooling. In addition, 5.2% of students responded that they dropped out of school because they had many siblings. The third reason they gave was transportation problem. The 15.8% of students answered that they were difficult to go to school because of long distance to school.

Conclusion

Today's policy makers generally set a goal of access free and compulsory basic education for all school age children. By the first goal of the Myanmar EFA National Action Plan, government encourages students for basic education competition. A total of 500 dropout students from selected area (Meilhtila Township, Mandalay Division) participated in this study. Out of them, 239 (47.8%) were male students and 261 (52.2%) were females. By the result, most of the parents completed only primary education. Some parents were literate and a few parents were graduates. On other words, most of the parents were in low education and cannot help in their children's lessons. Therefore, there may be difficulty to make children value on education.

According to Rumberger (1998), the socioeconomic status, most commonly measured by parental education and income is a powerful predictor of school dropout behavior. Therefore, it can be obviously known that parental education and occupation are strongly affecting on dropout students. Most of the parents in the study are in lowest education level. By their poor education, their income may not be stable. Therefore, their children have difficulty to continue their education and they become dropouts. Besides, they may not have knowledge to control their family size. When they have large family size, they cannot support each child to complete schooling.

According to Smits (2010), elder daughters may create the possibility for younger daughters and sons to stay in school. By the result of data, most of the dropouts were eldest and second eldest among their siblings. On the other hand, it can be concluded that most of the elder brothers or sisters had to drop out to be able to solve their family's survival and to help their younger brothers or sisters continue their education. Therefore, students from these families are more possible to be dropouts. Another factor investigated in this study is school relating factor. According to the data, most of the dropouts' relation with their teachers is normal and only a few students answer that they were neglected by their teachers. According to the data, most of the students live in dropout community in which there is low value on education. These students are more likely to become dropouts. According to Rumberger (2001), academic achievement is a strong predictor on student dropout. By the passing in monthly test data, participants in this study are strongly influenced by poor academic achievement.

Next, according to the data, most of the students had the transportation problem to go to school. When students complete a level (e.g., primary or middle), they have to move other school for further study. But, the school they have to attend is not near their community and is so far from their setting. Especially for girls, there may be more difficult to go to school in long distance. Therefore, they have difficulty to go to school and they do not continue schooling and they become dropouts. Students in this study rarely participate in school activities and these students are more possible to become dropouts. But, most of these students have no disability or other health problems. As the next step, the various responds of dropping out by the students were collected. According to the data, 65.2% of dropouts responded that they were very poor and they had difficulty to continue schooling. The 15.8% of students answered that they were difficult to go to school because of long distance to school.

In this study, the most influential factors on dropping out of school are family relating factors and school relating factors. Therefore, the following suggestions may be useful for prevention of dropping out in that area.

- Parent should emphasize the education of their children as much as they can.
- Parents should a great interest in their children's attitude and behavior in school.
- Parents should monitor and check their lessons.

- Although parents are in low socio-economic status, should try their children stay in school as long as possible. That is because; children who leave school in primary level may have much more difficulties in life than children who drop out in middle or high level.
- Parents should control their family size if they cannot support each child for their future life.
- Teachers should have a great interest in their pupil's family background and situation to be able to give guidance and counseling.
- Teachers should give more attention and great care to under-achievers and children from poor family situation.
- Teachers usually should discuss with parents in relation with students' education.
- Community should emphasize on the students' difficulties such as travelling difficulty to go to school. Because of this difficulty, many students drop out of school.
- Community should give supporting to students especially from broken family or from the family with low socio-economic status.

In our country, the Republic of the Union of Myanmar, attempts for decreasing dropout rates are being made as follows: (1) to raise the percentage of attending school, (2) to lessen the percentage of leaving school, (3) to raise the percentage to continuing school, (4) to continue the learning of all primary students, and (5) to have completed their middle and high school after having completed primary school. During the transitional period, after 20th century had ended, the 21st century is to come, United Nations, issued "Mi-Lennium Development Goals MDG 2000-2015" to all member nations, as development guidance-which is to be accomplished during the years, from 2000 to 2015. These goals includes seven goals. The Nations in the world, including Myanmar tried hard at best they could, according to goal No (2) "Everyone must have chance to attend primary Education" (Achieve Universal Education). Therefore, percentages of leaving school become to decrease in Education sector all over the world.

Acknowledgements

We would like to offer respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) for their kind permission to conduct this study. Then, we would like to express our honorable thanks and the deepest appreciation to Dr. Khin Hnin Nwe (Professor & Head of Department, Department of Educational Psychology, Sagaing University of Education) for her invaluable suggestions, encouragement and precious comments for our study. We also want to express our utmost appreciation to principals, teaching staff and students from Meikhtial Township for their cooperation in this study.

References

- Alexander, K.L., Entwisle, D.R., & Kabbani, N. (2001). "The Dropout Process in Life Course Perspective: Early Risk Factors at Home and School." *Teachers College Record*. 103(5). <http://rcrecord.org/Content.asp?ContentID=10825>.
- Coleman, J.S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95-S120.
- Drewry, J.A. (2007). High School Dropout Experiences: A Social Capital Perspective, Virginia Polytechnic Institute and State University, February 12, 2007 <http://www.irb.vt.edu/pages/newstudy.htm>
- Education System in Myanmar : Brief Description of Primary, Secondary and Tertiary Education.
- Finn, J.D (1993). "School Engagement and Students At Risk", University of New York at Buffalo.
- Goldschmidt, P., & Wang, J. (1999). When can schools affect dropout behavior? A longitudinal multilevel analysis [Electronic version]. *American Educational Research Journal*, 36, 715-738.

- Hammond, C., Linton, D., Smink, J., & Drew, S. (2007). Dropout risk factors and exemplary programs. Retrieved from National Dropout Prevention Center, Communities In Schools, Inc. Website: http://www.dropoutprevention.org/resource/major_reports/communitiesinschools/Dropout%20Risk%20Factors%20and%20Exemplary%20Programs%20FINAL%205-16-07.pdf
- Ingrum. A. (2006). High School Dropout Determinants: The Effect of Socio-economic Status and Learning Disabilities. Illinois Wesleyan University.
- Israel, G. D., & Beaulieu, L. J. (2004). Investing in communities: Social capital's role in keeping youth in school [Electronic version]. *Journal of the Community Development Society*, 34(2), 35-57. Dropouts 151.
- Lehr, C.A., Moreau, R.A., Lange, C. & Lanners, E. (2003). Alternative Education School: Findings from a National Survey of the States. Research Report #2. Minneapolis, MN: University of Minnesota. The College of Education and Human Development. http://ici.umn.edu/alternativeschools/publications/alt_schools_report2.pdf
- Myanmar Ministry of Education (2014). "The National Educational for All (EFA) Goods of the Myanmar EFA National Action Plan (2003-2015)".
- Myanmar Education Spending 2011-2020, Retrieved from <http://www.macrotrends.net/countries>.
- Psacharopoulos, G and Woodhall, M. (1997) Education for Development: An Analysis of Investment Choice. New York Oxford University Press.
- Pong, S.-L. & Ju, D.-B. (2000). The effects of change in family structure and income on dropping out of middle and high school. *Journal of Family Issues*, 21, 147-169.
- Rumberger, R.W. & Thomas, S.L. (2000). The distribution of dropout and turnover rates among urban and suburban high schools. *Sociology of Education*, 73, 39-67.
- Rumberger, R.W. (2001) Who Drops Out of School and Why. University of California, Santa Barbara, revised April 2001
- Schargel, F.P. & Smink, J. (2001) Effective Strategies for Dropout Prevention. <http://www.schargel.com/scg/strategies.htm>
- Smits, J. (2010). Family Background and Context Effects on School Dropout in Morocco, Algeria, Tunisia, Egypt and Syria. Department of Economics, Radboud University Nijmegen, The Netherlands.
- Solga, H. (2002). Stigmatization by negative selection. Explaining less-educated people's decreasing employment opportunities. *Eur. Sociol. Rev.* 18, 159-178 (2002)
- Stillwell R. & Hoffman. L (2008): Public School Graduates and Dropouts from the Common Core of Data: School Year 2005-2006, National Center for Education Statistics, U.S Department of Education, NCES 2008-353.
- The Republic of the Union of Myanmar Ministry of Education (March, 2018). Department of Education Research, Planning and Training, Unicef for every child, March 2018)
- Wikipedia Dictionary: <https://en.m.wikipedia.org>. 2030 Agenda for Sustainable Development Goals, September, 2015.

CHILDREN'S SOCIAL SKILLS DEVELOPMENT THROUGH COOPERATIVE TEAM LEARNING

Myint Myint Po¹

Abstract

The purpose of this paper was to examine the children's social skills development through cooperative team learning. The participants of the study were selected from Sagaing. A sample of 224 Grade 6 students participated in this study and it consisted of 134 male and 90 female students. Students' social skills were measured by using "The Assessment of Children's Social Skills through Self-Report" questionnaire developed by Carla Kmett Danielson and Carolyn Roecker Phelps. The observed mean of social skills was 82.69 and theoretical mean was 63. Most students fall into moderate social skills group so their social skills were normal. Male students' social skills mean score was 81.95 and that of female students was 83.80. Although male students' social skills mean was slightly higher than that of female students, there was no significant difference between male and female students. Regarding schools, according to the independent samples *t* test, there was a significant difference at .05 level. Moreover, students who learned by cooperative team learning more developed social skills than those who were in conventional learning. But it was found that there was no significant difference between male and female students through cooperative team learning. According to the research findings, this study highlights the fact that students' social skills can be improved through cooperative team learning and school is one of the factors that affects upon social skills.

Keywords: social skills, cooperative team learning, conventional learning

Introduction

Schools are educational institutions oriented to value (value-oriented enterprise). Therefore social, morals as very important social skills become a serious concern for educators, especially in schools in various aspects and activities. Students would develop inter-group relations and acceptance of classmates, improve self-esteem and respect for others and mutual help.

Social skills are skills every person needs to possess in order to relate to others. They include verbal and non-verbal communication, such as speech, gesture, facial expression and body language. A person has strong social skills if they have the knowledge of how to behave in social situations and understand both written and implied rules when communicating with others.

Teachers and families have a strong influence on a child's emotional well-being. Teachers and caregivers have a very high influential impact on children's social competence. In today's society, they often become surrogate parents. Early childhood/early elementary teachers need to give children many opportunities and guidance to promote and engrain social competence skills. The development of social skills is especially important prior to age seven since by that age the child's sociometric status (their popularity) has been established (Knight & Hughes, 1995). The role of the teacher is critical at this time in the child's life.

Teachers must be conscientious when talking to students, making sure they are giving the same treatment to each child. All children want to be loved and respected even the ones that make the day a little tiring. Teachers and parents are culprits of giving more positive attention to the well-mannered, well-behaved, cute child than to those deemed as troublemakers (Nunnelley, 2002).

The role of the teacher is especially critical during the early stages of social development. Some ways in which teachers can promote social competence within the classroom include: allowing the children as many choices as possible, always enhancing self-esteem, establishing

¹ Associate Professor, Department of Educational Psychology, Sagaing University of Education

boundaries, and involving the children's thoughts and ideas (Nunnelley, 2002). Allowing children to have choices will help the development of self-discipline. Making sure there are many options for children to choose from during their play time will allow them to have the power to make decisions which creates a learning environment (Conroy, Davis, Fox & Brown, 2002). An example of this includes creating different, clearly defined play areas in the classroom assigning a specific number of children to play in each area. Areas that may be incorporated into the classroom include a writing area, a block area, a dramatic play area, an art area, a fine motor area, a book area and a flannel board area. Children need to have boundaries that are clearly defined. They need to be aware of the consequences and held accountable for their actions. If a child makes a poor choice, he/she should know that there is a consistent consequence for making that poor choice. The consequence should be meaningful so the child understands that what he/she did was not socially acceptable (Conroy, Davis, Fox & Brown, 2002).

Vygotsky (1978) suggested that the development of new skills and ideas is done through social functioning with peers and adults. Learning is acquired through social process at an inter-psychological level, and then, development of the child's mental functioning is followed at an intra-psychological level. That is, children learn through interacting with people who are intellectually more advanced than them and complete developmental processes by internalizing them (cited in Mercendeti, 2010).

Cooperative learning is gaining popularity for a number of reasons. Evidence indicates that it raises achievement, promotes positive self-concept, and raises regard for others. Cooperative learning may also help to lessen the fatalistic attitude toward schooling of those who have experienced repeated failure in the schools. When these students notice the value of their input and effort, a more internal locus of control and belief in one's ability is fostered. Social and work skills are imbedded. Implementing full-scale cooperative learning is not a simple task. Teachers may wish to start with periodic lessons or units. Nevertheless, cooperative learning should be used for students to learn more, like school better, like each other better, and learn more effective social skills.

Classroom today are made up of heterogeneous students who have a wide range of ability levels and special needs. Traditionally, organizations have focused on placing the right talent in the right situation. Nowadays, with the world becoming increasingly inclusive, selecting talented people based primarily on their cognitive abilities may not be sufficient, especially with the need to maximize everyone's potential (Sekiguchi & Huber, 2011, cited in David G., 2017). One way to maximize individual potential and team performance can involve placing people on teams based on their social skills and vocational skills as well as cooperative learning groups also provide a natural environment for the development of social skills.

Gresham and Elliott (1984) defined social skills as socially acceptable learned behaviors that enable a person to interact with others in ways that elicit positive responses and assist in avoiding negative responses. Phillips (1978) defined social skills as the interaction between a person and his/her environment and the ability to begin and sustain interpersonal relationships. Cook, Gresham, Barreras, Thornton, and Crews (2008) described social skills as involving learned behaviors that involve interactions with others which enable individuals to function competently at social tasks.

Some characteristics of social skills are as follows;

- Social skills are goal-directed.
- Socially skilled behaviors are interrelated in the sense that one person may use more than one kind of behavior at the same time, for the same goal.
- Social skills should be appropriate to the situation of communication.

- Different social skills will be used for professional and personal communication.
- Social skills can be identified as certain types of behavior whereby an individual can be judged on how socially skilled they are.
- Social skills can be taught, practiced and learned.
- Social skills should be under the cognitive control of the individual.
- Learning social skills involves learning when to use particular behaviors, as well as what behaviors to use, or how to use them.

Cooperative learning is more than merely having students sit together, helping the others do their work. Directing students who finish their work early to assist the others isn't a form of cooperative learning either. Slavin (2013) defines "Cooperative Learning" as "Cooperative learning comprises instructional methods in which teachers organize students into small groups, then work together to help one another learn academic content" (cited in Rianawati, 2017).

According to Johnson (cited in Danielle Marcendetti, 2010), cooperative learning objectives is to work together to achieve a common goal. Johnson and Johnson (cited in Danielle Marcendetti, 2010) proposed that there are five elements of cooperative learning: positive interdependence, individual accountability, promotive interaction, social skills and prosocial group (cited in Rianawati, 2017).

Four types of cooperative learning have been derived from cooperation and competition theory. Formal cooperative learning may be implemented to teach specific content, informal cooperative learning may be implemented to ensure active cognitive processing of information during direct teaching, cooperative base groups may be implemented to provide long-term support and assistance, and constructive controversy may be implemented to create academic, intellectual conflicts to enhance achievement and creative problem solving.

Thus, it is necessary to examine children's social skills development through cooperative team learning.

Aims of the Study

The main aim of this study was to investigate the social skills development of the children through cooperative team learning.

Research Hypotheses

1. There is no difference in social skills by gender and school.
2. There is no difference in social skills development between two groups of students who receive cooperative team learning and those who receive conventional learning.

1.5 Definitions of Key Terms

- **Social skills:** Social skills mean the ability to communicate, persuade, and interact with other members of the society, without undue conflict or disharmony. (Business Dictionary)
- **Cooperative Team Learning:** Cooperative team learning is a type of group work and is defined as the instructional use of small groups to promote students working together to maximize their own and each other's learning. (Johnson, et al., 2008)
- **Conventional Teaching:** Conventional teaching refers to the teaching using chalk and board for teachers; pen and paper for students. It is teacher-centered approach and the teacher uses methods such as lecture method and question and answer method.

Method and Procedure

Research Design

This study was conducted by using true experimental design.

Sample

A total of 224 Grade 6 students (male=134 and female=90) were randomly selected from Sagaing Township.

Instrument

For examining students' social skills, The Children's Self-Report Social Skills Scale (CS⁴) developed by Carla Kmett Danielson and Carolyn Roecker Phelps (2003) was used. This scale included 21 items and its internal consistency reliability was .96.

Procedure

In order to know children's social skills development, pretest and posttest were conducted. Based on the pretest score, children with low social skills were chosen and divided into two groups as experimental and control group. Each group consisted of 25 students from each school, the total of 50 students in experimental group while the total of 50 students in control group. These groups had nearly the same mean scores in social skills. After assigning these groups, students in experimental group were taught Science (Chapter 10) by using cooperative team learning, especially, "Think Pair Share" structure. In order to make group activities, informal cooperative learning strategies (heterogeneous group and short time duration) were used. The intervention period lasted for three weeks and two periods per week. After that, posttests were done to explore children's social skills development through cooperative team learning. Then, the aim of the study was examined systematically by using descriptive statistics, independent samples *t* test and paired samples *t* test. Finally the interpretation of the finding was made and conclusion was drawn.

Findings

In terms of descriptive statistics, minimum and maximum scores, means and standard deviation of overall social skills were calculated.

Table 1 Descriptive Statistics for Social Skills of Grade 6 Students

Variable	<i>N</i>	<i>Mini</i>	<i>Maxi</i>	<i>M</i>	<i>SD</i>
Social Skills	224	53	100	82.69	8.920

Table 1 indicated that the mean and standard deviation for the overall social skills scale were 82.69 and 8.920 respectively. The highest score of social skills was 100 and the lowest score was 53. It was found that the level of social skills of Grade 6 students in Sagaing Township was satisfactory as the observed mean score 82.69 was higher than theoretical mean score 63.

Table 2 Independent Samples *t* Test for Social Skills of Grade 6 Students by Gender

Variable	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Social Skills	Male	134	81.95	9.017	-1.528	222	.128
	Female	90	83.80	8.705			

For the social skills, the average mean score of male students was 81.95 and that of female was 83.80. The mean score of female students exceeds 1.85 points than that of the male students in social skills. Although mean score of the social skills of female students was slightly higher than that of male students, according to Table 2, the result of independent samples *t* test

showed that there was no significant difference between male and female students in social skills. This finding was inconsistent with the result of Tallat Rashid who reported that there was a significant difference in social skills between male and female students.

Table 3 Independent Samples t Test for Social Skills of Grade 6 Students by School

Variable	School	N	M	SD	t	df	p
Social Skills	School 1	142	83.63	8.436	2.012	222	.046*
	School 2	82	81.07	9.538			

Note: *p < .05

According to Table 3, the results of independent samples *t* test showed that there was significant difference between school 1 and school 2 in social skills at .05 level. The mean score of social skills of students in school 1 was higher than that of students in school 2. It can be interpreted that students from school 1 possessed better social skills than those from school 2.

Based on the pretest score, students who got lowest social skills scores were assigned as experimental group and control group. Each group consisted of 50 students. These groups had nearly the same social skills before intervention. Their social skills mean comparison would be described the following table.

Table 4 Comparison of Social Skills between Experimental Group and Control Group before Experiment

Variables	Group	N	M	SD	t	df	p	MD
Social Skills	experimental	50	64.92	6.401	.217	73	.829	.220
	Control	50	64.70	3.259				

In Table 4, mean scores of experimental group was 64.92 and that of control group was 64.70. There was no significant difference between experimental group and control group. It means that these two groups had nearly the same social skills level.

After intervention for three weeks, posttest was administered to know social skills development changes. The result can be seen in Table 5.

Table 5 Differences between Experimental Group and Control Group after Experiment

Variables	Group	N	M	SD	t	df	p
Social Skills	Experimental	50	75.94	9.886	2.963	79	.004**
	Control	50	71.14	5.785			

Note: ** p < .01

According to Table 5, the experimental group's mean score of social skills was 75.94 and the control group's mean was 71.14. There was a significant difference in social skills between these two groups at 0.01 level ($p < 0.01$). It can be interpreted that students' social skills increase through cooperative team learning.

Table 6 Comparison of Social Skills of Students under Cooperative Team Learning before Experiment and after Experiment

Variables	Test	N	M	SD	t	df	p	MD
Social Skills	Pretest	50	64.92	6.401	-6.705	49	.000***	-11.02
	Posttest	50	75.94	9.886				

Note: *** p < .001

As shown in the Table 6, the mean of the experimental group before the experiment was 64.92 and after the experiment the mean increased to 75.94. It was found that there was a significant difference in social skills through cooperative team learning ($p < 0.001$). It is obvious that social skills can be improved by cooperative team learning. This finding supported the result of Santiago Mendo-Lazaro who concluded that the cooperative methodology is particularly relevant for the development of students' interpersonal, social, teamwork competences, professional competence which will be decisive for their social and professional success.

Conclusions, Discussion and Recommendations

A total of 224 Grade 6 students (male=134, female=90) from Sagaing were selected as participants in this study. The main purpose of the present study was to investigate the social skills development of the children through cooperative team learning.

According to the results of descriptive analyses, the mean of students' social skills was 82.69 and the theoretical mean was 63. The observed mean (82.69) was greater than the theoretical mean (63). Therefore, it can be interpreted that Grade 6 students' social skills was satisfactory.

For gender, the mean score of female students (83.80) was slightly higher than that of male students (81.95) but there was no significant difference between male and female students. Similarly, there was no gender effect on social skills of experimental group both before and after the experiment. This finding was not consistent with the study of Tallat Rashid who found that there was statistically significant difference between male and female students.

Regarding school, the mean of school 1 was 83.63 and that of school 2 was 81.07. According to the independent samples *t* test, there was a significant difference between school 1 and school 2. It can be concluded that students from school 1 possessed better social skills than those from school 2. It might be the fact that family factor affects upon social skills development. Father or mother or both of most students from school 1 were civil services and educated. Some were merchants. Most parents can support their schooling both academically and financially. Thus they felt security and got necessary guidance from their parents.

In order to examine the social skills development of Grade 6 students, students with low social skills, based on the pretest scores, were divided into two groups as experimental and control groups. These groups were equivalent in social skills and their social skills means were 64.92 and 64.70 respectively. After the intervention, the social skills of the experimental group were statistically significantly increased. Its mean was 75.94 and *p* value was 0.000. It can be interpreted that students' social skills can be improved through cooperative team learning.

As mentioned in previous section, social skills can be taught, practiced and learned. Learning social skills can improve relationships; provide a more well-balanced life, increase satisfaction in the job, and improve self-esteem. In order to use group based activities ask students to work together to complete a joint task or assignment, the teacher should:

- Define the learning objectives for the activity and assign students to groups;
- Make sure that the groups are typically heterogeneous, and pay attention to the skills that are needed for success in the task;
- Assign specific roles to the students, communicate the assessment criteria and the types of skills that will be needed;
- Play an active role during the groups' work, monitoring the work and evaluating group and individual performance;

- Encourage groups to give their best, to use each individual potential to achieve the set objective.

Relationships, careers and overall satisfaction with life can be improved with good, well-developed social skills. But many people with anxiety, especially social anxiety, find social situations unbearable. If the cooperative learning is correctly implemented, with groups of working students that learn together and not compete with each other, then learning will be effective and efficient.

This study supports the fact that children's social skills can be taught, practiced and learned. It gives the teachers awareness for students' social skills development. The teachers' duty is not only to teach subject matters but also to prepare students' mind set in socialization. Therefore, teachers, parents and caregivers need to be models in social skills for their children and need to create social activities. By following the suggestions and recommendations mentioned in this study, it was hopefully to be an aid for children's social skills development.

Acknowledgements

Firstly, we would like to offer respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education), Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) and Dr. Khin Hnin Nwe (Head of Department of Educational Psychology, Sagaing University of Education) who allowed us to do this research paper. We would also like to thank all of participants for their cooperation in data collection of this study.

References

- Angell, C., (2014). Cooperative Learning in the Classroom. A Thesis Presented to The Graduate Faculty and the College of Education, Eastern Oregon University.
- Buchs, C., & Butera, F., (2015). Cooperative Learning and Social Skills Development. Retrieved from <https://www.researchgate.net>
- Danielson, C. K. & Phelps, C. R., (2003). The Assessment of Children's Social Skills Through Self-Report: A Potential Screening Instrument for Classroom Use. *Measurement and Evaluation in Counseling and Development*, Vol. 35. Retrieved from <https://doi.org/10.1080/07431756.2003.12069068>
- Elliott, S. N. (2000). *New Direction in Social Skills Assessment and Intervention for Elementary and Middle School Students*. Department of Psychology, University of Wisconsin-Madison.
- Guido, M., (2017). The Guide to Cooperative Learning: Principles and Strategies for Each Type. Retrieved from <https://www.prodigygame.com>
- Huitt, W. & Dawson, C. (2011). Social development: Why it is important and how to impact it. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University.
- Jager, J. (2002). Teens Develop Healthy Social Skills and Relationship: What the Research Shows about Navigating Adolescence. *Child Research Brief*.
- Johnson, D. W. (1970). *Social Psychology of Education*. New York: Holt, Rinehart, & Winston.
- Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and Competition: Theory and Research*. Edina, MN: Interaction Book Company.
- Johnson, D. W., & Johnson, R. T., Holube. E. J. (2013). *Cooperation in the Classroom*. 9th ed. Edina, MN: Interaction Book Company.
- Johnson, D. W., & Johnson, R. T., (2018). *Cooperative Learning: The Foundation for Active Learning*. Web of Science. Retrieved from <https://cdn.intechopen.com>
- Jyoti, J. (2017). Effect of cooperative learning on Academic Anxiety, Social Skills and Achievement in Social Studies of Secondary School Students. Retrieved from <https://shodhganga.inflibnet.ac.in/bitstream/10603/235189/8/08chapter1.pdf>
- Lazaro, S. M., Barco, B. L., Castano, E. F., Rio, M. P., & Gallego, D. I., (2018). Cooperative Team Learning and the Development of Social Skills in Higher Education: The Variables Involved. *Frontiers in Psychology*. Vol. 9, Article. 1536. Retrieved from <https://www.ncbi.nlm.nih.gov>

- McIntyre, T., (n.d.). Competitive vs. Cooperative Learning Formats. Retrieved from www.behavioradvisor.com
- Patesan, M., Balagiu, A., & Sechia, D., (2016). The Benefits of Cooperative Learning. International Conference Knowledge-based Organization. Vol. XXII, No.2. Retrieved from <https://doi.org/10.1515/kbo-2016-0082>
- Rashid, T., (2010). Development of Social Skills among Children at Elementary Level. *Bulletin of Education and Research*. Vol.32, No. 1. Retrieved from <https://www.semanticscholar.org>
- Rianawati, (2017). Implementation Strategy Cooperative Learning: Type of Student Achievement Division Team (STAD) to Improve Social Skills Students on Learning Morals in Man 2 Pontianak Learning the Year 2016/2017. *Journal of Education and Practice*. Vol. 8, No.3. Retrieved from [https:// www.researchgate.net](https://www.researchgate.net)
- Sandra, P., (2003). Cooperative Learning Strategies. *The Science Teacher*, Vol. 70, No. 4.

AN INVESTIGATION INTO PARENTAL RESPONSIVENESS, PARENTAL CONTROL AND STRENGTHS OF JUSTICE OF HIGH SCHOOL STUDENTS FROM MONYWA TOWNSHIP

Thae Su Mo¹

Abstract

The main purpose of this study was to investigate the relationship between two parenting features (parental responsiveness and parental control) and strengths of justice of high school students from Monywa Township. 379 students from three selected high schools participated in this study. The Scale of Parenting Styles developed by Gafoor and Kurkkan (2014) was used to measure parental responsiveness and control. Strengths of justice were measured through 96-item Value in Action Inventory designed by Park and Peterson (2006). The results showed that adolescents perceived their mothers as more responsive and more controlling than their father. Perceptions with parental responsiveness and control were not different between boys and girls. Maternal responsiveness positively predicted all strengths of justice while maternal control positively predicted only teamwork. Paternal responsiveness and control showed no prediction. The findings of this study implicitly highlighted the effect of parenting standard on children's development. Even the same parenting features did not have same effect between maternal and paternal parenting.

Keywords: Parental Responsiveness, Parental Control, Strengths of Justice, Teamwork, Fairness, leadership

Introduction

In the field of psychology, scholars had argued and discussed heavily about the problematic aspects of human functioning. This traditional psychology's focus was challenged by a new movement called positive psychology. Positive psychology discussed positive functioning that promotes well-being, including positive experiences, positive institutions and communities, and positive characters (Seligman & Csikszentmihalyi, 2000). In 2004, Seligman, a pioneer of positive psychology, presented character strengths to the public along with the handbook of character strengths (Peterson & Seligman, 2004). Character strengths are a family of morally desirable traits that people resonate in their thoughts, feelings and behaviours, and these traits are related to several positive outcomes (Park, 2004; Ruch et al., 2014). The family consists of 24 strengths which can be grouped under six universal virtues: (1) wisdom and knowledge, (2) courage, (3) humanity, (4) justice, (5) temperance, and (6) transcendence.

Regarding the meaning and composition of the six virtues, Peterson and Seligman (2004) gave explanation in page 29 and 30 of their handbook of character strengths. Virtue of wisdom and knowledge represents five cognitive strengths that are concerned with knowledge acquisition and applying knowledge into human affairs. Those five cognitive strengths are creativity, curiosity, judgement and open-mindedness, love of learning and perspective. Virtue of courage belongs to four emotional strengths which enable the exercise of will to achieve goals in the face of external or internal opposition. The four emotional strengths are bravery, perseverance, honesty and zest. Virtue of humanity characterizes three interpersonal strengths of caring others and fostering familiarity, which are love, kindness and social intelligence. Virtue of justice portrays three civic strengths of favouring equity within society, which are teamwork, fairness and leadership.

Virtue of temperance symbolizes four strengths which facilitate people in controlling over excess, and those strengths are forgiveness, modesty, prudence and self-regulation. The final virtue, transcendence, represents five strengths which provide people with meaning of living

¹ Dr, Tutor, Department of Educational Psychology, Sagaing University of Education

through the connections to the larger universe (or something higher such as God). The comprised five strengths are appreciation of beauty and excellence, gratitude, hope, humour, and spirituality.

In the present study, only virtue of justice was investigated. As mentioned in above paragraph, virtue of justice plays a critical role as contributors to health community life. Strength of teamwork facilitates working well as member of a group, and strength of leadership facilitates organizing and supervising group activities, while strength of fairness gives sense of treating all people equally (Peterson & Seligman, 2004).

All 24 character strengths had their own important links to positive outcomes. Strengths of perseverance, fairness, honesty, hope, and perspective predicted GPA positively even after controlling for IQ (Park & Peterson, 2008). In the study of Lounsbury et al. (2009) too, four strengths (perseverance, love of learning, fairness and kindness) predicted college GPA. In the study of Wagner and Ruch (2015), school achievement of primary and secondary school students was correlated with love of learning, perseverance, zest, gratitude, hope, and perspective while positive classroom behaviour was strongly correlated with perseverance, self-regulation, prudence, social intelligence and hope. They also proved that character strengths contribute to positive classroom behaviour which in turn enhances school achievement.

In addition to school achievement, character strengths were also related with life satisfaction and well-being in children and youth (Park, 2009; Niemiec, 2013). Hence, it is undeniable proof that character strengths import positive life outcomes to youths. The development of these strengths in an individual is contributed by many factors. According to Park (2004), good parenting, family and peer intimacy, positive role models, positive institutions and youth development programs have important impact on the development of character strengths.

Parenting which is commonly known as raising children has long been studied in the field of social psychology due to its significant effects on several developmental aspects of an individual. Many researchers (e.g., Barnes et al., 1986; Baumrind, 1968; Grolnick & Ryan, 1989; Schaefer, 1959; Skinner et al., 2005; Slater, 1962; Steinberg et al., 1992) discussed theories of good and bad parenting along with their endeavour to portray holistic nature of parenting. Among those theories and models of parenting, the most popular was Baumrind's (1968) three parenting styles: Authoritarian, Authoritative and Permissive.

Following her work, Maccoby and Martin (1983) added next parenting style "Negligent". They posited that composite of two dimensions—parental warmth (responsiveness) and parental demandingness (control)—decide these four parenting styles. Parental responsiveness (also labelled as parental warmth, acceptance or care) refers to "the expression of affection, love, appreciation, kindness, and regard; it includes emotional availability, support, and genuine caring" (Skinner et al., 2005, p.185). Parental control (also labelled as demandingness) refers to disciplinary actions that parent demands on children to regulate their behaviour, especially for behavioural control (Baumrind, 1971).

According to Darling (1999), parental care (responsiveness) predicts higher social competence and psychological functioning whereas parental control (demandingness) predicts instrumental competence (e.g., academic performance) and behavioural control (i.e., less involvement in problematic behaviour). In their longitudinal studies, Bowers et al. (2011) and Gestsdottir et al. (2011) found that parental warmth along with monitoring and school involvement played significant role in development of intentional self-regulation over seven consecutive years. Hence, parental responsiveness and control are supposed to have their own positive role on psychological and instrumental outcomes.

However, in the study of Ngai (2015) that investigated the effect of parental boding on eight character strengths, positive effect of parental care and the negative effect of parental control were found. The study was done to adolescents in Hong Kong and the relation of parental responsiveness and control with strengths of love, kindness, social intelligence, integrity, bravery, persistence, fairness and self-regulation were examined. Although the positive effect of parental responsiveness was in line with the proposition of Darling (1999), the negative effect of parental control was in contradiction.

Following the work of Ngai (2015), the present study, with a focus on strengths of justice and in different setting, proposed the following hypotheses:

- (1) Parental responsiveness and control is different according to parent-child gender.
- (2) Parental responsiveness has significant positive effect on strengths of justice.
- (3) Parental control has significant negative effect on strengths of justice.

Methodology

Sample

379 adolescents from three high schools participated under the permission of respective principals. 135 males comprised 35.6% and 244 females comprised 64.4 % of the sample population.

Research Design

Quantitative survey method was used.

Instrumentation

Two questionnaires: Scale of Parenting Styles (see Appendix) and 96-item Value in Action Inventory were used to measure parental responsiveness and control, and the strengths of justice respectively.

Scale of Parenting Styles (SOPS) was developed by Gafoor and Kurukkan (2014), giving recommendation for measuring perceived parenting styles of south Asian adolescents. Parenting styles were supposed to measure through two dimensions: parental responsiveness and parental control. 19 items—1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34 and 36—measures parental responsiveness; 19 items—3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37 and 38—measures parental control. Rating has to be done with 5-point Likert Scale: 1 = very wrong, 2 = mostly wrong, 3 = sometimes right, sometimes wrong, 4 = mostly right, and 5 = very right.

96-items Value in Action Inventory (VIA Youth-96) was developed by Park and Peterson (2006) to measure 24 character strengths (4 items per each strength). Rating format is 5-point Likert Scale: 1 = not like me at all, 2 = a little like me, 3 = somewhat like me, 4 = mostly like me, and 5 = very much like me. VIA institute did not give access to scoring keys, but requested the data from researchers and sent the aggregate scores for individual strengths to respective researchers. The present study applied only the data of justice strengths.

Procedure

As first step of this study, related literature was reviewed. Then, relevant questionnaires were selected to measure variables of this study. For questionnaire administration, participants were recruited class by class while they were informed to remain in their class for non-participation. Those who wished to participate were gathered in a vacant classroom of respective school and first explained how to fill out the questionnaire. The whole administration

process took approximately 45 minutes. The collected data were coded into SPSS data file for data analysis.

Only after performing exploratory factor analysis and analysis of internal consistency to SOPS, hypotheses were tested so as to maximize the effectiveness of SOPS in Myanmar context. Profile Analysis and standard multiple regression analysis were applied for hypothesis testing.

Data Analysis and Findings

For the suitable application of SOPS to Myanmar parenting context, exploratory factor analysis (EFA) was performed first. According to Pallant (2011), efficient EFA requires two conditions: adequate sample size and appropriate strength of inter-item relationship. One common general rule of thumb for sampling adequacy in factor analysis is 10 to 15 participants per variable (Field, 2013) and the ratio was 9.95 (378/ 38) in the present study. Barlett's test of sphericity was also significant ($p < 0.001$). Kaiser-Meyer-Olkin (KMO) value was 0.879 for maternal parenting and 0.870 for paternal parenting, and it was greater than 0.8 which proved a meritorious sampling adequacy according to Hutcheson and Sofroniou (1999).

Therefore, the sample size of this study was reasonable for running EFA. Second was examining the inter-item correlation of SOPS. Every item possessed one correlation coefficient of above 0.25 at least. Field (2013) recommended the elimination of item which had lots of correlation coefficients below 0.3 in correlation matrix, but he reminded of the term he used—about 0.3 and lots of—which was not definite and clear, calling for flexible act according to the given situation. Following Field's (2013) suggestion, the present study set the criterion of removing item as “no correlation of above 0.25” in order to avoid too much stringency. Thus, all items of SOPS were qualified to be included in running EFA.

Principal Axis Factor Analysis was selected since this method was appropriate for measured items which were supposed to have latent variables (Leech et al., 2005) and this study intended to see the coherent indication of SOPS items for parental responsiveness and control in Myanmar context. For rotation technique, Varimax was selected because Field (2013) suggested varimax as a technique of orthogonal rotation approach preferred for uncorrelated factor solutions, and the two dimensions (responsiveness and control) were hypothetically uncorrelated. Items were extracted into two factors (see Table 1 and 2) and the relevance of factor loadings—loading on respective factors, cross loading and low loading—were examined.

Tabachnick and Fidell (2007) defined a cross loaded item as an item with loading value of 0.32 or higher for two or more factors. For identifying low loadings, one commonly-used criterion was 0.3 (Field, 2013). In maternal parenting, item 8, 28 and 32 cross loaded on both factors, the loadings of item 10, 22, 28, 30 and 34 were misplaced on control factor instead of responsiveness, and item 7 had a loading value of below 0.3. Similarly, in paternal parenting, loadings of responsiveness item 22, 26, 28, 30, 32 and 34 were misplaced on control factor, and item 2, 7 and 10 had loading values of below 0.3 although no cross loading appeared.

In elimination of irrelevant items, all items of misplaced and cross loadings were taken into account whereas for items of low loadings item 2 and 10 were left behind because these two items had loadings of above 0.3 in maternal parenting. Altogether 9 items (items 7, 8, 10, 22, 26, 28, 30, 32 and 34) of misplaced, cross and low loadings were eliminated. 29 items (11 for responsiveness and 18 for control) were remained. The internal consistency was 0.736 for maternal responsiveness, 0.835 for maternal control, 0.731 for paternal responsiveness and 0.834 for paternal control.

Table 1 Rotated Factor Matrix of Maternal Parenting

Items	Factor 1 (Control)	Factor 2 (Responsiveness)	Items	Factor 1 (Control)	Factor 2 (Responsiveness)
MP31	0.555		MP10	0.356	
MP17	0.551		MP33	0.351	
MP29	0.527		MP3	0.348	
MP32	0.499	0.322	MP15	0.343	
MP25	0.497		MP21	0.334	
MP23	0.487		MP28	0.329	0.309
MP35	0.484		MP7	<0.30	
MP9	0.482		MP1		0.647
MP34	0.48		MP16		0.53
MP38	0.477		MP4		0.506
MP19	0.476		MP12		0.499
MP30	0.476		MP8	0.317	0.434
MP37	0.47		MP14		0.427
MP13	0.464		MP2		0.391
MP22	0.436		MP18		0.379
MP11	0.433		MP36		0.368
MP5	0.418		MP20		0.361
MP27	0.416		MP24		0.343
MP26	0.397		MP6		0.316

Table 2 Rotated Factor Matrix of Paternal Parenting

Items	Factor 1 (Control)	Factor 2 (Responsiveness)	Items	Factor 1 (Control)	Factor 2 (Responsiveness)
FP31	0.608		FP11	0.380	
FP17	0.581		FP19	0.372	
FP38	0.531		FP3	0.365	
FP29	0.518		FP21	0.364	
FP35	0.495		FP15	0.302	
FP37	0.489		FP7	<0.30	
FP32	0.480		FP1		0.615
FP13	0.469		FP16		0.536
FP9	0.464		FP4		0.496
FP30	0.458		FP12		0.436
FP26	0.449		FP24		0.424
FP22	0.434		FP14		0.423
FP28	0.432		FP18		0.420
FP27	0.429		FP8		0.378
FP5	0.420		FP20		0.378
FP23	0.414		FP6		0.357
FP33	0.410		FP36		0.330
FP34	0.405		FP10		<0.30
FP25	0.405		FP2		<0.30

To answer hypothesis No. 1, profile analysis which was a special application of MANOVA according to Tabachnick and Fidell (2007), was applied and the design was within-between mixed design. The four parenting features—maternal responsiveness, paternal responsiveness, maternal control and paternal control—were treated as within-subject factor, and gender of children was treated as between-subject factor. Box's M test was significant, $F(10, 362425.188) = 2.352, p = 0.009$, indicating the violation of the assumption for equal covariance across groups. For cases of assumption violations, Tabachnick and Fidell (2007) recommended Pillai's Trace as more robust test statistic. Thus, assessment of significant effect was performed based on Pillai's Trace statistic (see Table 3). There was only significant main effect of parenting features while main effect of child gender and interaction effect were not significant. No main and interaction effect of child gender suggested that parental responsiveness and control were not different for boys and girls.

Table 3 Multivariate Tests for the Effect of Parenting Features and Child Gender

Factors	<i>F</i>	<i>df</i>	<i>Sig.</i>	η_p^2
Gender	0.812	(2, 376)	0.445	0.004
Parenting Features	21.186	(2, 376)	<0.001	0.101
Parenting Features * Gender	2.023	(2, 376)	0.134	0.011

Because of significant parenting feature effect, further examination was proceeded into two within-subject measures—parental responsiveness and parental control (see Table 4). Maternal responsiveness was slightly higher than paternal responsiveness, and maternal control was moderately higher than paternal control.

Table 4 Within-subject Contrast of Parenting Features

Measure	Mean	<i>F</i>	<i>df</i>	<i>Sig.</i>	η_p^2
Parental Responsiveness	39.530 (Mother)	8.777	(1, 377)	0.003	0.023
	38.629 (Father)				
Parental Control	70.254 (Mother)	39.151	(1, 377)	<0.001	0.094
	68.216 (Father)				

To answer hypothesis No. (2) and (3) which questioned the predictability of parenting features on strengths of justice, standard multiple regression analysis was conducted because standard regression technique can show the variance of a dependent variable caused by a group of independent variables according to Pallant (2011). Maternal responsiveness, paternal responsiveness, maternal control and paternal control which were four parenting features were regressed on teamwork, fairness and leadership separately (see Table 5). Only maternal responsiveness dimension could predict significantly for all strengths of justice, and maternal control significantly predicted on teamwork. Paternal responsiveness and control had no significant prediction on all strengths of justice.

Table 5 The Prediction of Parenting Features on Strengths of Justice

	Teamwork	Fairness	Leadership
Constant	2.432	2.478	1.376
Maternal Responsiveness (β)	0.151*	.144*	.212**
Paternal Responsiveness (β)	-0.027	-.048	.079
Maternal Control (β)	0.173*	.125	-.052
Paternal Control (β)	0.073	.080	.088
R^2	0.100	0.068	0.082
F (4, 374)	10.342	6.839	8.338
Sig.	<0.001	<0.001	<0.001

Note: * The prediction is significant at 0.05 level.

** The prediction is significant at 0.01 level.

Discussion

The present study investigated the effect of parent-child gender type on parental responsiveness and control, and the relationship between those parenting features and the strengths of justice.

In exploration of parenting differences in terms of parent gender which was part of hypothesis No. 1, it was found that Myanmar adolescents perceived their mothers as more responsive and more controlling to them than their fathers. This finding was consistent with Shek (2000) who found perception of less responsive and less demanding fathers. It also indirectly supported Patterson's (1982) proposition about mother's more engagement in disciplinary actions in that disciplining also includes control and demands. However, in exploration of parenting differences in terms of child gender which was second part of hypothesis No. 1, no difference in perception with parental responsiveness and control was found between boys and girls. Many previous studies in the field of parenting proved more control of fathers on son (Rohner & Pettengill, 1985; Trommsdorff & Iwawaki, 1989; Xie, 1998). Thus, the finding of present study was contradicted with them, and also contradicted with more maternal responsiveness to girls what Leaper (2002) found.

To answer hypothesis No (2) and (3), the maternal responsiveness, paternal responsiveness, maternal control and paternal control were regressed on strengths of justice. Just maternal responsiveness positively predicted all strengths of justice, while maternal control positively predicted only the strength of teamwork. On the other hand, paternal responsiveness and control showed no significant prediction. Hence, the prediction of parental responsiveness and control on strengths of justice was different according to parent gender, and the proposition of both Hypotheses (2) and (3) could not be fully verified.

Ngai (2015) found the positive effect of parental responsiveness and negative effect of parental control on eight character strengths including fairness. The present study also found the positive prediction of maternal responsiveness on all strengths of justice and it was completely in line with his findings. Another finding of the present study which was the positive prediction of maternal control on strength of teamwork was contradicted with what Ngai (2015) found. But it was indirectly consistent with the claims of Darling (1999)—parental control (demandingness) predicts behavioural control—in that strength of teamwork consists of behavioural control. For the rest two strengths (strengths of fairness and leadership), maternal control could not predict. For the case of paternal parenting, both responsiveness and control were not related with strengths of justice of adolescents. This finding questioned the role of father in character

development of Myanmar adolescents. Also in testing hypothesis No. (1) of the present study, less responsiveness and control of father were found.

Conclusion

The findings of present study highlighted the role of culture and accepted standards with parenting, in that the effect of parenting features were different in terms of mother and father. Myanmar adolescents perceived their mother as more responsive and more controlling than their father, and consequently only maternal responsiveness and control contributed in prediction of strengths of justice while paternal responsiveness and control had no contribution. In Myanmar, mothers are assumed to be mainly responsible for caring and disciplining while the duty of fathers is to lead the household and community which puts them far away from their children technically. This finding supported portrayal of Myanmar father as a distant but loving figure and Myanmar mother as closet person to children (Yin, 2016). All in all, the effect of community parenting standards on psychological outcomes was also implicitly revealed by this study, supporting the proposition of Lerner et al. (2002)—the role of culture and its meaning for parenting in development of an individual.

References

- Barnes, G. M., Farrell, M. P., & Cairns, A. (1986). Parental socialization factors and adolescent drinking behaviors. *Journal of Marriage and the Family*, 48, 27-36.
- Baumrind, D. (1968). Authoritarian vs. authoritative parental control. *Adolescence*, 3, 255-272.
- Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monograph*, 4(1, Pt. 2), 1-103.
- Bowers, E. P., Gestsdottir, S., Geldhof, G. J., Nikitin, J., von Eye, A., & Lerner, R. M. (2011). Developmental trajectories of intentional self-regulation in adolescence: The role of parenting and implications for positive and problematic outcomes among diverse youth. *Journal of Adolescence*, 34, 1193-1206. doi:10.1016/j.adolescence.2011.07.006.
- Darling, N. (1999). Parenting style and its correlates. *ERIC Digest*, 1-7.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed). London: Sage publications.
- Gafoor, K. A., & Kurukkan, A. (2014). Construction and validation of scale of parenting style. *Guru Journal of Behavioral and Social Sciences*, 2(4), 315-323.
- Gestsdottir, S., Urban, J., Bowers, E. P., Lerner, J. V., & Lerner, R. M. (2011). Intentional self-regulation, ecological assets, and thriving in adolescence: A developmental systems model. *New Directions for Child and Adolescent Development*, 133, 61-76. doi:10.1002/cd.304.
- Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence: A social contextual perspective. *Journal of Educational Psychology*, 81, 143-154.
- Hutcheson, G., & Sofroniou, N. (1999). *The multivariate social scientist*. London: Sage.
- Leaper, C. (2002). Parenting girls and boys. In M. H. Bornstein (Series ed.), *Handbook of parenting: Vol. 1, Children and Parenting* (2nd ed., pp. 189-225). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Leech, N. L., Barrett, K. C., & Morgan, G. A. (2005). *SPSS for intermediate statistics: Use and interpretation* (2nd ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Lerner, R. M., Rothbaum, F., Boulos, S., & Castellino, D. R. (2002). Developmental systems perspective on parenting. In M. H. Bornstein (Series ed.), *Handbook of parenting: Vol. 2, Biology and ecology of parenting* (2nd ed., pp. 315-344). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Lounsbury, J. W., Fisher, L. A., Levy, J. J., & Welsh, D. P. (2009). An investigation of character strengths in relation to the academic success of college students. *Individual Differences Research*, 7, 52-69.
- Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In P. Mussen, & E. M. Hetherington (Eds.), *Handbook of Child Psychology: Socialization, personality, and social development* (Vol. 4). New York: Wiley.

- Ngai, S. S. (2015). Parental bonding and character strengths among Chinese adolescents in Hong Kong. *International Journal of Adolescence and Youth*, 20(3), 317-333. doi: 10.1080/ 02673843 .2015. 1007879
- Niemiec, R. M. (2013). VIA character strengths: Research and practice (The first 10 years). In H. H. Knoop & A. Delle Fave (Eds.), *Well-being and cultures: Perspectives on positive psychology* (pp. 11-30). New York: Springer.
- Pallant, J. (2011). *SPSS survival manual: A step by step guide to data analysis using the SPSS Program* (4th ed). Allen & Unwin: Berkshire.
- Park, N. (2004). Character strengths and positive youth development. *The Annals of the American Academy of Political and Social Science*, 591, 40–54.
- Park, N. (2009). Building strengths of character: Keys to positive youth development. *Reclaiming Children and Youth*, 18(2) 42-47.
- Park, N., & Peterson, C. (2006). Moral competence and character strengths among adolescents: The development and validation of the Values in Action Inventory of Strengths for Youth. *Journal of Adolescence*, 29, 891-905.
- Park, N., & Peterson, C. (2008). Positive psychology and character strengths: Application to strengths-based school counseling. *Professional School Counseling*, 12(2), 85-92.
- Patterson, G. R. (1982). *Coercive family process*. Eugene, OR: Castlia Press.
- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press.
- Rohner, R. P., & Pettengill, S. M. (1985). Perceived parental acceptance–rejection and parental control among Korean adolescents. *Child Development*, 56, 524–528.
- Ruch, W., Martínez-Martí, M. L., Proyer, R. T., & Harzer, C. (2014). The Character Strengths Rating Form (CSRF): Development and initial assessment of a 24-item rating scale to assess character strengths. *Personality and Individual Differences*, 68, 53–58.
- Schaefer, E. S. (1959). Acircumplex model for maternal behavior. *Journal of Abnormal and Social Psychology*, 59, 226–235.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55, 5–14. doi:10.1037/0003-066X.55.1.5
- Shek, D. (2000). Differences between fathers and mothers in the treatment of, and relationship with their teenage children: Perception of Chinese adolescents. *Adolescence*, 35, 135-146.
- Skinner, E., Johnson, S., & Snyder, T. (2005). Six dimensions of parenting: A motivational model. *Parenting Science and Practice*, 5(2), 175-203.
- Slater, P. E. (1962). Parental behavior and the personality of the child. *Journal of Genetic Psychology*, 101, 53–68.
- Steinberg, L., Dornbusch, S. M., & Brown, B. B. (1992). Ethnic differences in adolescent achievement: An ecological perspective. *American Psychologist*, 47, 723-729.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). New York: Allyn and Bacon.
- Trommsdorff, G., & Iwawaki, S. (1989). Students' perceptions of socialization and gender role in Japan and Germany. *International Journal of Behavioral Development*, 12, 485–493.
- Wagner, L., & Ruch, W. (2015). Good character at school: Positive classroom behavior mediates the link between character strengths and school achievement. *Frontiers in Psychology*, 6(24). doi: 10.3389/ fpsyg.2015.00610
- Xie, Q. (1998). Perceptions of childrearing practices by Chinese parents and their only children, and their relations to children's school achievement. *Dissertation Abstracts International*, 58, 3425.
- Yin, S. M. (2016). *Culture Shock! Myanmar*. Singapore: Marshall Cavendish Editions.

Appendix : Scale of Parenting Styles

1. My mother/father does whatever I tell.
2. My mother/father spends free time with me.
3. My mother/father points out my mistakes in the manner that I understand.
4. My mother/father gives money for my needs.
5. My mother/father discusses the benefits and detriments of my learning topics.
6. My mother/father considers my likes in food.
7. My mother/father controls my game when in excess.
8. My mother/father shows love to me.
9. My mother/father enquires the reason for my failure.
10. My mother/father helps me in studying.
11. My mother/father confers responsibilities in accordance with my growth.
12. My mother/father has faith in me
13. My mother/father enquires the reasons for reaching home late
14. My mother/father accepts my privacy
15. My mother/father takes care of my dressing
16. My mother/father fulfils my desires with available means.
17. My mother/father makes me aware that the responsibility of what i do is mine itself.
18. My mother/father accepts when i say no to what i dislike.
19. My mother/father tells how i should behave with their friends.
20. My mother/father talks to me praising about their friends.
21. My mother/father tries to frame my likes and dislikes.
22. My mother/father appreciates when i try to become independent.
23. My mother/father punishes for my mistakes.
24. My mother/father shows love when i do any mistake.
25. My mother/father enquires who my friends are.
26. My mother/father has given me freedom to select the subject for study.
27. My mother/father organizes time for my play.
28. My mother/father gives priorities to my preferences in studies.
29. My mother/father demands me to be systematic in studies.
30. My mother/father emphasizes my successes.
31. My mother/father advices me.
32. My mother/father celebrates in my successes with me.
33. My mother/father discourages unhealthy foods.
34. My mother/father gets anxious when i am late to reach home.
35. My mother/father inquires how i spend money.
36. My mother/father buy dresses for me according to the latest trends.
37. My mother/father enquires how i spend my free time.
38. My mother/father gives me timely advices.

AN INVESTIGATION INTO NUMERICAL REASONING ABILITY OF MIDDLE SCHOOL STUDENTS IN SINTGU TOWNSHIP

Zaw Than Win¹, Khin Thuza Saw²

Abstract

The main aim of this study is to examine the numerical reasoning ability of middle school students in Sintgu Township, Mandalay Region. Then, the differences in numerical reasoning ability by gender, by locality and by age were investigated. Moreover, the relationship between the students' numerical reasoning ability and their mathematics achievement were also investigated. A total of 615 Grade 9 students (275 males and 340 females) from six schools which consist of three high schools, one high school (branch), one middle school and one middle school (branch) were selected as the participants for the study. The quantitative research design and the descriptive survey method were used. Numerical reasoning ability test (40 items) was developed to measure students' numerical reasoning ability as an instrument for this study. The p-value and discrimination index of the 40 items were within the acceptable range of 0.20 to 0.90 and equal to (or) greater than 0.30 respectively. In the analysis of data, descriptive statistics, independent sample *t*-test, one way ANOVA and correlation technique were used in this study. According to the result of findings, middle school students were not so good but satisfactory in the numerical reasoning ability. Moreover, *t*-test results confirmed that male students had slightly higher numerical reasoning ability than female students and urban school students' numerical reasoning ability was greater than the rural schools students'. One way ANOVA results showed that the more the younger students, the more the higher numerical reasoning ability. According to correlation analysis, students' numerical reasoning abilities were found to be significantly and positively correlated with their mathematics achievement ($r=.515$, $p<.01$). Therefore, research findings suggested that students' numerical reasoning abilities should be enriched by using various strategies as the numerical reasoning could influence their mathematics achievement.

Keywords: Reasoning, Numerical, Numerical Reasoning Ability, Numerical Reasoning Ability Test

Introduction

The ability to think critically and use numerical reasoning skills has become much more important in the workforce in recent years. Psychometric testing can be a big help in determining whether a given individual has what is needed for a specific position, by measuring applicant characteristics such as skills, abilities and personality types. Reasoning is generally associated with rules and methods, formal laws of logic. It consists of mental exploration instead of motor exploration as it involves mental exploration of the reason or cause of an event or happening. Reasoning ability is a method of measuring the mental capacity. It includes the ability to solve problems and arrive at answers, i.e., solutions in a logical way and making generalization (Fatima, 2008). Thus, it needs to study reasoning ability of students who will become future builders of our country.

Numerical reasoning is considered to be one of the most basic skills needed today's data-driven educational field, and without strong numerical reasoning skills, it would be difficult to succeed in many activities today. Especially, reasoning ability has had growing evidence that children who have had the experience of logical thinking in mathematics early in life are the ones who will develop intellectually to the optimum level.

Numerical reasoning ability (NRA) means the understanding of conceptual knowledge or numbers, rules and procedures of arithmetic operations and application of these rules in logical strategies (algorithmically, logically, inductively) in order to solve problems. Numerical reasoning ability (NRA) is one of the most basic skill areas, one that exists in small children well

¹ Tutor, Department of Educational Psychology, Sagaing University of Education

² Dr, Retired Principal, Thingangyun Education College

before they are taught mathematics in school. Numerical reasoning tests (NRT), also known as data interpretation or numerical critical reasoning tests (NCRT), involve evaluating situations and drawing conclusions from the data provided to assess one or several characteristics as well as critical thinking ability, basic or general arithmetic operations, ability to perform estimates and ability to analyze graphs and other data.

Sumangala (1995, cited in Choudhury & Kumar Das, 2012) found that the numerical ability, numerical reasoning ability to choose symbols, spatial ability and abstract reasoning abilities are significantly correlated to the achievement in mathematics. In the past, researcher has reported that numerical reasoning ability of male students is higher than that of female students and also geographical and social characteristics can influence numerical reasoning of students and is correlated to academic achievements (Aye Aye Myint, 1997).

Yerkes (1921, cited in Toquam, Corpe and Dunnette, 1991) examined that the differences between males and females on measures of general ability may be regarded as of little consequence. In his study, measures of cognitive ability constructs typically yield mean score differences between males and females, but for many constructs these differences are very small. Emeke and Adegoke (2001) examined the effect of test response mode, students' numerical ability and gender on the cognitive achievement of senior secondary school. The study revealed that the higher the numerical ability of students, the better their performance in the achievement test. This study found a significant influence of quantitative ability on students' academic achievement. Ursos and Bauyot (2006) showed that a moderate correlation exists between Numerical Ability Test and Achievement Test in College Algebra.

Purpose of the Study

The main purpose of this research study is to investigate into numerical reasoning ability of middle school students (Grade 9 students) in Sintgu Township.

Review of Related Literature

The Meaning and Nature of Numerical Reasoning

Numerical reasoning is a method of measuring the mental capacity. It includes the ability to solve problems and arrive at answers, i.e., and solution in a logical way and making generalization (Fatima, 2008). Numerical reasoning is a higher-order thinking skill and an important factor in assessing work performance. Numerical reasoning is not the same as mathematics, despite that it involves numbers. Numerical reasoning is about using numerical data to make reasoned decisions and problem solve. It relies on the ability to recognize how to go about solving a numerical problem, understanding the relationships between numbers, prior to completing the mathematical calculation required (Savill, 2011).

Psychologists (Simon & Schuster, 2000) generally agree there are four basic reasoning skills that are important to everyday living: spatial reasoning, logical reasoning, numerical reasoning and verbal reasoning. These skills develop when you are a child and continue to grow in varying degrees as you get older depending on your genetic disposition and learning environment. People with good spatial reasoning skills, such as artists and engineers for example, can easily visualize and mentally manipulate objects, while others, like computer analysts and scientists, are strong in logical and numerical reasoning.

Adegoke's Numerical Reasoning Model

In order to study the relationships between the fundamental notions of numerical reasoning ability and attainment in mathematics, Adegoke developed a Structural Regression model (SR) (see Figure). SR is a variant of structural equation models. The other examples are Path Analysis (PA) and Confirmatory Factor Analysis (CFA) (See Adegoke, 2012; Kline, 2005).

for more detailed information on Structural Equation Modelling). An SR model results from the synthesis of path model (PA) and CFA measurement models.

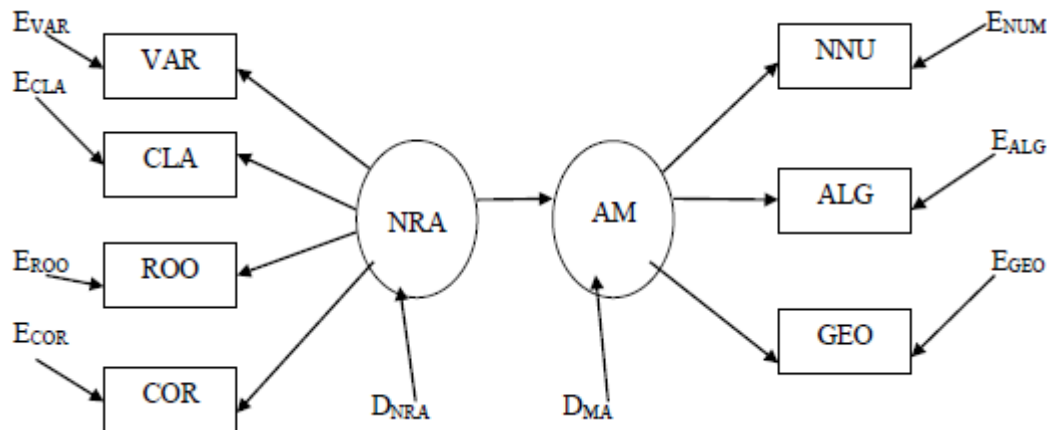


Figure Structural Regression Model of Numerical Reasoning Ability and Mathematics Achievement

As in PA, SR allows test of hypotheses about direct and indirect causal effects. However, unlike PA, these effects incorporate a measurement component that represents observed variables as indicators of underlying factors as in CFA. In SR models, the researcher can test hypotheses about structural and measurement relations within a single model (Kline, 2005).

In the figure, NRA and AM are factors or latent traits and they are not directly measured but rather assessed indirectly using scores from the indicators. For example, NRA is assessed through students' ability to recognize the four processes of recognition of variable (VAR) classification (CLA), order (ROO), and recognition of correspondences (COR) in dealing with the simple materials which is basic to mathematics, namely, arithmetic number, algebraic symbols, and spatial figures. AM is in turn predicted by NRA, a second factor, which is assessed through scores in number and numeration (NNU), algebra (ALG), and geometry (GEO). In the figure Es represent errors in the measurement of observed variables and Ds represent Disturbance (variance) in the latent traits (or factors). Because the causes of exogenous variables are not represented in the models, they are free to vary and covary (Kline, 2005). However, note that the Ds associated with latent traits in the figure reflect omitted causes of latent variable rather than observed variables (Adegoke, 2013).

Ways to Improve Numerical Reasoning Ability

In order to develop numerical reasoning skills, National Numeracy Frame work for Wales (2013) described that people are able to:

- transfer mathematical skills to a variety of contexts and everyday situations
- identify the appropriate steps and information needed to complete the task or reach a solution
- select appropriate mathematics and techniques to use
- select and use suitable instruments and units of measurement
- choose an appropriate mental or written strategy and know when it is appropriate to use a calculator
- estimate and visualize size when measuring and use the correct units
- explain results and procedures clearly using mathematical language

- refine information methods of recording written calculations, moving to formal methods of calculation when developmentally ready
- use appropriate notation, symbols and units of measurement
- select and construct appropriate charts, diagrams and graphs with suitable scales
- select from an increasing range of checking strategies to decide if answers are reasonable
- interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible
- draw conclusions from data and recognize that some conclusions may be misleading or uncertain

Sampling

By using stratified random sampling technique, the schools and students were selected from Sintga Township, Mandalay Region. Six schools which consist of three high schools, one high school (branch), one middle school and one middle school (branch) were selected. These schools were classified into one urban (B.E.H.S-Sintga) and five rural schools. A total of 615 students participated in this study. The sample of Grade 9 students includes 275 (44.72%) males and 340 (55.28%) females. All the participants of this study were examined by age levels such as 13, 14 and 15 years. The students who were between 13 years old and 13 years and six months old were regarded as 13 years age group (13yr). The students who were above 13 years and six months old and below 14 years and six months old were identified as 14 years age group (14yr) and above 14 years and six months old were identified as 15 years age group (15yr).

Methodology

The quantitative research design and the descriptive survey method were taken in the present study. The numerical reasoning ability test was employed to collect data and to identify the numerical reasoning ability of the students.

Research Instrument

The test of 87 items was administered to 100 Grade 9 students on pilot testing during the last week of November, 2013. After that, item analysis, editing and selection procedures were performed using the pilot testing data. At this stage, p-value (difficulty index in CTT) and point-biserial correlation (the discrimination index) for each item were calculated by using BILOT-MG software. The p-value is the proportion of examinees who answer the item correctly and its value may range from 0 to +1. The point-biserial correlation reflects item test correlation when a discrete binary variable is correlated with a continuous variable and its value may range from -1 through 0 to +1 (Nu Nu Khaing, 2011).

Table The Value of P-Value and point-biserial correlation of Selected 40 Items

No.	P-Value	Discrimination Index	No.	P-Value	Discrimination Index
Item 1	0.43	0.57	Item 21	0.74	0.67
Item 2	0.31	0.42	Item 22	0.44	0.35
Item 3	0.28	0.40	Item 23	0.83	0.80
Item 4	0.34	0.35	Item 24	0.71	0.40
Item 5	0.67	0.48	Item 25	0.69	0.58
Item 6	0.39	0.49	Item 26	0.35	0.46
Item 7	0.36	0.39	Item 27	0.64	0.65

No.	P-Value	Discrimination Index	No.	P-Value	Discrimination Index
Item 8	0.53	0.46	Item 28	0.70	0.41
Item 9	0.57	0.45	Item 29	0.55	0.34
Item 10	0.45	0.48	Item 30	0.65	0.66
Item 11	0.75	0.70	Item 31	0.54	0.37
Item 12	0.56	0.47	Item 32	0.25	0.45
Item 13	0.24	0.56	Item 33	0.73	0.58
Item 14	0.71	0.45	Item 34	0.81	0.60
Item 15	0.77	0.36	Item 35	0.63	0.66
Item 16	0.85	0.40	Item 36	0.5	0.58
Item 17	0.87	0.69	Item 37	0.51	0.6
Item 18	0.41	0.31	Item 38	0.21	0.47
Item 19	0.78	0.38	Item 39	0.47	0.54
Item 20	0.73	0.51	Item 40	0.41	0.57

In conducting the item analysis, it was found that the values of point-biserial correlation of five items in comparison quantity questions were less than 0.30. This means that the examinees who got the correct item tend to do poorly on the overall test, on the other hand, all these items were difficult for the students with low p-value. The low p-value possessed a high item difficulty. So, all comparisons were left out in the test by the researcher. Moreover, 3 items had high p-values which were more than 0.90 and 8 items were less than 0.20. The high p-value implied that the item was very easy and the answer was probably too obvious for the examinee group. So, they were discarded from the test.

And then, the values of point-biserial correlation of 14 items were less than 0.30. It implies that the examinees who get the item correct tend to do poorly on the overall test, and that the examinees who get the items wrong tend to do well on the test. So, these 14 items were removed again. According to this result, 57 items that were between 0.20 and 0.90 p-value and equal to (or) greater than 0.30 point-biserial correlation were chosen with construct validity. Among the remaining 57 of the 87 items, there were no items with negative point-biserial correlation. In addition, 17 items had the same p-value with one another but less point-biserial correlation than other. Therefore, these 17 items were eliminated, and 40 items were left to conduct the final test administration.

The revised test of 40 items consists of 8 word problems, 8 data interpretation questions, 4 mathematical puzzles, 12 number series and 8 numerical equations.

Data Analysis and Finding

In this study, descriptive statistics was applied to investigate the numerical reasoning ability of middle school students. The independent sample *t*-test, One-way ANOVA and Pearson Product-moment correlation were utilized in this research.

The descriptive analysis was computed to know the mean and standard deviation, the maximum and minimum scores to find out students' numerical reasoning ability. The independent sample *t*-test was used to examine whether there were significant differences in numerical reasoning ability of students between the two groups by gender and by locality. In addition, One-way ANOVA was used to determine whether there were significant differences in numerical reasoning ability of students by the age. And then, Post Hoc analyses were conducted with ANOVA. Moreover, Pearson Product-moment correlation was applied to study the relationships between the numerical reasoning ability and mathematics achievement of students.

Numerical Reasoning Ability of Middle School Students

Numerical reasoning ability of middle school students was measured by five subscales which consist of: word problem, data interpretation, mathematical puzzles, number series and numerical equation. Students' numerical reasoning scores were reported by means of descriptive statistics and frequency distribution.

Table 1 Descriptive Statistics for Numerical Reasoning Ability

Subscales	N	Minimum	Maximum	Mean	Std. Deviation
Word Problem	615	0	8	3.37	1.73
Data Interpretation	615	0	8	4.22	1.96
Mathematical Puzzles	615	0	4	2.34	1.05
Number Series	615	0	12	5.69	2.70
Numerical Equation	615	0	8	3.51	2.10
Numerical Reasoning Ability (Total)	615	6	38	19.12	6.73

Table 1 presented mean and standard deviation, the maximum and minimum scores of numerical reasoning ability for the whole sample with five subscales. According to the table, the mean and standard deviation for the whole sample were 19.12 and 6.73, the maximum and minimum scores were 6 and 38. The mean scores for word problem, data interpretation, mathematical puzzle, number series and numerical equation were 3.37, 4.22, 2.34, 5.69 and 3.51 respectively.

Comparison of Numerical Reasoning Ability by Gender

To investigate the difference between male and female students in numerical reasoning ability, descriptive analysis was made.

Table 2 Descriptive Statistics for Numerical Reasoning Ability by Gender

Variable	Gender	N	Mean	Standard Deviation	Mean Difference
Numerical Reasoning	Male	275	19.12	6.76	0.01
	Female	340	19.11	6.72	

Table 2 shows that the mean scores of numerical reasoning ability for male students exceed 0.01 than that of female students.

Table 3 The Result of *t*-test for Numerical Reasoning Ability by Gender

Variable	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Numerical Reasoning Ability	Male	275	0.022	613	0.983	0.01
	Female	340				

According to Table 3, the result of *t*-test indicated that there was no significant difference between male and female students in the numerical reasoning ability but male students were slightly higher than female students in the numerical reasoning ability. Therefore, the results of *t*-test confirmed the assumption that there was no significant difference between male and female students in numerical reasoning abilities ($t = 0.022$).

Comparison of Numerical Reasoning Ability by Locality

To investigate the difference between rural and urban school students in numerical reasoning ability, descriptive statistics was analyzed.

Table 4 Descriptive Statistics for Numerical Reasoning Ability by Locality

Variable	Locality	N	Mean	Standard Deviation	Mean Difference
Numerical Reasoning Ability	Urban	150	20.25	7.20	1.50
	Rural	465	18.75	6.54	

According to Table 4, it can be seen that the mean scores of numerical reasoning between rural and urban schools students were 20.25 and 18.75 and their standard deviations are 7.198 and 6.543, respectively. And then, the mean scores of numerical reasoning of students in urban school exceed 1.50 than that of students in rural schools in this test. Therefore, to investigate the locality differences of numerical reasoning between rural and urban school students, the independent sample *t*-test was analyzed.

Table 5 The Result of *t*-test for Numerical Reasoning Ability by Locality

Variable	Locality	N	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Numerical Reasoning Ability	Urban	150	2.386	613	0.017*	1.50
	Rural	465				

* The mean difference is significant at the 0.05 level.

Table 5 indicated that students in urban school were significantly different from students in rural school on numerical reasoning ability at 0.05 level. Inspection of two group means indicated that the mean score for numerical reasoning ability of students in urban school was significantly higher than the mean score for numerical reasoning ability of students in rural schools with mean difference of 1.50 points. Therefore, the result of *t*-test concluded that there was significant difference between rural and urban school students in their numerical reasoning ability ($t=2.386$).

Comparison of Numerical Reasoning Ability by Age

To find the students' numerical reasoning by their age, descriptive statistics was conducted. All the participants of this study were examined by age group such as 13, 14 and 15 years. The students who were between 13 years old and 13 years and six months old were regarded as 13 years age group (13yr). The students who were above 13 years and six months old and below 14 years and six months old were identified as 14 years age group (14yr) and above 14 years and six months old were identified as 15 years age group (15yr).

Table 6 Means and Standard Deviations for Numerical Reasoning by Age

Variable	Age	N	Mean	Standard Deviation
Numerical Reasoning	13yr	227	19.39	6.84
	14yr	342	19.31	6.65
	15yr	46	16.37	6.36

According to Table 6, the mean score of numerical reasoning of students in 13 years was 19.39 and 14 and 15 years were 19.31 and 16.37, respectively. Students in 13 years had higher numerical reasoning than that of students in 14 years, and also numerical reasoning of students

in 14 years was higher than 15. Therefore, the students in 13 years had higher numerical reasoning than that of other (14 years, 15 years).

Comparisons of Mean Scores of Numerical Reasoning by Age

Moreover, the researcher investigated whether there was significant difference in numerical reasoning by their age. Therefore, a one-way ANOVA was used to examine the differences among their age (see Table 7).

Table 7 ANOVA Results of Numerical Reasoning by Age

	Sum of Squares	df	Mean Square	F	p
Between Groups	376.205	2	188.102	4.191	0.016*
Within Groups	27465.37	612	44.878		
Total	27841.57	614			

* The mean difference is significant at the 0.05 level.

As shown in Table 7, it can be seen that there were significant differences by their age concerning the numerical reasoning, ($F(2,612) = 4.191, p < 0.05$). This means that numerical reasoning of middle school students are different according to their age. And then, to find out specifically means comparison by their age, Post Hoc Test was employed by Tukey method and the students' numerical reasoning was interpreted by using multiple comparison method (see Table 8).

Table 8 The Results of Post Hoc Test for Numerical Reasoning by Age

(I) Age	(J) Age	Mean Difference (I-J)	p
13 yr	14 yr	0.081	0.989
	15 yr	3.018*	0.015
14 yr	13 yr	-0.081	0.989
	15 yr	2.937*	0.015
15 yr	13 yr	-3.018*	0.015
	14 yr	-2.937*	0.015

* The mean difference is significant at the 0.05 level.

From these results, it can be seen that the 13-year-old students were higher in numerical reasoning ability than the 14-year-old students with a mean difference of 0.081 points, and than the 15-year-old students with a mean difference of 3.018 points. Moreover, numerical reasoning ability scores of students in 14 years were higher than that of students in 15 years with a mean difference of 2.937 points. According to this result, there were significant differences in numerical reasoning ability among their age levels. And then, numerical reasoning ability of students in 13 years the had highest and the students in 15 years had the lowest in this research. So, it can be concluded that the younger students have better performance in numerical reasoning ability than that of the older students in the same group.

Numerical Reasoning Ability and Mathematics Achievement

Descriptive Statistics of Mathematics Achievement

In this study, Grade 9 students' mathematics achievement was identified by monthly mathematics achievement tests scores from June to November. Students' mathematics achievement was determined by calculating the mean scores of monthly test scores. Table 9 gives information about the descriptive statistics of students' mathematics achievement.

Table 9 Descriptive Statistics for Mathematics Achievement

	N	Minimum	Maximum	Mean	Std. Deviation
Mathematics Achievement	615	40	100	75.75	17.50

As shown in Table 9, it can be seen that maximum and minimum scores of students' mathematics achievement were 100 and 40; with a mean score of 75.75 and their standard deviation was 17.50.

The Relationship between Numerical Reasoning Ability and Mathematics Achievement

The Pearson Product-Moment Correlation Coefficient was used to find out the correlation between numerical reasoning ability and mathematics achievement (see Table 10).

Table 10 The Relationship between Numerical Reasoning Ability and Mathematics Achievement

	Numerical Reasoning Ability	Mathematics Achievement
Numerical Reasoning Ability	1	.515**
Mathematics Achievement	.515**	1

** Correlation is significant at the 0.01 level (2-tailed).

According to Table 9, the result revealed that there was significant positive correlation between numerical reasoning ability scores and mathematics achievement mean scores ($r=0.515$, $p<.01$). This means that if Grade 9 students' numerical reasoning ability was higher, their mathematics achievement was higher. The strength of correlation was satisfactory.

Conclusion and Suggestions

The main aim of this study was to investigate numerical reasoning ability of middle school students in Sintgu Township. This study focused on the comparisons of numerical reasoning ability of middle school students by gender, by locality and by their age levels. Moreover, the relationship between students' numerical reasoning ability and their mathematics achievement were also investigated. The findings indicated that although students' numerical reasoning abilities were not so good, but satisfactory in the present study.

According to the above studies, it was reported that the students' numerical reasoning abilities between males and females were not significant difference but male students were slightly higher than that of female students in this study. This result may also be possible because of the nature of intelligence and perception of the male students had higher than the female students.

From the perspective of locality, the students in urban schools have higher numerical reasoning ability than that of students in rural schools. That is why the differences of some factors (facilities, socio-economic status, geographic conditions and so on) exist between urban and rural students.

Based on research finding, it was found that the age levels of students affect their numerical reasoning ability. In this research, the younger, the student the higher their numerical reasoning ability. It may be seemed that the younger students have much more attention and interest on the numbers than the older.

Moreover, this research confirmed the moderate relationship by investigating the correlation between numerical reasoning ability and mathematics achievement of students. Therefore, the high ability of numerical reasoning can raise mathematics achievement scores.

Similarly, Adegoke (2013) showed that numerical reasoning ability predicts attainment in mathematics quite well and increased reasoning ability can give more mathematics attainment.

According to the results of the present study, it is obvious that the students' mathematics achievement largely depends on their numerical reasoning abilities. That is why, to improve the numerical reasoning ability of the students, the following suggestions and recommendations would like to be conveyed from this study.

It is clear that the students must have high intelligence level in order to succeed in both Art and Science subjects. Getting this point depends on not only training of school teachers but students' consistent practice to all instructions. Especially, in this knowledge age, positive cooperation of teacher and student take a crucial role in educational field. Moreover, the teacher should attempt to give special cognitive abilities that can help students to build up their sound future life. No one can deny that one of the cognitive abilities, numerical reasoning ability, stands the main role of students' bright future for education.

Since this research showed that the numerical reasoning ability of boy students were slightly better than that of girl students, the teachers should give more treatment for girl students to catch up boys' level. And so, it can be seen that there was a difference for numerical reasoning between urban and rural students. So, the teachers should try to provide equal opportunities and practices to both urban and rural students.

The teachers should also be aware that various age levels have different numerical reasoning abilities. They also need to know that the younger students have better performance in numerical reasoning than the older students since the students in the same group were investigated in this research. Therefore, the teachers should pay careful attention to all students while they are teaching.

The students' level of numerical reasoning ability plays a major role in their attainment in mathematics. Therefore it is important that teachers take note of this, and more importantly mount intervention programmes that can help students develop their reasoning ability. This can be achieved by giving them cognitive tasks that are not necessary curriculum based. Examples of such tasks include finding missing numbers in an array of numbers (Adegoke, 2013). And so, some appropriate ways of study habit are also required in order to develop the students' numerical reasoning ability. Therefore, the teachers should ask the students to do homework and assignments that can improve their study habits.

To sum up, this study showed that if the students' numerical reasoning ability increases, their mathematics achievement will increase. In addition, numerical reasoning is considered to be one of the most basic skills needed today's data-driven educational field, and without strong numerical reasoning skills, it would be difficult to succeed in many activities today. So, it needs to study numerical reasoning ability of students who will become future builders of our country.

Acknowledgements

I would like to thank Dr. Saw Pyone Naing (Acting Rector, Sagaing University of Education), Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) and the members of M.Ed steering committee of Sagaing University of Education for their grateful permission and direction to submit this paper.

I would like to express my special thanks to Chairperson, Dr. KhinHnin Nwe (Professor and Head of Department of Educational Psychology, Sagaing University of Education) not only for her precise and expert guidelines and directions on this paper.

I also express my sincere thanks to Dr. Min Thant (Professor & Head, Department of English, Sagaing University of Education) for his effective comments and valuable editing towards this paper.

References

- Adegoke, B. A. (2013). Modeling the Relationship between Mathematical Reasoning Ability and Mathematics Attainment. Institute of Education, University of Ibadan. *Journal of Education and Practice*, ISSN 2222-1735 (Paper) ISSN 2222-288X (Online), Vol.4, Nov.17, 2013.
- Aye AyeMyint. (1997). *Investigation of the numerical reasoning ability of Myanmar high school students*. Bulletin of the Graduate School, Tokyo University. Press 37, 165-176.
- Choudhury, Dr. R and Das, D. K. (2012). Influence of Arithmetical Ability and Study Habit on the Achievement in Mathematics at Secondary Stage. *International Journal of Engineering and Science* ISSN:2278-4721, Vol. 1, 9(November 2012), PP 14-18. Retrieved from www.researchinventy.com.
- Emeke, E. A. & Adegoke, B. A. (2001). *The interaction effects of test response mode, students' numerical ability and gender on cognitive achievement in senior secondary school Physics*; in y. Awosika, *Topical Issues in Education: papers in honour of Professor C. O. Udoh*.
- Fatima, S. K. (2008). *Reasoning Ability of Adolescent Students*. Study conducted in Rangareddy District of Andhra Pradesh, India. ISBN – 8183563155, 9788183563154.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling (2nd ed.)*. New York: The Guilford Press.
- National Numeracy Framework for Wales. (2013). *Where are the numeracy skills covered in Abacus: Developing Numerical Reasoning Skills*. Department for Education and Skills. Welsh Government, Cathays Park, Cardiff .CF10 3NQ.
- Nu Nu Khaing. (2011). A Study on Developing a Spatial Ability Test for Myanmar Middle School Students: Nagoya University (*Psychology and Human Development Sciences*) 2011, Vol. 58, 13-24.
- Savill, O. (2011). What are numerical reasoning tests: the difference between numerical reasoning and numerical comprehension. Retrieved from www.assessment.co.uk
- Simon & Schuster (2000). *How Different Reasoning Skill Strengths Affect Your Life: Different Types of Reasoning Skills*.
- Toquam, J. L., Corpe, V. V. A and Dunnette, M, D (1991). Literature Review: Cognitive Ability-Theory, History, and Validity. Personal Decisions Research Institute. United States Army: *Research Institute for the Behavioral and Social Sciences*. February-1991.
- Ursos, M. E. & Bauyot, M. (2006). Mathematical Modeling of Numerical Ability Test and Achievement Test in College Algebra as Basis for the Construction of Module for Bridging Program. In C. Crawford, *Proceedings of Society for Information Technology and Teacher Education International Conference 2006* (pp. 3685-3686), Chesapeake, VA: AACE.

PERCEPTUAL REASONING ABILITY AND PROBLEM SOLVING SKILL OF MIDDLE SCHOOL STUDENTS IN SHWEBO TOWNSHIP

Soe Paing Htoo¹, KhinThuzaSaw²

Abstract

The aim of this study is to investigate the perceptual reasoning ability of middle school students in Shwebo Township, Sagaing Region. Perceptual reasoning ability was investigated to find out whether there were significant differences by gender, by locality and by age. Moreover, the relationship between the students' perceptual reasoning ability and their problem solving skill was also investigated. A total of 636 Grade 9 students (320 males and 316 females) from Shwebo Township in Sagaing Region participated in this study. The quantitative research design and the descriptive survey method were used. As research instruments; perceptual reasoning ability test: PRAT (30 items) and problem solving skill questionnaire (20 items) was developed to measure students' perceptual reasoning ability and problem solving skill. PRAT was adapted from Wechsler Adult Intelligence Scale – IV (WAIS – IV) which included four categories namely block design, visual puzzles, matrix reasoning and picture completion. In analyzing the data, descriptive statistics, independent sample *t*-test, one way ANOVA, and correlation technique were used. According to the result of findings, the level of perceptual reasoning ability of middle school students was satisfactory. Moreover, based on the results, students' perceptual reasoning ability was found to be significantly and positively correlated with their problem solving skill ($r=.163$, $p<.01$). In sum up, research findings indicated that students' perceptual reasoning ability should be enhanced by using various ways and it also played a vital role in their future success.

Keyterms: Perceptual reasoning, Perceptual reasoning ability, Perceptual reasoning ability test

Introduction

The function of education is to bring changes in child's behavior and personality in a more desirable form. Development of child's body and mind demand proper nurturing of physical and intellectual qualities. The children need to question to investigate and to think independently. A significant number of children fail to perform adequately in academics without any apparent limitation. In a considerable number of these incidences, there is a discrepancy between the children's potential and their actual performance. One of the paramount justifications offered for such poor academic performance disorders in one or more of the basic psychological processes (Fuchs and Fuchs, 2002). Defects in psychological process which includes cognitive abilities in perception, language, memory, attention, concept formation, problem solving, and the like act as intrinsic limitations or deficiencies interfere the child's learning (Parkash, 1999).

Perception is the cognitive process that identifies, organizes, and translates sensory data into meaningful information. Perceptual processes include discrimination, coordination and sequencing (Rourke, 2005). There are children who may experience difficulties in any of these areas of perceptual processing. The children with these perceptual disorders will find it very difficult to copy letters correctly or to perceive the difference of sound and to solve various problems and to discriminate space and length. These children cannot also interpret sensations and reasoning in a normal manner (Dhingra, Manhas&Kohi, 2010).

Perceptual reasoning skills play as a part in student's life-long learning. Activities such as organizing and classifying objects, drawing inferences and problem solving use perceptual reasoning skills. Most nonverbal skills fall into perceptual reasoning from building with blocks to problem solving tasks. Perceptual reasoning skills are the skills a person uses to learn and store new information from the environment as opposed to recalling and using information at a later

¹ Tutor, Department of Educational Psychology, Sagaing University of Education

² Dr, Retired Principal, Thingangyun Education College

date. One of the most important aspects of perceptual reasoning is the ability to recognize and organize visual stimuli.

Some researches pointed out that the older children perform better on perceptual reasoning more often than younger children. Perceptual reasoning ability can facilitate and stimulate human problem-solving solving process Rogers and Arkin (2011). Children with low perceptual reasoning skills will exhibit problems with activities involving vision and the processing of visual stimuli. For instance, a child with low perceptual reasoning may have difficulty in learning and recognizing right from left or may reverse letter or numbers when writing (Dowell & Mahone, 2014).

Purpose of the study

The main aim of the study is to investigate perceptual reasoning ability of middle school students in Shwebo Township.

Review of Related Literature

The Role of Perceptual Reasoning in Education

One classical approach to understanding the levels of reasoning ability is based on the research of Barbel Inhelder and Jean Piaget, whose work helps to demonstrate how the cognitive abilities of children scaffold. Inhelder and Piaget view intellectual development as a series of stages one must pass through in a specified order and are characterized by the ability to complete particular tasks (Inhelder & Piaget, 1958; Piaget, 2008).

Piaget (1964) considers the ability to order or classify a group of objects an indicator of a child's level of concrete reasoning ability; according to him, the nature of one's ability to reason is one that builds, and a child needs the skills of a previous level of reasoning in order to accomplish tasks characteristic of the following level. Piaget divides reasoning ability into two main groups— concrete reasoning ability and formal reasoning ability— with the former characterized by a child's ability to reason with things, or actual objects, whereas the latter requires thinking a problem through, or hypothesizing, without seeing what physically happens first.

Despite the fact that these concepts were first investigated decades ago, Piaget's ideas are still being utilized, primarily in order to explain and understand the cognitive abilities of both children and adults. A significant portion of Piaget's research is concerned with children and their proportional reasoning abilities at different level of cognitive development. On the other hand, students' reasoning abilities become also an important room in their education. Reasoning ability can also make the best support for the student's various achievements.

Perceptual reasoning, as one part of intelligence, can also light the students to the right way of the educational success. Actually, people always carefully check the signs on the student's report card and they didn't notice the student's intelligence and abilities from out of the paper. Perceptual reasoning is one of these abilities and an important part of child's educational life. Parents need to help their children to develop perceptual reasoning ability that can add children many benefits in the whole life. (cited in S. Kager, 2008)

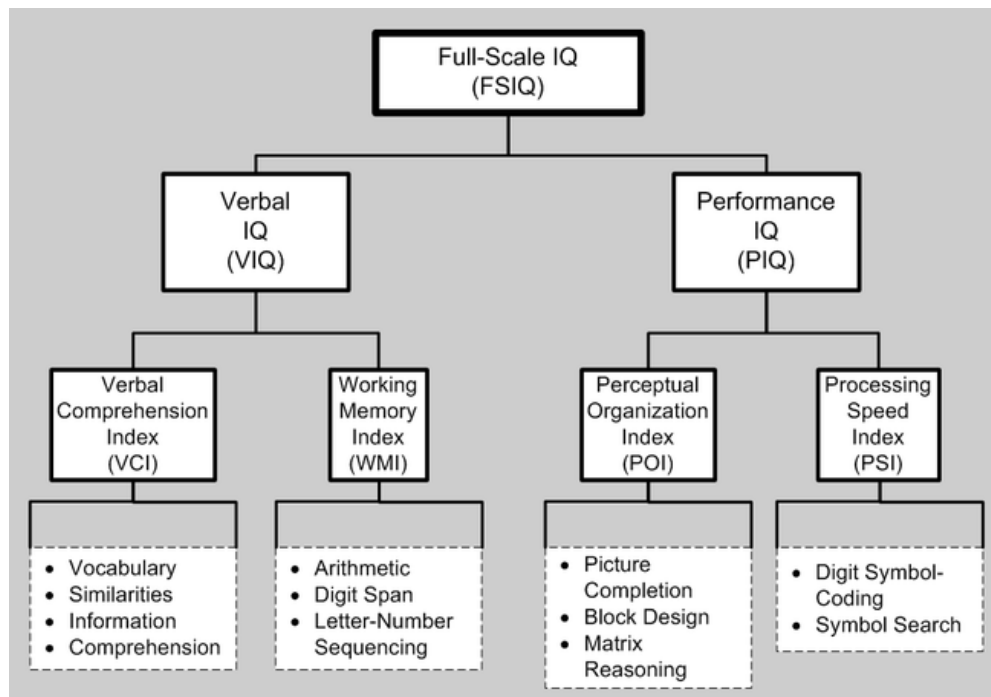
Theoretical Background of Perceptual Reasoning Ability Test

Perceptual reasoning ability test is a power test that measures an individual's ability to reason and find relationships between non – verbal stimuli. It is a good indicator of general intelligence and problem solving skills. The following is the evolution of perceptual reasoning ability test.

Wechsler Adult Intelligence Scale

The Wechsler Adult Intelligence Scale (WAIS) is a test designed to measure intelligence in adults and older adolescents. It is currently in its fourth edition (WAIS-IV). The original WAIS (Form I) was published in February 1955 by David Wechsler, as a revision of the Wechsler-Bellevue Intelligence Scale that had been released in 1939.

The WAIS-R, a revised form of the WAIS, was released in 1981 and consisted of six verbal and five performance subtests. This revised edition did not provide new validity data, but used the data from the original WAIS; however new norms were provided, carefully stratified. The WAIS-III, a subsequent revision of the WAIS and the WAIS-R, was released in 1997. It provided scores for Verbal IQ, Performance IQ, and Full Scale IQ, along with four secondary indices (Verbal Comprehension, Working Memory, Perceptual Organization, and Processing Speed).



The WAIS-IV was standardized on a sample of 2,200 people in the United States ranging in age from 16 to 90. An extension of the standardization has been conducted with 688 Canadians in the same age range. In this study, perceptual reasoning ability test (PRAT) was made based on above theory.

Problem Solving Skills and Perceptual Reasoning Ability

Many forms of reasoning typically depend on conditions of uncertainty, including problem solving, causal reasoning, and analogical inference. We can't leave from the side of problem solving skill when we wish to investigate people's intelligence. They are interrelated. So, many dimensions of intelligence contain problem solving skills and their effects. Hence, perceptual reasoning ability is correlated, to some extent, with problem solving skill. In this study, problem solving skill is concerned as one part of perceptual reasoning ability.

Friedman (2013) stated that reasoning ability is a critical element of problem solving. Perceptual reasoning measures an individual's ability to reason and find relationships between non-verbal stimuli. It is a good indicator of general intelligence and problem solving skills.

Sampling

By using simple random sampling technique, the schools and students were selected from Shwebo Township, Sagaing Region. Total seven schools were investigated; five high schools, one high school (branch) and one middle school respectively. For stratification level, three urban (B.E.H.S-1, 2, 3/Shwebo) and four rural schools in the township were chosen. There were 313 (49.21%) students in urban area and 323 (50.79%) students in rural area. A total of 636 students participated in this study. The sample of Grade 9 students includes 320 (50.31%) males and 316 (49.69%) females. All the participants of this study were examined by age levels such as 13, 14 and 15 years. The number of students participated in the test administration by schools are mentioned in the following Table.

Table Number of Students from Selected Schools in Shwebo Township

Name of Selected Schools	Number of Students						
	Male			Female			Total
	13 Years	14 Years	15 Years	13 Years	14 Years	15 Years	
B.E.H.S -1,Shwebo	22	19	5	33	22	9	110
B.E.H.S -2,Shwebo	25	17	2	33	20	3	100
B.E.H.S -3,Shwebo	21	33	3	22	21	3	103
B.E.H.S, KyaukMyaung	26	18	6	23	21	6	100
B.E.H.S, Nyaung Pin Thar	12	22	11	13	17	15	90
B.E.H.S(branch), Payan	14	18	9	14	17	2	74
B.E.M.S, Taohom	10	21	6	4	10	8	59
Total	130	148	42	142	128	46	636

Methodology

The quantitative research design and the descriptive survey method were taken in the present study. The perceptual reasoning ability test was employed to collect data and to identify the perceptual reasoning ability of the students.

Constructing the Test for Pilot Study

In this study, perceptual reasoning ability test was developed to measure students' perceptual reasoning ability by the researcher using many internet sources, books, education journals, theses and dissertations. This test was composed of four subtests: block design, visual puzzles, matrix reasoning and picture completion. All are adapted from perceptual reasoning index of Wechsler Adult Intelligence Scale – IV (WAIS – IV) and Wechsler Intelligence Scale for Children (WISC). On the other hand, for problem solving skill questionnaire, scale questions were adapted from TolgaGok's validated problem solving skill questionnaire.

In this test, an item pool of 80 was written with reference to Measuring Multiple Intelligence Batteries such as WAIS and WISC-R. To find out the test's limitations such as ambiguity of meaning and conformity with students' level, the editorial review of items by experts in the field of educational psychology from Yangon University of Education and Sagaing University of Education and test taker's review by ten Grade 9 students were done. Based on these reviews, all items were selected and utilized for the pilot testing data after repairing defected items.

The test of 80 items was administered to 104 Grade 9 students on pilot testing during the last week of November in 2013. After that, item analysis, editing and selection procedures were performed by using the pilot testing data. At this stage, p-value (difficulty index in CTT) and point-biserial correlation (the discrimination index) for each item were calculated by using BILOT-MG software. The p-value is the proportion of examinees who answer the item correctly and its value may range from 0 to +1. The point-biserial correlation reflects item test correlation when a discrete binary variable is correlated with a continuous variable and its value may range from -1 through 0 to +1. Statistically, the item analysis data can be seen in the following table. In this table, the value of p-value will be regarded as okay when the value is 0.20 or greater and the value of point-biserial correlation will be accepted when the value is 0.30 or greater according to Oosterhof (1990).

0.20 > p-value > 0.95

0.30 < point-biserial correlation

The Value of P-Value and Point-biserial Correlation of Selected 30 Items

No.	P-Value	Discrimination Index	No.	P-Value	Discrimination Index
Item 1	0.572	0.396	Item 16	0.734	0.542
Item 2	0.470	0.612	Item 17	0.577	0.483
Item 3	0.791	0.304	Item 18	0.492	0.318
Item 4	0.615	0.329	Item 19	0.508	0.343
Item 5	0.363	0.433	Item 20	0.698	0.540
Item 6	0.664	0.450	Item 21	0.476	0.377
Item 7	0.783	0.412	Item 22	0.777	0.529
Item 8	0.453	0.546	Item 23	0.678	0.499
Item 9	0.695	0.477	Item 24	0.303	0.344
Item 10	0.925	0.412	Item 25	0.667	0.453
Item 11	0.802	0.535	Item 26	0.290	0.484
Item 12	0.443	0.332	Item 27	0.418	0.535
Item 13	0.322	0.317	Item 28	0.439	0.361
Item 14	0.608	0.402	Item 29	0.585	0.353
Item 15	0.447	0.416	Item 30	0.671	0.313

The validated test of 30 items consists of 9 block design, 6 visual puzzles, 8 matrix reasoning problems and 7 picture completion questions.

Data Analysis and Findings

Perceptual Reasoning Ability of Middle School Students

Perceptual reasoning ability of middle school students was measured by the test which consists of four categories: block design, visual puzzles, matrix reasoning and picture completion. Students' perceptual reasoning scores were presented by means of descriptive statistics and frequency distribution (see Table 1).

Table 1 Descriptive Statistics for Perceptual Reasoning Ability

Categories	N	Minimum	Maximum	Mean	Mean Percent	Std. Deviation
Block Design	636	0	9	5.41	60.11%	2.16
Visual Puzzles	636	0	6	3.55	59.17%	1.19
Matrix Reasoning	636	0	8	4.94	61.75%	1.91
Picture Completion	636	0	7	3.37	48.14%	1.71
Perceptual Reasoning Ability (Total)	636	2	30	17.27	57.57%	5.48

Table 1 presents mean and standard deviation, the maximum and minimum scores of perceptual reasoning ability for the whole sample with four categories. According to the result, the mean and standard deviation for the whole sample were 17.27 and 5.48, the maximum and minimum scores were 2 and 30. The mean percentages for block design, visual puzzles, matrix reasoning and picture completion were 60.11%, 59.17%, 61.75% and 48.14% respectively. Thus, the result described that students had more good scores in matrix reasoning of perceptual reasoning ability and low scores in picture completion category.

According to the descriptive statistics, the range of raw scores of perceptual reasoning ability was from 2 to 30, mean and standard deviation of the whole test were 17.27 and 5.84, respectively. According to the results, perceptual reasoning ability of middle school students in Shwebo Township could be accepted as satisfactory result.

Comparison of Perceptual Reasoning Ability by Gender

Regarding gender effect, a mean comparison of perceptual reasoning ability scores of male and female was conducted. It was found that the mean score of perceptual reasoning ability of male students was 17.60 and that of female students was 16.94. Table 2 shows that the mean scores of perceptual reasoning ability for male students exceed 0.66 than that of female students. It seems that perceptual reasoning ability of male students was higher than that of female students, but when it was measured by *t*-test, there was no significant difference between them. (see Table 2)

Table 2 Descriptive Statistics for Perceptual Reasoning Ability by Gender

Variable	Gender	N	Mean	Standard Deviation	Mean Difference
Perceptual Reasoning	Male	320	17.60	5.90	0.66
	Female	316	16.94	5.01	

To examine whether these differences were significant or not, the independent sample *t*-test was conducted. The results of *t*-test were described in Table 3.

Table 3 The Result of *t*-test for Perceptual Reasoning Ability by Gender

Variable	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Perceptual Reasoning Ability	Male	320	1.514	634	0.131	0.66
	Female	316				

According to Table 3, the result of *t*-test indicated that there was no significant difference between male and female students in the perceptual reasoning ability but male students were slightly higher than female students in the perceptual reasoning ability. Therefore, the results of *t*-test confirmed the assumption that there was no significant difference between male and female students in perceptual reasoning ability ($t = 1.514$).

Comparison of Perceptual Reasoning Ability by Locality

To examine the locality effect, a mean comparison of ability scores of rural and urban school students was conducted. In this part, there were 313 students from three high schools in Shwebo city for urban area and 323 students from two high schools, one high branch school and one middle school in Shwebo Township for rural area. It was found that the mean scores of perceptual reasoning ability of urban school students were higher than those of rural school students. And so, by conducting *t*-test analysis, it was found that there was significant difference between them. The results were mentioned in table 4 and table 5.

Table 4 Descriptive Statistics for Perceptual Reasoning Ability by Locality

Variable	Locality	N	Mean	Standard Deviation	Mean Difference
Perceptual Reasoning Ability	Urban	313	18.62	5.29	2.65
	Rural	323	15.97	5.36	

According to the results of Table 4, it was found that the mean scores of perceptual reasoning between rural and urban schools students were 18.62 and 15.97 and their standard deviations were 5.29 and 5.36, respectively. And then, the mean scores of perceptual reasoning of students in urban school exceed 2.65 than that of students in rural schools in this study. Therefore, to investigate the locality differences of perceptual reasoning between rural and urban school students, the independent sample *t*-test was analyzed. The results of *t*-test were mentioned in Table 5.

Table 5 The Result of *t*-test for Perceptual Reasoning Ability by Locality

Variable	Locality	N	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Perceptual Reasoning Ability	Urban	313	6.278	634	0.000*	2.65
	Rural	323				

* The mean difference is significant at the 0.05 level.

Table 5 indicated that students in urban schools were significantly different in perceptual reasoning ability from students in rural schools at 0.05 level. Analysis of two group means indicated that the mean score for perceptual reasoning ability of students in urban school was significantly higher than the mean score for perceptual reasoning ability of students in rural schools with mean difference of 2.65 points. Therefore, the result of *t*-test concluded that there was significant difference between rural and urban school students in their perceptual reasoning ability ($t=6.278$).

Comparison of Perceptual Reasoning Ability by Age

To investigate the age effect, students were categorized into three groups by their ages; 13-year group, 14-year group and 15-year group. The students who were between 13 years old and 13 years and six months old were regarded as 13 years age group (13yr). The students who were above 13 years and six months old and below 14 years and six months old were identified as 14 years age group (14yr) and above 14 years and six months old were identified as 15 years

age group (15yr). To compare the ability scores of the three age groups, ANOVA analysis was conducted.

Table 6 Means and Standard Deviations for Perceptual Reasoning by Age

Variable	Age	N	Mean	Standard Deviation
Perceptual Reasoning	13yr	278	18.19	5.51
	14yr	270	17.00	5.42
	15yr	88	15.17	4.94

According to Table 6, the mean score of perceptual reasoning of students in 13 years was 18.19 and those of 14 and 15 years were 17.00 and 15.17, respectively. Students in 13 years had higher perceptual reasoning than that of students in 14 years, and also students in 14 years was higher than 15. Therefore, the students in 13 years had higher perceptual reasoning than that of others (14 years, 15 years).

Moreover, to find out whether there was significant difference in perceptual reasoning by their age, a one-way ANOVA was conducted. ANOVA result was mentioned in Table 7.

Table 7 ANOVA Results of Perceptual Reasoning Ability by Age

	Sum of Squares	df	Mean Square	F	p
Between Groups	644.53	2	332.27	11.06	0.000*
Within Groups	18440.95	633	29.13		
Total	19085.48	635			

* The mean difference is significant at the 0.05 level.

As shown in Table 7, there were significant differences by their age concerning the perceptual reasoning, ($F(2,633) = 11.06, p < 0.05$). It implied that perceptual reasoning of middle school students differed by their age. And then, to find out specifically mean comparison by their age, Post Hoc Test was again employed by Tukey method and the students' perceptual reasoning was interpreted by using multiple comparison method. The results of Post Hoc Test were presented in Table 8.

Table 8 The Results of Post Hoc Test for Perceptual Reasoning Ability by Age

(I) Age	(J) Age	Mean Difference (I-J)	p
13 yr	14 yr	1.191*	0.027
	15 yr	3.024*	0.000
14 yr	13 yr	-1.191*	0.027
	15 yr	1.833*	0.016
15 yr	13 yr	-3.024*	0.000
	14 yr	-1.833*	0.016

*The mean difference is significant at the 0.05 level.

According to the results, the 13 years old students were higher in perceptual reasoning ability scores than the 14 years old students with a mean difference of 1.191 points, and than the 15 years old students with a mean difference of 3.024 points. And so, perceptual reasoning ability scores of 14 years old students were higher than that of 15 years old students with a mean difference of 1.833 points. For this result, there were significant differences in perceptual reasoning ability among their age levels. Therefore, perceptual reasoning ability of 13 years old

students had the highest and the 15 years old students had lowest in this study. So, it can be concluded that the younger students have better performance in perceptual reasoning ability than that of the older students in the same level.

Perceptual Reasoning Ability and Problem Solving Skill

Descriptive Statistics of Problem Solving Skill

In this study, in order to find out the relationship between perceptual reasoning ability and problem solving skill, students' problem solving skill was examined by the validated problem solving skill questionnaire. The descriptive statistics of students' problem solving skill can be seen in Table (9).

Table 9 Descriptive Statistics for Problem Solving Skill

	N	Minimum	Maximum	Mean	Std. Deviation
Problem Solving Skill	636	33	94	70.10	9.28

According to Table 9, maximum and minimum scores of students' problem solving skill were 94 and 33; with a mean score of 70.10 and the standard deviation was 9.28. The result revealed that the students had moderate level in problem solving skill. According to Jeotee (2012), the most important finding is reasoning ability and problem solving skill have some influences on each other approximately 30 percent. Moreover, Roger and Arkin (2011) revealed that there is a link between perceptual reasoning and problem solving skill.

The Relationship Between Perceptual Reasoning Ability and Problem Solving Skill

The Pearson Product-Moment Correlation Coefficient was used to find the correlation between perceptual reasoning ability and problem solving skill. The result of correlation analysis was mentioned in Table 10.

Table 10 The Relationship between Perceptual Reasoning Ability and Problem Solving Skill

	Perceptual Reasoning Ability	Problem Solving Skill
Perceptual Reasoning Ability	1	.163**
Problem Solving Skill	.163**	1

** Correlation is significant at the 0.01 level (2-tailed).

According to Table 10, the result accepted the hypothesis that there was significant relationship between perceptual reasoning ability scores and problem solving skill of the students ($r=0.163$, $p<.01$). This means that the higher the students' perceptual reasoning ability, the higher their problem solving skill. But, the strength of correlation was slightly low.

Therefore, it can be interpreted that increase in perceptual reasoning ability indicates that increase in problem solving skill.

Further Research, Suggestions and Conclusion

No research study is completely perfect as every study has some limitations. In this present study, some limitations could be found. One limitation of this study is sampling data for participants. For selecting participants, random sampling method was used and it was limited by sample size. It also focused only on the selected students in one township (Shwebo Township, Sagaing Region). To be more organized data, further researches should use larger sample from

more townships. Moreover, the populations of two groups are already so different to compare the differences between the students from urban schools and students from rural schools. And so, this study included Grade 9 students only from seven schools in Shwebo Township who are ages of thirteen to fifteen. Therefore, the results of this study may not generalize to other populations.

Other problem concerning sampling is that the data of this study is cross-sectional and not longitudinal. In order to get more validated statistics, further researches are necessary to conduct longitudinal study. Moreover, the current study performed analyses for differences in perceptual reasoning ability across only gender, age and locality factors. Thus, a further research is also necessary to investigate other individual differences (e.g., economic status, family background, environmental influences and parental involvement, etc).

And so, perceptual reasoning ability is only one part of intelligence. Therefore, if there are good opportunities; sufficient time zone, financial backgrounds and enough effort, further researches are necessary to investigate other parts of intelligence: verbal comprehension, working memory and processing speed alongside with perceptual reasoning using numerous variables.

In addition, the perceptual reasoning ability test was constructed based on only WAIS-IV including block design, visual puzzles, matrix reasoning and picture completion in order to measure the students' perceptual reasoning ability. And so, this test contained only 30 items for the present study and the item allocations for each category are not equal. Therefore, further researches are necessary to construct the test with the equal items rate for each category in order to get rid of item affects. Moreover, since the present study focus on only the relationship between students' perceptual reasoning ability and problem solving skill, further researches should be conducted to investigate the relationship between students' perceptual reasoning ability and other various factors (e.g, various academic achievement).

Perceptual reasoning ability also plays an important role in students' future success. Therefore, there are so many researches about perceptual reasoning ability that need to be conducted in Myanmar. So, many researches should investigate other variables and contents about perceptual reasoning ability. It is also needed to conduct more studies concerning the exploration of ways and means to improve perceptual reasoning.

The main purpose of this study was to investigate the perceptual reasoning ability of middle school students in Shwebo Township. The results of this study highlighted the facts that (1) perceptual reasoning ability between males and females were not significant difference but mean score of perceptual reasoning ability of male students were slightly higher than that of female students, so gender effect on perceptual reasoning ability was really weak, (2) age and locality affect distinctly perceptual reasoning ability development, and (3) perceptual reasoning ability and problem solving skill had positive significant relationship. It is expected that the results of this study can provide some knowledge and information to know about perceptual reasoning ability related to gender, locality and age factors.

Acknowledgements

At first, I would like to pay my gratitude to Dr. Saw PyoneNaing (Acting Rector, Sagaing University of Education), Dr. MyatMyat Thaw (Pro-rector, Sagaing University of Education) and the members of M.Ed steering committee of Sagaing University of Education for their engouragement and support to submit this paper.

I would like to express my deepest sense of special thanks to Chairperson Dr. Khin Hnin New (Professor and Head of Department of Educational Psychology, Sagaing University of Education) for her strong her perfect guidelines and precise suggestions.

I am sincerely grateful to Dr. Min Thant (Professor & Head, Department of English, Sagaing University of Education) for his invaluable critics and editions on this paper.

References

- Dhingra,R, Manhas .S &Kohli, N. (2010).*Relationship of Perceptual Abilities with Academic Performance of Children*, University of Jammu, Jammu 180006, India.
- Dowell, L .R. &Mahone, E. M. (2014). *What is Perceptual Reasoning?* Retrieved from www.springerreference.com/ www.school-psychology.com.au/ www.visionandlearning.org.
- Fuchs , L.S., & Fuchs, D. (2002). Mathematical problem-solving profiles of students with mathematics disabilities with and without comorbid Reading disabilities. *Journal of Learning Disabilities*, 35(6): 564-574.
- Friedman,E. (2013). The Importance of Numerical reasoning. By eSkill Cooperation in the United States and other countries.
- Jeotee, K. (2012). Reasoning Skills, Problem Solving Ability and Academic ability: Implications for Study Programme and Career Choice in the Context of Higher Education in Thailand, Doctoral Thesis, Durham University.
- Oosterhof, A. (1990). *Classroom Applications of Educational Measurements*. Merrill, Columbus, OH.
- Parkash,P. (1999). Reading Disabilities and Knowledge of Orthographic principles. *Psychological Studies*, 44(3): 59-64.
- Piaget (1964, cited in S. Kager 2008).Intellectual evolution from adolescence to adulthood. *Human Development*, 51(1), 40-47.
- Rogers, E., &Arkin ,R .C. (2011). *Visual Interaction: A Link Between Perception and Problem Solving*, Emory University. pp.1245-1257.
- Rourke ,B .P. (2005). Neuropsychology of learning disabilities: Past and Future. *Learning Disabilities Quarterly*, 28: 111-114.

A STUDY ON VISUAL PERCEPTUAL SKILL AND MATHEMATICS ACHIEVEMENT OF GRADE 6 STUDENTS IN NGAZUN TOWNSHIP

Khin Swe Latt¹, Tin Maung Win²

Abstract

The main aim of this study is to investigate the visual perceptual skill that affects on mathematics achievement of Grade 6 students in Ngazun Township, Mandalay Region. The quantitative research design and the descriptive survey method were taken in the present study. The total of 650 (male=309, female=341) Grade 6 students were selected as participants from three high schools, three high schools (branch), two middle schools, and two middle schools (branch) by using simple random sampling technique. As research instruments, visual perceptual skill test with 20 items and mathematics achievement test with 30 items were adapted and applied. The visual perceptual skill test included five subtests: visual discrimination, visual spatial-relationships, position-in-space, visual figure-ground, and visual analysis and synthesis. The p-value and point-biserial correlation of the items in both tests were analyzed by using Bilog-MG Software. The internal consistency (Cronbach's alpha) of the visual perceptual skill test was 0.745 and that of mathematics achievement test was 0.895. Students' visual perceptual skill and mathematics achievement were investigated to find out whether there were significant differences by gender, locality, and school type. In addition, the effect of visual perceptual skill on mathematics achievement was explored. The results indicated that male students had higher visual perceptual skill than female students. But, significant difference was not found in mathematics achievement by gender. According to locality effect, urban students possessed better visual perceptual skill and mathematics achievement than rural students. In this study, Grade 6 students in High Schools had the highest visual perceptual skill and mathematics achievement in the comparison of four school types. Besides, visual perceptual skill subtests can significantly predict mathematics achievement in accordance with the result of regression analysis. According to these research findings, this study highlights the fact that visual perceptual skill plays as an important part in the improvement of students' mathematics achievement.

Keywords: visual perceptual skill, visual discrimination, visual spatial-relationships, position-in-space, visual figure-ground, visual analysis and synthesis, mathematics achievement

Introduction

Education is a systematic process through which a child or an adult acquires knowledge, experience, skill and sound attitude. It makes an individual civilized, cultured and educated. For a civilized and socialized society, education is the only means and its goal is to make an individual perfect. In the present educational system, more and more importance is given to the achievement of students in their academic and related activities. Mathematics is becoming important in our increasingly technological world. Mathematics is the branch of science concerned with number, quantity, and space, as abstract concepts.

In mathematics, visual perceptual aspects provide meaning to data (Dednam, 2005). Assessments of mathematics tend to focus on the process of visual perception, which are linked to particular developing mathematical skills (Korkman et al., 2007; cited in Clutten, 2009). According to Giaquinto's (2007) position, the role of visual perceptual skill in geometry is obvious, due to its spatial nature. Visual perceptual experience creates category specifications that characterize the perceptual concepts of shapes. Geometric concepts of basic shapes are simply perfect exemplars of these perceptual concepts (cited in Freeguard, 2014).

Visual perception involves the active process of identifying, analyzing and interpreting visual information. Visual perceptual aspects are the functions and skills that facilitate discrimination, analysis and processing of visual information (Scheiman & Gallaway, 2006; cited in Clutten, 2009). For successful participation within the classroom, students must be able to use

¹ Tutor, Department of Educational Psychology, Sagaing University of Education

² Dr, Deputy Director General, Department of Basic Education

the visual perceptual skill to perceive, observe and make sense of visual stimuli: focusing on stimuli, scanning the environment for the big picture or detailed information, following stimuli to enable interpretation, and applying these components for problem-solving (Volk, Smit & Bester, 2011). Research by Volk et al., (2011) found that incorporating an integrated visual perception program into intervention that addresses practicing basic eye movements, visual perceptual skills and cognitive strategies will strengthen the students' visual perceptual skills as well as improve academic performance, particularly performance in mathematics and in students' confidence levels (cited in Armstrong, 2014). Therefore, it is essentially necessary to explore how visual perceptual skill facilitates in mathematics achievement of Grade 6 students in Ngazun Township.

Purpose of the Study

The main aim of the study is to investigate into visual perceptual skills and mathematics achievement of middle school students (Grade 6 students) in Ngazun Township. The specific objectives are as follows:

1. To explore how gender differences affect on visual perceptual skill and mathematics achievement of students,
2. To compare the visual perceptual skill and mathematics achievement of students by locality of schools,
3. To find out whether the visual perceptual skill and mathematics achievement of students differ by school type or not,
4. To investigate the relationship between visual perceptual skill and mathematics achievement, and
5. To predict the effect of visual perceptual skill on mathematics achievement if there is a significant relationship between visual perceptual skill and mathematics achievement.

Related Literature

Visual perception is described as “a highly complex, integrative activity which involves the understanding of what is seen” (Koppitz, 1970) and can be thought of as a hierarchy of skill levels that when integrated together allow visual information to be processed (Warren, 1993). Visual perception forms part of a broad group of visual perceptual and cognitive aspects which facilitates the processing of visual information (Borsting, 2006). Visual perception involves the integration of higher cognitive functions, sensory information and previous experiences to organize, understand and experience visual input from our environment (Scheiman, 1997, cited in Armstrong, 2014). Good visual perceptual skills are important for many everyday skills such as reading, writing, completing puzzles, cutting, drawing, completing math problems, dressing and many other skills. Without the ability to complete these everyday tasks, a child's self-esteem can suffer and their academic performance is compromised. (Internet Source: E)

Influence of Visual Perception on Mathematics - Children having difficulty with the mechanics of mathematics (dyscalculia) are slow to grasp the relative size of figures, to learn tables, to remember the sequencing of digits, and to understand the meaning of mathematical signs or master fractions (Green & Chee, 1997). To manage mathematics as an academic subject, children need to use visual imagery in order to display planning, problem solving, and organization, as well as have a good working memory (Green & Chee, 1997; Loikith, 1997). The practical function in mathematics was to express quantitative and spatial relationships and the theoretical function in mathematics was to facilitate thinking. In addition, Lucas and Lowenberg (1996) separated mathematical concepts into two major aspects: (1) recognition and manipulation of numbers, and (2) acquisition and application of the language of mathematics, which in turn makes problem solving possible (cited in Richmond, 2010).

To carry out mathematical computations, children must have an understanding or grasp of basic perceptions of shape, space, symbols, copying and numeracy (Chinn, 2002; T. Miles, Chinn, & Peer, 2000; Schneck, 1996). Furthermore, the manipulation of numbers in mathematics also requires good visual perceptual skills such as visual discrimination, directionality, sequencing, organization of work (spatial), correct alignment of columns for calculation (placement of number values), figure ground and memory (Chinn, 2002). For example, many rows of calculations on a worksheet could be disorganizing for the child with figure-ground problems. Spatial perceptual skills are required in geometry and visual memory is required when multiple steps are required in a sum (Schneck, 1996). A number of authors agree that to solve mathematical problems, understand geometric relationships and use graphs, children require recognition skills, the ability to discriminate and the ability to compare objects, form and space (including inversions, rotations and distortions) (Chinn, 2002; Fisher et al., 1991; Hung, Fisher, & Cremak, 1987; Levine, 1991; Schneck, 1996, cited in Richmond, 2010).

Design and Procedure

Sampling - By using simple random sampling technique, the schools and students were selected from Ngazun Township, Mandalay Region. Total often schools were investigated; three high schools, three high schools (branch), two middle schools and two middle schools (branch), respectively. As participants, 650 Grade 6 students were involved: 177 from urban area and 473 from rural area. Among them, 309 students were males and 341 students were females.

Research Method - The quantitative research design and the descriptive survey method were taken in the present study.

Visual Perceptual Skill Test (VPST) - The visual perceptual skill test consisted of 20 items. It was composed of five subtests: visual discrimination, visual spatial-relationships, position-in-space, visual figure-ground and visual analysis and synthesis. All are modified from Visual Perception Test of Sylvia Catherine Clutten (2009). All items in the visual perceptual skill test were multiple choice forms with four alternative answers. Item analysis, editing and selection procedures were performed by using the pilot testing data. At this stage, p-value (difficulty index in CTT) and point-biserial correlation (the discrimination index) for each item were calculated by using BILOT-MG software. The internal consistency was 0.745 for the whole test.

Mathematics Achievement Test (MAT) - The researcher developed the mathematics achievement test based on Grade 6 Mathematics Textbook and this test consisted of 30 items. Item analysis for MAT was done by using BILOG-MG software. To confirm the reliability of this test, the internal consistency (Cronbach's alpha) was computed and it was 0.895.

Data Collection - Before the test administration, the researcher explained the purposes of the study to the participants thoroughly and instructed them how to answer the test and requested to answer all of the items in the test. In the test administration time, participants were asked to sit orderly in their classroom like formal monthly tests with the help of the classroom teachers. The total time duration was one hour for both the visual perceptual skill test and the mathematics achievement test. For the visual perceptual skill test, the limited time duration was 15 minutes and for administrating the mathematics achievement test, the time allocation was restricted as 45 minutes.

Data Analysis and Findings

Visual Perceptual Skill of Grade 6 Students – Based on the descriptive statistics shown in Table (1), the mean and standard deviation for the whole test were 11.39 and 2.552; the minimum and maximum scores were 4 and 20. The mean scores for visual discrimination, visual spatial-relationships, position-in-space, visual figure-ground and visual analysis and synthesis

subtests were 1.42, 2.28, 2.96, 2.31 and 2.42, respectively. the mean percent of the students on the whole test was 56.97%. The results also showed that their highest percentage was in visual spatial-relationships (76.05%) and their lowest percentage was in visual figure-ground (38.49%). It was satisfactory with students' visual perceptual skill since the students' mean percent on the whole visual perceptual skill test was 56.97%.

Table 1 Descriptive Statistics of Students' Visual Perceptual Skill

Variable	No. of Items	Minimum	Maximum	Mean	Mean (%)	Std. Deviation
Visual Discrimination	2	0	2	1.42	71.15%	0.646
Visual Spatial-Relationships	3	0	3	2.28	76.05%	0.817
Position-in-Space	4	0	4	2.96	74.12%	0.963
Visual Figure-Ground	6	0	6	2.31	38.49%	1.190
Visual Analysis and Synthesis	5	0	5	2.42	48.31%	1.140
Visual Perceptual Skill (Total)	20	4	20	11.39	56.97%	2.552

Mathematics Achievement of Grade 6 Students - According to Table (2), the mean and standard deviation for the mathematics achievement test were 14.79 and 4.591, the minimum and maximum scores were 7 and 28. Moreover, the students' mean percent on the mathematics achievement test was 49.30%. Since nearly 50% of the students could answer the whole test, their performance was to be said as satisfactory.

Table 2 Descriptive Statistics of Students' Mathematics Achievement

Variable	No. of Items	Minimum	Maximum	Mean	Mean (%)	Std. Deviation
Mathematics Achievement	30	7	28	14.79	49.30%	4.591

Comparison of Visual Perceptual Skill by Gender – In Table (3), the results mentioned that there were significant differences between male and female students in the visual perceptual skill at 0.05 level. And male students were higher than female students in visual perceptual skill ($p=.009$).

Table 3 Results of Independent Sample *t*-test for Visual Perceptual Skill by Gender

Variable	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Visual Perceptual Skill	Male	309	2.638	648	.009*	0.53
	Female	341				

Note: *The mean difference is significant at 0.05 level.

Comparison of Mathematics Achievement by Gender – The results in Table (4) showed that there was no significant difference between male and female students in their mathematics achievement ($p=.110$).

Table 4 Results of Independent Sample *t*-test for Mathematics Achievement by Gender

Variable	Gender	N	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Mathematics Achievement	Male	309	-1.601	648	.110	-0.57
	Female	341				

Comparison of Visual Perceptual Skill by Locality – According to Table (5), analysis of two group means indicated that the mean score for visual perceptual skill of students in urban schools was significantly higher than that for visual perceptual skill of students in rural schools with the mean difference of 1.35 points ($p=.000$). According to the results of the independent sample *t*-test, it could be concluded that there was significant difference between urban and rural school students in their visual perceptual skill.

Table 5 Results of Independent Sample *t*-test for Visual Perceptual Skill by Locality

Variable	Locality	N	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Visual Perceptual Skill	Urban	177	6.189	648	0.000*	1.35
	Rural	473				

* The mean difference is significant at the 0.05 level.

Comparison of Mathematics Achievement by Locality - By the results of *t*-test shown in Table (6), mathematics achievement of urban students was significantly different from that of rural students ($p=.000$). So, it could be interpreted that urban students had more achievement in mathematics than rural students.

Table 6 Results of Independent Sample *t*-test for Mathematics Achievement by Locality

Variable	Locality	N	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Mathematics Achievement	Urban	177	8.858	648	0.000*	4.04
	Rural	473				

* The mean difference is significant at the 0.05 level.

Comparison of Visual Perceptual Skill by School Type – According to Table (7), the results from the ANOVA showed that there were significant differences by their school types concerning the visual perceptual skill, ($F=8.956$, $p<0.05$). This means that visual perceptual skill of Grade 6 students was differed by their school types.

Table 7 ANOVA Results of Visual Perceptual Skill by School Type

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Visual Perceptual Skill	Between Groups	168.711	3	56.237	8.956	0.000*
	Within Groups	4056.464	646	6.279		
	Total	4225.175	649			

* The mean difference is significant at the 0.05 level.

And then, to explore specifically mean comparisons by their school types, Post Hoc Test was again employed by Tukey HSD method and the students' visual perceptual skill was interpreted by using multiple comparison method (see in Table 8).

Table 8 Results of Post Hoc Test for Visual Perceptual Skill by School Type

(I)School	(J)School	Mean Difference (I-J)	<i>p</i>
BEMS (Branch)	BEMS	-0.790	0.233
	BEHS (Branch)	-0.815	0.160
	BEHS	-1.585*	0.000
BEMS	BEMS (Branch)	0.790	0.233
	BEHS (Branch)	-0.026	1.000
	BEHS	-0.796*	0.027
BEHS (Branch)	BEMS (Branch)	0.815	0.160
	BEMS	0.026	1.000
	BEHS	-0.770*	0.009
BEHS	BEMS (Branch)	1.585*	0.000
	BEMS	0.796*	0.027
	BEHS (Branch)	0.770*	0.009

* The mean difference is significant at the 0.05 level.

According to these results, it can be clearly seen that the students in BEHS were higher in visual perceptual skill mean scores than the BEMS (Branch) students with a mean difference of 1.585 points, than the BEMS students with a mean difference of 0.796 points and then, than the BEHS (Branch) students with a mean difference of 0.770 points. Then, visual perceptual skill of BEHS (Branch) students was higher than BEMS (Branch) students with a mean difference of 0.815 points and, than BEMS students with a mean difference of 0.026 points. Moreover, the students in BEMS were better in visual perceptual skill mean scores than the students in BEMS (Branch) with a mean difference of 0.790 points. According to these results, there were significant differences in visual perceptual skill among their school types. In addition, it was also found that visual perceptual skill of students in BEHS was the highest and that of students in BEMS (Branch) was the lowest in this research.

Comparison of Mathematics Achievement by School Type – In Table (9), the ANOVA results described that there were significant differences by their school types concerning mathematics achievement, ($F=22.592$, $p<0.05$). This means that the mathematics achievement of Grade 6 students was differed by their school types.

Table 9 ANOVA Results of Mathematics Achievement by School Type

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Mathematics Achievement	Between Groups	1299.005	3	433.002	22.592	0.000*
	Within Groups	12381.119	646	19.166		
	Total	13680.125	649			

* The mean difference is significant at the 0.05 level.

To find out specifically mean comparisons by their school types, Post Hoc Test was again employed by Games-Howell method and the students' mathematics achievement was interpreted by using multiple comparison method (see in Table 10).

Table 10 Results of Post Hoc Test for Mathematics Achievement by School Type

(I)School	(J)School	Mean Difference (I-J)	p
BEMS (Branch)	BEMS	-.928	.333
	BEHS (Branch)	-1.044	.187
	BEHS	-3.597*	.000
BEMS	BEMS (Branch)	.928	.333
	BEHS (Branch)	-.117	.993
	BEHS	-2.669*	.000
BEHS (Branch)	BEMS (Branch)	1.044	.187
	BEMS	.117	.993
	BEHS	-2.553*	.000
BEHS	BEMS (Branch)	3.597*	.000
	BEMS	2.669*	.000
	BEHS (Branch)	2.553*	.000

* The mean difference is significant at the 0.05 level.

According to Table (10), the students in BEHS were higher in mathematics achievement scores than the BEMS (Branch) students with a mean difference of 3.597 points, than the BEMS students with a mean difference of 2.669 points and then, than the BEHS (Branch) students with a mean difference of 2.553 points. Then, mathematics achievement of BEHS (Branch) students was higher than BEMS (Branch) students with a mean difference of 1.044 points and, than BEMS students with a mean difference of .117 points. Moreover, the students in BEMS have better mean scores in mathematics achievement than the BEMS (Branch) students with a mean difference of .928 points. According to these results, there were significant differences in mathematics achievement among their school types. As a conclusion, students in BEHS had the highest mathematics achievement and the students in BEMS (Branch) had the lowest in this research.

The Effect of Visual Perceptual Skill on Mathematics Achievement – In Table (11), the regression analysis was conducted in order to investigate how well the visual perceptual skill predicts mathematics achievement.

Table 11 Multiple Regression Analysis for Predicting Mathematics Achievement from Visual Analysis and Synthesis, Position-in-Space, Visual Spatial-Relationships, Visual Figure-Ground and Visual Discrimination

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std.Error	Beta		
(Constant)	3.598	.753		4.777	.000
Visual Analysis and Synthesis	.946	.139	.235	6.781	.000
Position-in-Space	1.287	.161	.270	7.985	.000
Visual Spatial-Relationships	1.187	.192	.211	6.194	.000
Visual Figure-Ground	.594	.132	.154	4.506	.000
Visual Discrimination	.710	.239	.100	2.973	.003

Table (11) showed the intercept, unstandardized regression coefficient (B), and standardized regression coefficient β for model. By applying the results of multiple regression analysis presented in Table 4.32, the resultant model for subtests of visual perceptual skill can be defined as follows:

$$\text{MA} = 3.598 + .946 \text{ VA/S} + 1.287 \text{ P-S} + 1.187 \text{ VS-R} + .594 \text{ VF-G} + .710 \text{ VD}$$

Note: MA= Mathematics Achievement, VA/S = Visual Analysis and Synthesis,

P-S = Position-in-Space, VS-R = Visual Spatial-Relationships,

VF-G = Visual Figure-Ground, VD = Visual Discrimination

According to the above findings, it was found that five subtests included in visual perceptual skill test could predict mathematics achievement significantly and statistically. So, visual analysis and synthesis (.946, $p < 0.001$), position-in-space (1.287, $p < 0.001$), visual spatial-relationships (1.187, $p < 0.001$), visual figure-ground (.594, $p < 0.001$) and visual discrimination (.710, $p < 0.01$) were the predictors of mathematics achievement. Moreover, if all of the visual perceptual skill subtests were over looked, position-in-space had the largest effect and visual figure-ground had the smallest effect on mathematics achievement. All of these relationships can be shown by the following figure.

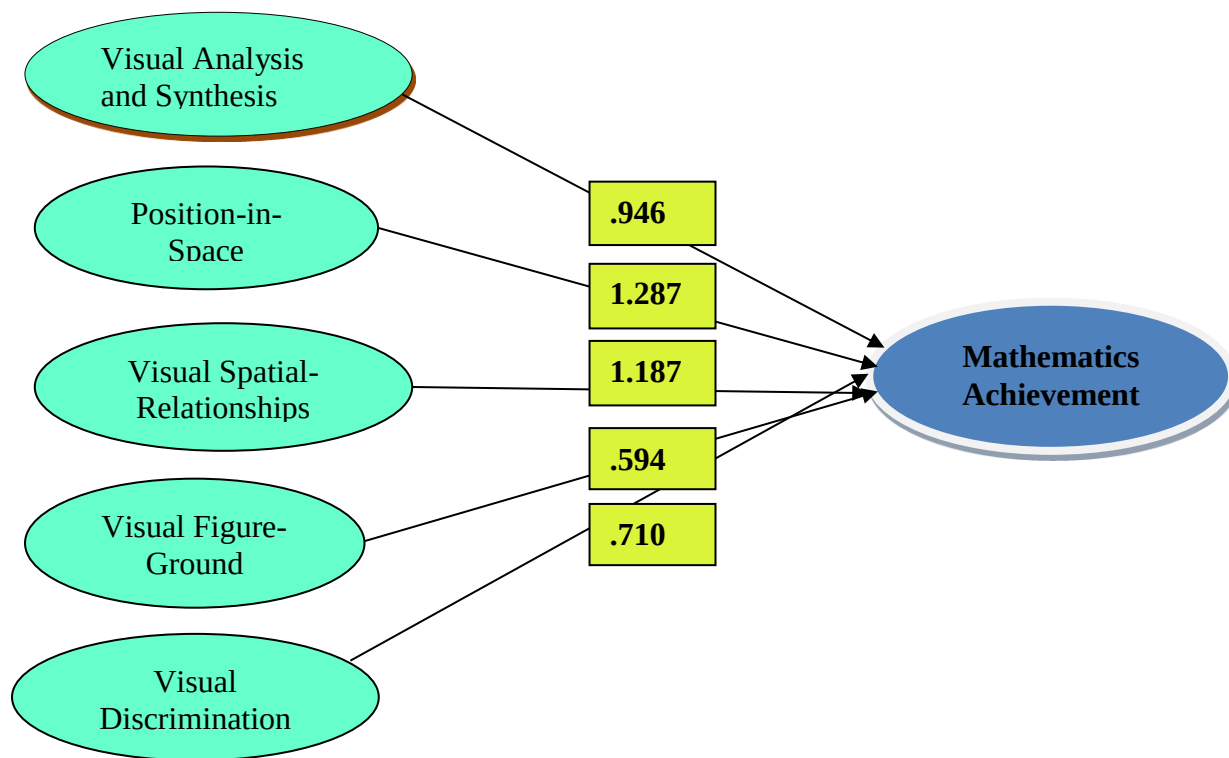


Figure 1 Model for Predicting Mathematics Achievement from Visual Perceptual Skill Subtests

Conclusion

Visual perception is not only a receptive, but also a constructive process which lays the foundation for many other higher level cognitive functions (Deiner, 2005; cited in Clutten, 2009). Visual perception is the ability to process and organize visual information from the environment. This requires the integration of all of the body's sensory experiences including sight, sound, touch, smell, balance, and movement. Most children are able to integrate these senses by the time they start school. This is important because approximately 75% of all classroom learning is

visual. It is an essential component of accessing the learning environment. Effective visual perceptual aspects play a critical role in early academic achievements as well as the later fluency and automaticity in the processing and analysis of visual information.

According to studies, the visual perceptual skill of students was significantly different by gender. Male students performed better in visual perceptual skill test than female ones. This may be due to the fact that male students had more interest in visual perceptual skill test than female students because the test used in this study was a figural test. However, significant difference in mathematics achievement was not found by gender in this research.

From the perspective of locality, urban students had better visual perceptual skill than rural students. It may be possible because of the fact that urban students are more familiar with puzzles, computer games and new technologies than rural students since visual perceptual skill can be improved by playing various games. Moreover, urban students were better in mathematics achievement than rural students. It may depend on the facts that urban students possess high socio-economic status and their parents' educational levels were generally higher than that of rural students' parents.

Moreover, there were significant differences in visual perceptual skill and mathematics achievement of students by their school type in this research. Students in BEHS had better visual perceptual skill and mathematics achievement than students in BEMS (Branch), BEMS and BEHS (Branch). Students in BEHS have adequate number of teachers to guide well, teach effectively and support them for creative thinking in solving mathematics problems. Students' visual perceptual skill and mathematics achievement may also be differed by the location and environment of the schools, favorable classroom atmosphere, supporting materials and motivation strategies on their learning.

Teachers play a vital role in observing how the children approach and accomplish visual tasks and activities within a classroom setting. Moreover, they should understand the visual perception problems of children and study about the ways to improve students' visual perceptual skill. They should use the following strategies to support children with visual perception problems. These strategies are:

- Have the child sit close to the chalkboard so it is easier to copy assignments
- Focus on teaching independent strategies
- Each section of information to be written in a different color on the white board
- Block out information on a work sheet or in a text book that is not needed
- Try to give auditory tasks as well as visual
- Use of prompt cards to explain what the child needs to do (can use pictorial prompts if needed)
- Copy of information from the board on a mini whiteboard next to where the child is working
- Photocopies of information from text books
- Shopping list approach to help child remember which vocabulary to use
- Visual timetable
- Mind mapping
- Reduce distractions
- Remind child to use the visual prompts available (Internet Source: C)

In this study, the five visual perceptual skill subtests had significant effect on mathematics achievement according to regression analysis. So, improvement of students' visual perceptual skill is very important for their mathematics achievement.

Acknowledgements

First and foremost, I would like to pay my sincere and respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) for giving me the permission to conduct this research study and write up of this paper. I would like to express my special gratitude to Dr. Khin Hnin Nwe (Professor and Head of Department, Department of Educational Psychology, Sagaing University of Education) for her invaluable guidance, critique and assistance with this paper. My gratitude inevitably leads to my supervisor, Dr. Tin Maung Win (Deputy Director General, Department of Basic Education). Besides, I am deeply thankful to the concerned principals, teachers and Grade 6 students from Ngazun Township, Mandalay Region, for their active cooperation and willing participation in the vital role of my data collection.

References

- Armstrong, L. (2014). *Concurrent Validity of The Paper and Electronic Version of The Motor Free Visual Perception Test 3rd Edition (MVPT-3) For School-Aged Children*. East Carolina University, United States. Retrieved on November 12, 2015, from http://thescholarship.ecu.edu/bitstream/handle/10342/4636/Armstrong_ecu_0600O_11330.pdf
- Clutten, S. C. (2009). *The Development of A Visual Perception Test For Learners In The Foundation Phase*. University of South Africa, Africa.
- Freeguard, L. S. (2014). *Relationship between Visual Perceptual Skill and Mathematics Achievement*. University of South Africa, Africa. Retrieved on October 3, 2015, from http://uir.unisa.ac.za/bitstream/handle/10500/14118/dissertation_freeguard_ls.pdf
- Internet Source (C): *Visual Perception; Advice for educational settings*, Retrieved on January 18, 2016, from <http://www.essexlocaloffer.org.uk/sites/default/files/Visual>
- Internet Source (E): *Visual Perception*, Retrieved on January 3, 2016, from <http://childdevelopment.com.au/visual-processing.pdf>
- Richmond, J. E. (2010). *School Aged Children: Visual Perception and Reversal Recognition of Letters and Numbers Separately and In Context*. Edith Cowan University, Australia

THE BEHAVIORAL AUTONOMY OF UPPER PRIMARY SCHOOL STUDENTS IN AUNGMYAYTHARZAN TOWNSHIP

Htet Htet Htun¹, U Tint Swe²

Abstract

The main purpose of this study is to study the behavioral autonomy of children. Upper primary school students were taken into account in this study. So, the participants in this study were 600 upper primary school students among four Basic Education High Schools located in Aungmyaytharzan Township. Descriptive survey method was used in this study; participants were 300 male students and 300 female students from Grade 4 and Grade 5. A questionnaire was used to collect demographic information of the participants such as gender, grade, sibling, parents' education and parents' occupation. The questionnaire was adapted from Manuela Fleming (2005) in this study. It was composed of 36 items and included three components: decision-making abilities, self-reliance and parental influence. The results of the study also reveal that there was no significant difference in decision-making abilities of children with respect to their gender, parents' education and parents' occupation. But, there existed significant difference in decision-making abilities of children with respect to their grade and sibling. There was no significant difference in self-reliance of children with respect to their parents' education and occupation. But, there existed significant difference in self-reliance of children with respect to their gender, grade and sibling. There was no significant difference in parental influence on children with respect to their gender, grade, sibling and mother's occupation. But, there existed significant difference in parental influence on children with respect to father's education, mother's education and father's occupation. Therefore, studying the behavioral autonomy of upper primary school students provides many effects on both students and educational setting.

Keywords: Behavioral Autonomy, decision-making ability, self-reliance, parental influence

Introduction

Background of the Study

Education is essential for all people. Education aims to provide individuals with social, emotional, cultural, personal and behavioral developments. For a person, the ability to govern one's self is very important because he/she is only the person who struggles the difficulty of his/her life with his/her ability. So, it needs to be trained to possess autonomy, the ability of rule one's self and regulate one's own life successfully. Autonomy refers to the growing ability to think, feel, make decisions, and act on her or his own. The development of autonomy does not end after the teen years. Autonomy is an integral element of identity and may be seen as an indicator of psychological maturity.

There are three categories of autonomy (Steinberg and Silverberg, 1986). They are emotional autonomy, behavioral autonomy and value autonomy. Emotional autonomy refers to the process of individuation, or the adolescent's relinquishing of childhood dependencies on parents as well as childhood conceptions of parental omnipotence. Value autonomy means having a set of principles that enable the adolescent to determine what is right or correct. Behavioral autonomy refers to the adolescent's ability to make independent decisions and carry them out and to the susceptibility of the adolescent peer pressure. In 2005, Beckert indicated that developmentally a person grows autonomous from behavioral (childhood) to emotional (early adolescence) and ultimately to cognitive (late adolescence). Autonomy occurs from behavior to feelings to thought. Thus, behavioral autonomy encompasses self-reliant behavior, intrinsically motivated behavior and the ability to make independent decisions (Silverberg & Gondoli, 1996). Behavioral autonomy refers to the ability to make decisions independently and to follow through on these decisions with actions. Behavioral autonomy is related to behaviors. The development

¹ Assistant Lecturer, Department of Educational Psychology, Sagaing University of Education

² Associate Professor, Department of Educational Psychology, Sagaing University of Education

of behavioral autonomy has not been the focus of much research in spite of behaviors being considered as important hallmarks of transition between childhood and adulthood.

Aim of the Study

The main aim of the present study is to study the behavioral autonomy of Upper Primary School Students in Aungmyaytharzan Township. There are five specific objectives in this study. They are:

- To study the behavioral autonomy of Upper Primary School Students by gender differences.
- To find out whether there are significant differences in Upper Primary School Students by grades.
- To analyze the behavioral autonomy of Upper Primary School Students by sibling.
- To compare the behavioral autonomy of Upper Primary School Students by parents' education.
- To explore the differences in the behavioral autonomy of Upper Primary School Students by parents' occupation.

Methodology

Participants of the Study

Information regarding students' behavioral autonomy were gathered from the Grade 4 and Grade 5 students in Aungmyaytharzan Township during the academic year of 2014-2015. By random sampling method, the four high schools in Aungmyaytharzan Township were chosen. The total number of the participants was 600. They were comprised of 300 Grade 4 students and 300 Grade 5 students; 300 were male students and 300 were female students.

The Characteristics of the Participants

Characteristics		<i>N</i>	Percentage (%)
Gender	Male	300	50%
	Female	300	50%
Grade	Grade 4	300	50%
	Grade 5	300	50%

Research Design and Method

In this study, descriptive research design and survey method were used. Behavioral Autonomy Questionnaire was used to collect the necessary data.

Instrumentation

The students' behavioral autonomy questionnaire was based on Manuela Fleming (2005). Behavioral autonomy questionnaire contains three subscales. Discision-making and self-reliance subscales were answered by students themselves. Parental influence subscale was answered by their parents.

Procedure

Firstly, literature review was gathered from several available books, reports, theses, journals and internet sources. Then Questionnaire of behavioral autonomy were adapted and translated to Myanmar version. Then, expert judgments were done to validate the instruments. As the authority concerned permitted, pilot testing was taken to validate instruments.

Data collection was done after validating the instruments. After collecting the required data, the data were analyzed and interpreted. Finally, the necessary suggestions and recommendations of the study were discussed.

Data Collection

In this study, the data were collected by quantitative research method with the permission of the respective head masters. The data collection was undertaken with Grade 4 and Grade 5 students in Aungmyaytharzan Township during the academic year of 2014-2015. The researcher explained the main purpose of this study and the importance of their participation to the participants. Then, the questionnaires were delivered and instructions were given to the participants on how to answer the questionnaires. On average, the participants spent about 45 minutes to complete questionnaire. And then, the questionnaire were collected and gathered. After collecting the data, data analysis was made.

Data Analysis and Findings

Behavioral Autonomy of Students

In order to study students' behavioral autonomy by dimensions, descriptive statistics was used and it can be seen clearly in Table 1.

Table 1 Descriptive Statistics for Behavioral Autonomy by Decision-making Abilities and Self-reliance

Dimensions	N	Minimum	Maximum	Mean	SD
Decision-making Abilities	600	20	57	42.11	7.014
Self-reliance	600	21	60	41.21	7.004
Total	600	48	125	83.42	12.279

Table 1 shows that the mean score of decision-making abilities dimension (42.11) was slightly higher than the mean score of self-reliance dimension (41.21). Therefore, it was found that students wished to make decisions independently and wanted to follow through on these decisions with actions.

Table 2 Descriptive Statistics for Behavioral Autonomy by Parental Influence

Dimension	N	Minimum	Maximum	Mean	SD
Parental Influence	600	17	60	40.56	7.670
Total	600	17	60	40.56	7.670

Table 2 shows that the mean score of behavioral autonomy by parental influence was 40.56. The students had parental influence on their behavioral autonomy. According to the result, parents can support their children's need for autonomy by taking children's perspectives and viewpoints, allowing children choices, supporting their initiatives and problem solving attempts.

Gender Differences in Behavioral Autonomy

Gender based analysis was used to find out the differences in behavioral autonomy among male and female students. Comparison of behavioral autonomy by gender can be seen clearly in Table 3.

Table 3 Descriptive Statistics for Decision-making Abilities and Self-reliance by Gender

Dimensions	Gender	N	Mean	SD
Decision-making Abilities	male	300	42.11	6.818
	female	300	42.12	7.216
Self-reliance	male	300	40.31	7.038
	female	300	42.10	6.865
Total	male	300	82.63	11.979
	female	300	84.22	12.541

In decision-making abilities dimension, for male students, the mean score was 42.11 and standard deviation was 6.818. For female students, the mean score was 42.12 and standard deviation was 7.216.

In self-reliance dimension, for male students, the mean score was 40.31 and standard deviation was 7.038. For female students, the mean score was 42.10 and standard deviation was 6.865.

Table 4 Gender Differences in Decision-making Abilities and Self-reliance

Dimensions	Gender	Mean	SD	t	df	p
Decision-making Abilities	Male (N=300)	42.11	6.818	-.017	598	.986
	Female (N=300)	42.12	7.216			
Self-reliance	Male (N=300)	40.31	7.038	-3.153	598	.002
	Female (N=300)	42.10	6.865			

The result of Table 4 reveals that in decision-making abilities, students of male and female were not different significantly.

Table 5 Gender Differences in Parental Influence

Dimension	Gender	Mean	SD	t	df	p
Parental Influence	Male (N=300)	40.34	7.592	-.708	598	.479
	Female (N=300)	40.78	7.754			

The result of Table 5 showed that there was no significant difference between male and female students in parental influence. It meant that there was equally parental influence on male and female students' behavioral autonomy.

Grade Differences in Behavioral Autonomy

Grade differences in behavioral autonomy were examined after studying gender differences in behavioral autonomy of students. Comparison of behavioral autonomy by grade can be seen clearly in Table 6.

Table 6 Descriptive Statistics for Decision-making Abilities and Self-reliance by Grade

Dimensions	Grade	N	Mean	SD
Decision-making Abilities	Grade 4	300	40.36	6.958
	Grade 5	300	43.87	6.630
Self-reliance	Grade 4	300	39.67	7.435
	Grade 5	300	42.75	6.184
Total	Grade 4	300	80.23	12.690
	Grade 5	300	86.61	10.982

As mentioned in Table 6, the mean score and the standard deviation of Grade 4 students in decision-making abilities were 40.36 and 6.958. And the mean score and the standard deviation of Grade 5 students in decision-making abilities were 43.87 and 6.630.

In Self-reliance, the mean score and the standard deviation of Grade 4 students were 39.67 and 7.435. And the mean score and the standard deviation of Grade 5 students were 42.75 and 6.184.

Table 7 Grade Differences in Decision-making Abilities and Self-reliance

Dimensions	Grade	Mean	SD	t	df	p
Decision-making Abilities	Grade 4	40.36	6.958	-6.326	598	.000
	Grade 5	43.87	6.630			
Self-reliance	Grade 4	39.67	7.435	-5.510	598	.000
	Grade 5	42.75	6.184			

The result of Table 7 shows that there were significant differences between Grade 4 and Grade 5 students in two dimensions of behavioral autonomy: decision-making abilities and self-reliance. In decision-making abilities, the mean score of Grade 5 students (Mean = 43.87) was higher than that of Grade 4 students (Mean = 40.36, $p < .05$). In self-reliance, the mean scores of Grade 5 students (Mean = 42.75) was higher than that of Grade 4 students (Mean = 39.67, $p < .05$). So, Grade 5 students were significantly higher in decision-making abilities and self-reliance than Grade 4 students. It would be said that the higher the education level, the more they think autonomously.

Table 8 Grade Differences in Parental Influence

Dimension	Grade	Mean	SD	t	df	p
Parental Influence	Grade 4	40.95	8.097	1.251	598	.211
	Grade 5	40.17	7.211			

The result of Table 8 showed that there were no significantly different in parental influence on Grade 4 and Grade 5 students. It meant that the parents gave parental influence equally on their Grade 4 and Grade 5 children.

Differences in Behavioral Autonomy by Sibling

According to the obtained data, number of sibling was divided into two groups as less than 3 siblings, equal and above 3 siblings. The data of these groups can be seen clearly in Table 9.

Table 9 Descriptive Statistics for Decision-making Abilities and Self-reliance by Sibling

Dimensions	Grade	N	Mean	SD
Decision-making Abilities	less than 3	297	41.45	6.838
	equal and above 3	303	42.76	7.134
Self-reliance	less than 3	297	40.56	6.805
	equal and above 3	303	41.84	7.148
Total	less than 3	297	82.02	12.125
	equal and above 3	303	84.80	12.293

For sibling group (where less than 3), the mean score was 41.45 and standard deviation was 6.838. For sibling (where equal and above 3) group, the mean score was 42.76 and standard deviation was 7.134 in decision-making abilities.

For sibling (where less than 3) group, the mean score was 40.56 and standard deviation was 6.805. For sibling (where equal and above 3), the mean score was 41.84 and standard deviation was 7.148 in self-reliance.

Table 10 Differences in Decision-making Abilities and Self-reliance by Sibling

Dimensions	Sibling	Mean	SD	t	df	p
Decision-making Abilities	less than 3	41.45	6.838	-2.280	598	.023
	equal and above 3	42.76	7.134			
Self-reliance	less than 3	40.56	6.805	-2.244	598	.025
	equal and above 3	41.84	7.148			

The result of Table 10 shows that there was significant difference between sibling (where less than 3) and (where equal and above 3) in decision-making abilities and self-reliance. In decision-making abilities, the mean score of sibling (where equal and above 3, Mean = 42.76) was higher than that of sibling (where less than 3, Mean = 41.45). In self-reliance, the mean scores of sibling (where equal and above 3, Mean = 41.84) was higher than that of sibling (where less than 3, Mean = 40.56). It can be interpreted that the children who possessed more siblings exceed in behavioral autonomy.

Table 11 Differences in Parental Influence by Sibling

Dimension	Sibling	Mean	SD	t	df	p
Parental Influence	less than 3	40.90	7.430	1.077	598	.282
	equal and above 3	40.22	7.897			

The result of Table 11 shows that there was no significant difference in parental influence on their children by sibling. Thus, there was no parental influence on behavioral autonomy according to the number of siblings in their family.

Differences in Behavioral Autonomy by Father's Education and Mother's Education

According to the obtained data, father's education was divided into six groups as just reading and writing, primary, middle, high, diploma, graduate and master. Similarly, mother's education was also divided as in father's education. In order to get more detailed information, one way analysis of variance (ANOVA) was conducted.

Table 12 Result for Decision-making Abilities and Self-reliance by Father's Education

Dimensions	Father's Education	df	Mean Square	F	p
Decision-making Abilities	Between Groups	5	22.272	.451	.813
	Within Groups	594	49.421		
Self-reliance	Between Groups	5	42.123	.858	.509
	Within Groups	594	49.112		

According to the observation of the result, there were no significant difference in decision-making abilities and self-reliance by father's education.

Table 13 ANOVA Result for Parental Influence by Father's Education

Dimension	Father's Education	df	Mean Square	F	p
Parental Influence	Between Groups	5	144.345	2.484	.031
	Within Groups	594	58.112		

According to the result, there were significant differences in parental influence by father's education.

In order to attain more detail information of how father's education affect on parental influence, Post Hoc Test was computed by Tukey (HSD) method. The result was shown in the following Table 14.

Table 14 Result of Tukey (HSD) Test for Parental Influence by Father's Education

Father's Education (I)	Father's Education (J)	Mean Difference (I - J)	P
middle	primary	-.466	.996
	high school	-.867	.892
	diploma	-6.237	.356
	graduate and master	-2.892*	.031
graduate and master	just reading and writing	2.294	.652
	primary	2.427	.274
	middle	2.892*	.031
	high school	2.026	.370
	diploma	-3.345	.904

In Table 14, Post Hoc Tukey (HSD) Test indicated that parental influence on their children was different according to father's education. According to the result, the graduate fathers had more influences on children than fathers who had middle school level education.

Table 15 ANOVA Result for Decision-making Abilities and Self-reliance by Mother's Education

Dimensions	Mother's Education	df	Mean Square	F	p
Decision-making Abilities	Between Groups	5	44.608	.906	.477
	Within Groups	594	49.233		
Self-reliance	Between Groups	5	23.252	.472	.797
	Within Groups	594	49.271		

According to the observation of the result, there were no significant differences in decision-making abilities and self-reliance by mother's education.

Table 16 ANOVA Result for Parental Influence by Mother's Education

Dimension	Mother's Education	df	Mean Square	F	p
Parental Influence	Between Groups	5	180.995	3.131	.008
	Within Groups	594	57.803		

Table 16 shows that there was significant difference in parental influence by mother's education.

In order to attain more detail information of how mother's education affect on parental influence, Post Hoc Test was computed by Tukey (HSD) method. The result was shown in the following Table 17.

Table 17 Result of Tukey (HSD) Test for Parental Influence by Mother's Education

Mother's Education (I)	Mother's Education (J)	Mean Difference (I - J)	P
primary	just reading and writing	.321	1.000
	middle	-1.319	.643
	high school	-1.654	.573
	diploma	-2.863	.816
	graduate and master	-3.852*	.005
graduate and master	just reading and writing	4.173	.055
	primary	3.852*	.005
	middle	2.533	.084
	high school	2.198	.331
	diploma	.989	.998

In Table 17, Post Hoc Tukey (HSD) Test indicated that parental influence on their children was different according to mother's education. Graduate mothers had more influences on children than mothers who had primary education level.

Differences in Behavioral Autonomy by Father's Occupation and Mother's Occupation

According to the obtained data, father's occupation was divided into four groups as merchant, government servant, general worker and odd job. Similarly, mother's occupation was also divided as in father's occupation. In order to get more detailed information, one way analysis of variance (ANOVA) was conducted.

Table 18 Decision-making Abilities and Self-reliance by Father's Occupation

Dimensions	Father's Occupation	df	Mean Square	F	p
Decision-making Abilities	Between Groups	3	136.782	2.806	.059
	Within Groups	596	48.754		
Self-reliance	Between Groups	3	5.849	.322	.809
	Within Groups	596	49.220		

According to the observation of the result, there were no significant differences in decision-making abilities and self-reliance by father's occupation.

Table 19 ANOVA Result for Parental Influence by Father's Occupation

Dimensions	Father's Occupation	df	Mean Square	F	p
Parental Influence	Between Groups	3	262.037	4.533	.004
	Within Groups	596	57.808		

According to Table 19, there was significantly difference in parental influence by father's occupation. In order to attain more detail information, Post Hoc Test was computed by Tukey (HSD) method. The result was shown in the following Table 20.

Table 20 Result of Tukey (HSD) Test for Parental Influence by Father's Occupation

Father's Occupation	Father's Occupation (J)	Mean Difference (I – J)	P
merchant	government servant	-1.279	.576
	general worker	1.629	.093
	odd job	4.055	.452
government servant	merchant	1.279	.576
	general worker	2.907*	.010
	odd job	5.333	.231
general worker	merchant	-1.629	.093
	government servant	-2.907*	.010
	odd job	2.426	.809
odd job	merchant	-4.055	.452
	government servant	5.333	.231
	odd job	2.426	.809

In Table 20, Post Hoc Tukey (HSD) Test indicated that parents who were government servants were significantly higher than that of parents who were general workers. However, there was no significant difference in parental influence among other occupations. So, it can be concluded that there was a significant difference in parental influence among father's occupation of government servants and general workers.

Table 21 Decision-making Abilities and Self-reliance by Mother's Occupation

Dimensions	Mother's Occupation	df	Mean Square	F	p
Decision-making Abilities	Between Groups	4	20.545	.416	.797
	Within Groups	595	49.387		
Self-reliance	Between Groups	4	3.403	.069	.991
	Within Groups	595	49.360		

According to the observation of the result, there were no significant difference in decision-making abilities and self-reliance by mother's occupation.

Table 22 ANOVA Result for Parental Influence by Mother's Occupation

Dimensions	Mother's Occupation	df	Mean Square	F	p
Parental Influence	Between Groups	4	139.101	2.386	.050
	Within Groups	595	58.292		

According to the result, there was no significant difference in parental influence on their children by mother's occupation.

Conclusion

Behavioral autonomy is one of the most important elements of autonomy. It plays an important role in maturation and the ability to act for one's self. Behavioral autonomy encompasses self-reliant behavior, intrinsically motivated behavior and the ability to make independent decisions. Therefore, children should have the self-reliant behaviors and the ability to make independent decisions to possess behavioral autonomy. Therefore, this research will explore the behavioral autonomy of children. Development of autonomy helps prepare young people to make decisions and take care of themselves.

Behavioral autonomy is one of the essential psychological needs of people. Therefore, behavioral autonomy is as functionally important for girls as boys. Findings of this study indicated that girls have more significantly autonomous than boys in self-reliance component of behavioral autonomy. This finding was supported by the finding of Stuyck (2003) which has discovered that the analysis of behavioral areas revealed that girls see themselves as significantly more autonomous than do boys, while boys see themselves as more autonomous than to girls in terms of returning home at night, as establishing correlations between autonomy and self-esteem. Gender differences in expectations for behavioral autonomy appear to be less pronounced today than in the past and gender differences may be greater in some cultures than in others (Feldman & Rosenthal, 1990).

Acknowledgements

Initially, I wish to express my sincere appreciation to Dr. Saw Pyone Naing (Rector, Sagaing University of Education), and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) who allowed me to do this research. I would like to express my gratitude to Dr. Khin Hnin Nwe (Associate Professor, Head of Department, Department of Educational Psychology, Sagaing University of Education) for her scholarly guidance. Her support, encouragement and involvement in my study have helped in the completion of this thesis. I would like to express special thanks to all my teachers in Department of Educational Psychology, Sagaing University of Education, for guiding me to be convenient in everything with warm and kind-hearted suggestions and precious supports and help. I also heart fully thanks to all participants for this study.

References

- Beckert, T.E. (2005). *Fostering Autonomy in Adolescents: A Model of Cognitive Autonomy and Self-Evaluation*, Paper presented at the American Association of Behavioral and Social Sciences February 16, 2005, Las Vegas, Nevada.
- Friedman, D., Holmbeck, G. N., Delucia, C., Jandasek, B., & Zebracki, K. (2009). Trajectories of Autonomy Development across the Adolescent Transition in Children with Spina Bifida. *Rehabilitation Psychology*, 2009, Vol.54, No.1, 16-27. Retrieved September 15, 2014 from <http://www.luc.edu/psychology/pdfs/gh26.pdf>.
- Garbarino, J. (1985). *Adolescent Development: An Ecological Perspective*. U.S.A: Bell & Howell Company.
- Geary, C.A. (1995). *Adolescent Autonomy with Parents as a Predictor of Low Susceptibility to Peer Pressure*. University of Virginia.
- Steinberg, L. (1999). *Adolescence*. Boston: McGraw-Hill. Retrieved November 24, 2014 from <http://www.Highered.mcgraw-hill.com/sites/0072414561/student-view0/part3/chapter9/chapter-Outline.html>

THE RELATIONSHIP BETWEEN BEHAVIORAL PROBLEMS AND SOCIAL COMPETENCE AMONG CHILDREN: A META-ANALYSIS

Thida Lwin¹

Abstract

The main aim of this study is to examine and summarize the relationship between behavioral problems and social competence among children. And then the possible moderators in this relation were also explored. A systematic search was computed from June 2000 to December 2019 that reported a link between behavioral problems (externalizing behaviors, conduct problems, or aggression) and social competence (social competence or social skills). The search engines such as Google, Eric, Science Direct, and Google Scholar were applied. To be included in the present meta-analysis, each study had to meet the following criteria: (1) provided an empirical study where the necessary data to calculate the effect size; (2) written in English; (3) conducted in 2000 or later; (4) intended for children between 3 and 11 years; (5) included reports by the parent(s) and/or teacher(s); and (6) published paper. The search admitted a total of 543 references, 491 references were removed step by step via selection criteria. Finally, a total of 52 independent studies and a total of 36,165 participants remained for the present meta-analysis study. Findings summarized that an overall effect size between behavioral problems and social competence was $r = -0.49$ ($p < .01$). Moderator analyses indicated that there were no significant moderator effects on different types of behavioral problems or social competence, instrument, gender, year of publication, target population, and socioeconomic status. But, a significant statistical difference was found in terms of the type of respondent, age, and study continent. The results reveal that the intervention programs targeting problems would benefit from decreasing these behavioral problems and increase social competence among children.

Keywords: Behavioral Problems, Social Competence, Meta-analysis

Introduction

Human development is a lifelong process. Human development for everyone (i.e. not different for people with disabilities) can be classified into three domains namely: biosocial domain, cognitive domain, and psychosocial domain (Berger, 2001). Particularly during childhood, several factors can impact the optimal development of these domains. Many psychologists and theorists explained the exchange of person and environment and then they emphasized the developmental process of children. Besides, the recent evidence designates that human development is a consequence of the interplay of genetic and the environment. Therefore, the environment is also the main effect on children's development.

Environmental factors especially home and school factors in children such as family relationships, peer relationships, peer pressure, student-teacher attachment, parenting styles are the most effect on the children. Every child is aspired to possess certain skills and experiences that will enable him or her to obtain expectable academic and social achievement when entering the school system. To accomplish his or her educational goals, a child should develop expressive language abilities, the ability to follow instructions, problem-solving skills, peer attachment, academic competence, and social competence.

Adjustment abilities, social competence, and problem-solving skills especially shape in childhood and adulthood. Therefore, the development of social competence and adjustment abilities in children has become an interesting area. Social competence is defined as a construct concerning a variety of qualities and traits such as positive self-image, social assertion, social cognitive skills, and popularity with peers as well as others (Hukkelberg, 2019). The term "social competence" is similar meaning with the term "social skills". Matson (2015) defined social skills as particular behavior types, in which a person should perfect to participate successfully and actively in a variety of social settings.

¹ Assistant Lecturer, Department of Educational Psychology, Sagaing University of Education

Children who are socially collaborative and friendly are likely to make completely and practically in social and academic settings. In contrast, there is a negative association between social competence, and children's behavioral problems on the other hand (Qin, 2002). Especially, the increasing of social competence in children may be one of the valuable alternatives or supplement efforts at reducing these behavior problems.

Moreover, social competence and behavioral problems are negatively correlated in children (Najaka, 2001). However, these correlated constructs vary extensively across studies (Zhang et al., 2017). Not all children who show poor social competence exhibit some behavioral problems and not all children who display these problems are socially incompetent. It can be a great interest to review the strength of this correlation to exhibit how these two constructs are related. Therefore, this study will explore systematically the association between behavioral problems and social competence among children. And then this study will also find out the various moderator roles of these two constructs via meta-analysis.

Normand (1999) defined meta-analysis as a process of combination of the results of several studies to report at evidence synthesis and evaluation. It is a method for systematically combining qualitative and quantitative data from several selected studies to develop a single conclusion. This conclusion is statistically more powerful than the analysis of any single study. This is because of the increased numbers of subjects, greater diversity, or accumulated effects and results among subjects.

Therefore, a meta-analysis study is justified to systematically summarize the findings of the studies that have examined the association between behavioral problems and social competence as well as to explore the overall strength of the two related constructs. Besides, the results of the present meta-analysis study will help to clarify the possible moderators related to the constructs which may explain the variation among studies.

Aim of the Study

The main aim of this meta-analysis study is to evaluate and systematically analyze the relation between behavioral problems and social competence among children via meta-analysis technique. The specific objectives are as follows:

- (1) To explore an overall effect size for the relationship between behavioral problems and social competence among children,
- (2) To find out the various moderator roles for the two related constructs via meta-analysis.

Definitions of Key Terms

Behavioral Problems: Behavioral problems can be defined as the symptomatic expressions of emotional or interpersonal maladjustment especially in children (George, 2019).

Social Competence: Social competence can be defined as the ability to take another's attitude concerning a situation and to learn from past experiences and apply that learning to the ever-changing social aspect (Semrud-Clikeman M., 2007).

Meta-analysis: Meta-analysis is a quantitative approach for systematically combining results of previous researches to arrive at conclusions (Tulasi Roman P, 2013).

Method

In this present study, a meta-analysis was conducted with Systematic Reviews by using Comprehensive Meta-analysis software (CMA, version 3.0).

Literature Searching for the Studies

The search was done in databases such as Google, Google Scholar, Science Direct, and ERIC. The search strategy included the terms behavioral problems, externalizing behaviors, conduct problems, aggression combining with the Boolean operator “AND” and then the terms social competence, social skills in children. The search was limited to papers published in 2000 or later, and restricted to papers in the English language. The researcher explored the titles, abstracts, or full text for relevance by using the selection criteria.

Selection Criteria of the Studies

For inclusion criteria in the present meta-analysis study were: (1) provided an empirical study where the necessary data (reporting correlation) to calculate the effect size; (2) written in English; (3) conducted in 2000 or later; (4) intended for children between 3 and 11 years; (5) included reports by the parent(s) and/or teacher(s); and (6) published paper.

Data Entry

The data were carefully entered into an Excel spreadsheet (see in Table 1). All the references searched were double-checked for accuracy of coding and data entry. And then, the data were sorted to insure no duplicate entries and that there were not two studies by the same author with similar data. Non-overlapping 52 studies were identified and evaluate in the present meta-analysis study. The total sample size in this meta-analysis was 36,165 participants from 52 studies. The percentage of males was the range from 25.64% to 83.23% ($M=51.39$, $SD= 11.1$), and the mean age of children was 5.56 years ($SD= 1.65$).

In order to examine how the study characteristics that can affect the relationship between behavioral problems and social competence among children, the characteristics of the studies were coded. The following characteristics such as the mean of the age (in years), sample size, the gender distribution of the sample (male %), population (normal children or disabled children), type of instruments, student continent and respondent were coded in the present study. Table 1 presents the characteristics of all studies included in this meta-analysis study.

Table 1 Examples of Coding Sheet

Author	Year	Age	Sample Size	Gender (Male %)	Instrument	Type (Behaviors)	Type (Social)	Respondent	Socioeconomic Status	Population	Study Continent	Correlation
Lopez-Romero et al.	2018	5.4	260	55.8%	1	2	2	1	3	1	2	$r=-0.25$
Vahedi S.	2012	3.6	499	51.1%	2	1	1	2	3	1	3	$r=-0.36$
Broekhuizen et al.	2016	5	1175	47%	1	1	2	1	3	1	4	$r=-0.54$
Tina Runjić	2015	9	39	46.2%	1	3	2	1	2	2	1	$r=-0.4$
Nieto et al.	2016	5	119	50.4%	2	1	1	3	1	1	2	$r=-0.62$

Selection Process of the Studies

Figure 1 describes a flowchart showing the selection process of the studies. Firstly, a total of 543 references were identified. After the removal of duplicate studies 90 references, the remaining 453 references were checked by screening their titles and abstracts. Since 289 studies were irrelevant with the present meta-analysis, the full texts of the remaining 164 studies were assessed for acceptability via selection criteria of the present study.

Furthermore, 112 studies were excluded for not meeting the above-mentioned selection criteria. In particular, they were excluded because (a) some studies lacked necessary data to compute effect size ($n=60$), (b) some studies were not written in English ($n=7$), (c) some studies not conducted in 2000 or later ($n=25$), (d) some studies not intended for children between 3 and 11 years ($n=13$), (e) some studies lacked a description of participants ($n=5$) and (f) some studies were unpublished theses ($n=2$). After eliminating irrelevant publication studies with inclusion criteria of the present study, 52 relevant studies were retained and evaluated for incorporation into the meta-analysis.

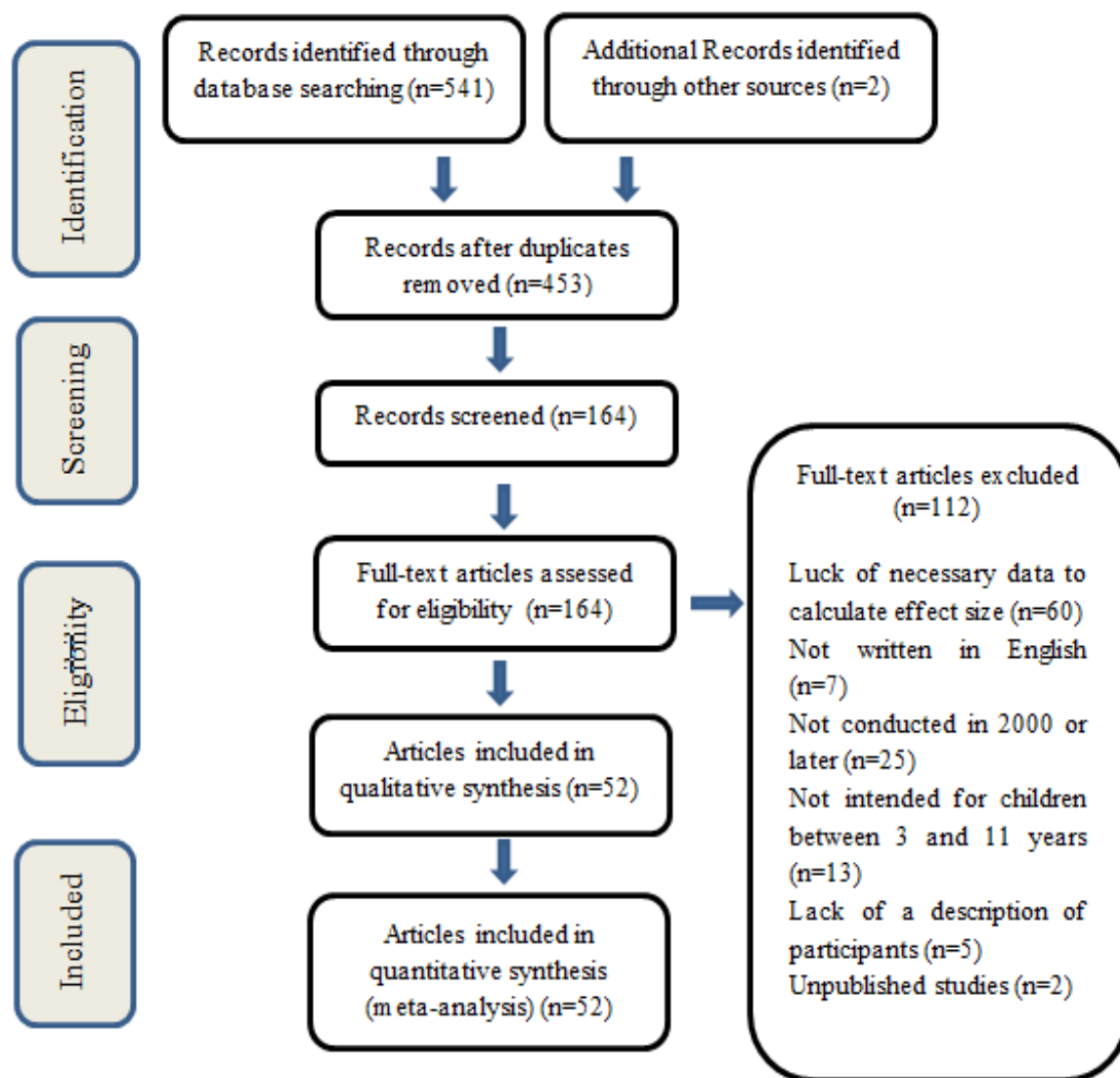


Figure 1 A Flowchart Showing the Selection Process for Studies included in the Present Meta-analysis

Statistical Analysis

In order to analyze the data of the present meta-analysis, Comprehensive Meta-Analysis software (CMA Version 3.0) was conducted. Average effect size and a 95% confidence interval were calculated with the improved method (Sánchez-Meca & Marín-Martínez, 2008).

Effect size heterogeneity

Heterogeneity, in effect sizes among the studies, was considered by the means of Q statistic. Q statistics reveal when there is significant variability among each set of effect sizes, larger than what could be expected from sampling error only. Moreover, I^2 values were reported which show the total percentage of variability in a set of effect sizes arising from study differences.

The I^2 value ranges from 0 to 100%. Lower I^2 values are assumed to reflect spurious observed variance, whereas larger values are assumed to reflect more serious reasons for the observed variance, and consequently, reasons to perform moderator analyses (Hukkelberg S. et al., 2019). I^2 values about 25% can be interpreted as reflecting low heterogeneity, as well as 50%, and 75% with assumed as moderate and also large heterogeneity (Higgins et al., 2003). If the effect size showed heterogeneity in this relation, then sub-group analysis and meta-regression moderator analyses were computed to explore the study characteristics statistically associated with the effect size across the studies.

Forest plots

Forest plots that show the dispersion of effect sizes and accompanying prediction intervals that express this dispersion across the studies are the key of meta-analysis result (Hak et al., 2016; Kiran et al., 2017; Riley et al., 2011: cited in Suurmond, et al., 2017). The prediction interval offers a convenient format for expressing the full uncertainty around inferences because both magnitude and consistency of effects may be considered as a result of dispersion (Higgins, Thompson, Spiegelhalter, 2009: cited in Suurmond, et. al., 2017).

Moderator analyses

Moderator analyses exploring the effects of age, gender, socioeconomic status, the origin of study, type of measures, instrument, year of publication, and respondent to explain the heterogeneity across studies. A minimum of 5 studies was considered a moderator as usable. To predict variations in effect size across studies from the continuous moderator variables, meta-regression was calculated.

Results

Overall Correlation between Behavioral Problems and Social Competence

In order to explore the overall relationship between behavioral problems and social competence among children, a meta-analysis was calculated. Table 2 describes the result of the overall effect size for behavioral problems and social competence among children.

Table 2 Overall Effect Size for Behavioral Problems and Social Competence among Children

	N	k	r	95% CI		P	Q	I^2
				LL	UL			
Overall effect size	36165	52	-0.49	-0.53	-0.45	0.00	1342.37	96.2%

Note: N= total number of participants, k=the number of studies, r=mean effect sizes for correlation, LL and UL=lower and upper limits of the 95% confidence intervals; Q= Cochran's heterogeneity Q statistic; I^2 =heterogeneity index, p=significance level.

The average negatively significant correlation between behavioral problems and social competence was $r = -0.49$ ($p < .01$). However, the variation in correlations across studies was significant and high ($Q = 1342.37$, $p < .001$), and the I^2 statistics were 96.2% of the observed variability. It indicates one or more variables in which moderate the relation of behavioral problems between and social competence.

In order to show the dispersion of effect sizes and prediction intervals, forest plots were drawn. Figure 2 displays the forest plot showing effect sizes and confidence intervals for each study ($k = 52$).

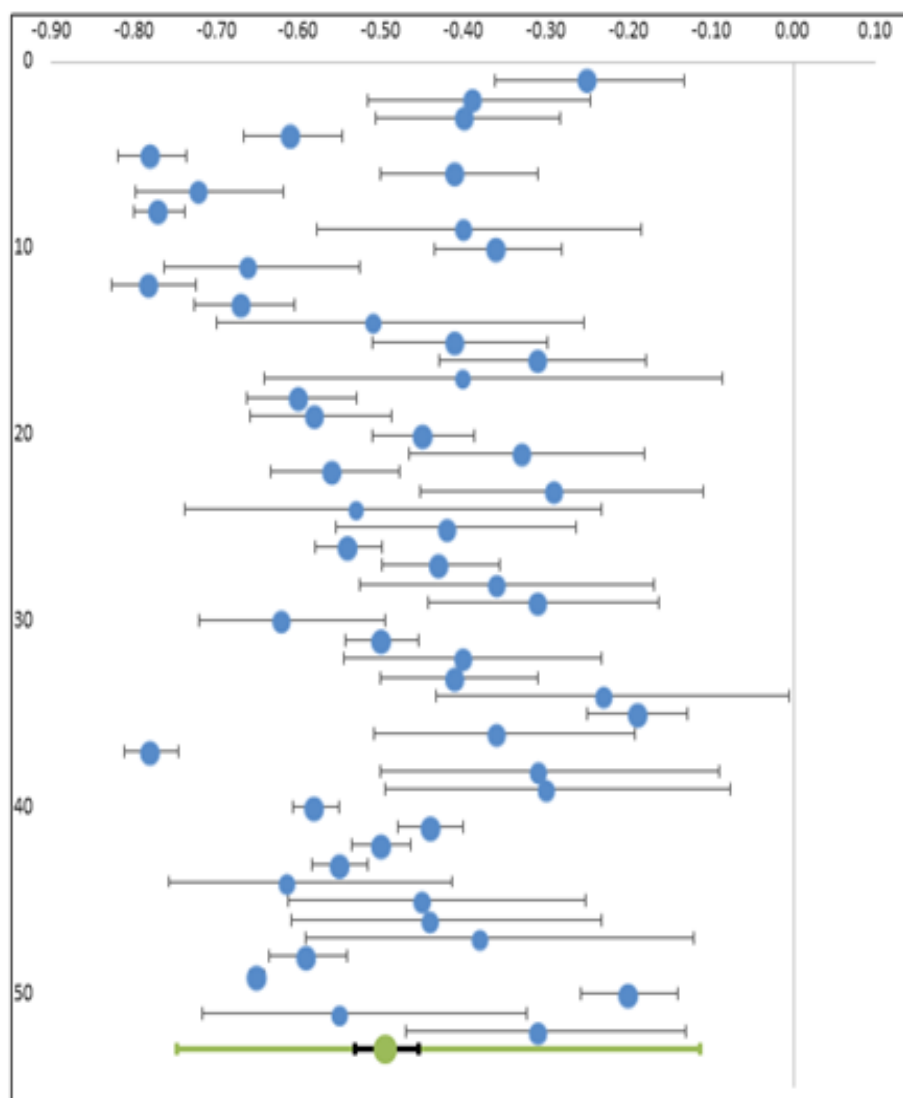


Figure 2 Forest Plot Showing Effect Size for Behavioral Problems and Social Competence

Moderator analyses for Behavioral Problems and Social Competence

In order to explore the heterogeneity of the overall effect sizes in the link between two related constructs, moderator analyses were conducted. Method related moderators and demographic moderators were analyzed for categorical variables. Table 3 presents the results of the method related to categorical moderators and test statistics.

Table 3 Subgroups Analysis for Method Related Variables of the Two Constructs

Moderator	k	r	95% CI		p	Q _w	I ²	Q _b	p
			LL	UL					
Type Problems									
Aggression	14	-0.46	-0.55	-0.35	0.00	220.96	91.85%	3.33	0.343
Conduct Problems	7	-0.56	-0.74	-0.3	0.00	139.96	95.71%		
Externalizing Behaviors	12	-0.43	-0.53	-0.32	0.00	732.52	98.5%		
Behavioral Problems	19	-0.53	-0.59	-0.46	0.00	375.96	94.41%		
Type Social Competence									
Social Competence	26	-0.52	-0.59	-0.43	0.00	654.04	96.18%	0.82	0.364
Social Skills	26	-0.47	-0.52	-0.41	0.00	657.63	96.2%		
Instrument									
Same	28	-0.46	-0.53	-0.39	0.00	622.96	95.67%	2.62	0.105
Different	24	-0.53	-0.60	-0.47	0.00	478.24	95.19%		
Respondent									
Parent	24	-0.56	-0.61	-0.50	0.00	367.78	93.47%	49.59	0.000
Teacher	15	-0.53	-0.62	-0.43	0.00	324.27	95.68%		
Parent-teacher	12	-0.31	-0.36	-0.25	0.00	33.35	67.02%		

Types of Constructs and Instrument: For behavioral problems, three different constructs were coded as externalizing problems, conduct problems, and aggression in this meta-analysis study. The result indicated that the between-level Q did not appear significant difference ($Q_b = 3.33$, $p = .343$). It can be said that the correlations between behavioral problems and social competence were not moderated effect in terms of the type of problems.

For social competence, social competence and social skills were examined as a social construct: social competence ($k=26$) and social skills ($k=26$). The average correlations were $r = -0.52$ and $r = -0.47$ respectively. There was no significant difference in the overall relationship across social competence measured ($Q_b = 0.82$, $p = .364$).

Moreover, whether relying on the same instrument or different instruments in the assessment of the two constructs were analyzed. Results showed that instrument type does not moderate the overall correlation ($Q_b = 2.62$, $p = .105$).

Type of Respondent: In order to examine whether the type of respondents moderated the overall correlation, three different respondents were conducted: parent report ($k=24$), teacher report ($k=15$), and parent-teacher report ($k=12$). The average correlations for type of respondents were $r = -0.56$, $r = -0.53$ and $r = -0.31$ respectively. The results revealed that the homogeneity test for the type of respondent has significantly moderated the link between behavioral problems and social competence ($Q_b = 49.59$, $p < .01$). It can be said that type of respondent is a moderate effect on the association between behavioral problems and social competence.

Table 4 Subgroups Analysis for Demographic Moderators of the link between Behavioral Problems and Social Competence

Moderator	k	r	95% CI		p	Q _w	I ²	Q _b	p
			LL	UL					
Age									
Age ≤ 5	25	-0.48	-0.54	-0.42	0.00	634.98	96.22%	11.06	0.004
Age between 5 and 8	15	-0.4	-0.49	0.31	0.00	136.17	98.72%		
Age ≥ 8	12	-0.62	-0.71	-0.50	0.00	225.27	95.12%		
Population									
Normal Children	43	-0.50	-0.55	-0.44	0.00	1314.18	96.8%	0.01	0.904
Disabled Children	9	-0.49	-0.57	-0.40	0.01	21.17	62.21%		
Socioeconomic Status									
Middle/ High	7	-0.58	-0.72	-0.39	0.00	106.10	94.83%	1.79	0.407
Low	7	-0.47	-0.64	-0.26	0.00	108.74	94.48%		
SES	38	-0.48	-0.53	-0.43	0.00	1094.78	96.62%		
Study Continent									
Asia	9	-0.48	-0.54	-0.40	0.00	55.16	85.50%	11.442	0.010
England	8	-0.33	-0.46	-0.19	0.00	76.92	90.90%		
Europe	13	-0.54	-0.64	-0.42	0.00	288.59	95.84%		
USA	22	-0.54	-0.60	-0.46	0.00	296.21	92.91%		

Age: In order to investigate whether child age moderates the link between two constructs, the researcher considered age as a categorical moderator. Results indicated that the correlation was higher in the eldest group ($r=-0.62$) than the other two groups ($r=-0.48$ and $r=-0.4$). Between-level Q analysis revealed that age group was significantly moderated the overall correlation link between behavioral problems and social competence ($Q_b=11.06$, $p<.01$).

Population: Besides, the target population was grouped as normal children ($k=43$) and disabled children ($k=9$). Results showed that the target population does not moderate the overall correlation ($Q_b=0.01$, $p=.904$).

Socioeconomic Status: Socioeconomic status (SES) was categorized as middle/high, low, and all levels of SES. Results showed the Q statistic did not moderate the overall correlation between behavioral problems and social competence in terms of socioeconomic status ($Q_b=1.79$, $p=.407$).

Study Continent: In order to examine whether the study continent moderated the overall correlation, four different codes were analyzed: Asia ($k=9$), England ($k=7$), Europe ($k=14$), and USA ($k=22$). The average correlations for study continent were $r=-0.48$, $r=-0.33$, $r=-0.54$ and $r=-0.54$ respectively. The results indicated that the study continent moderated effect to the overall correlation between behavioral problems and social competence ($Q_b=11.442$, $p<.01$).

In order to explore the moderator effect on the relationship between behavioral problems and social competence, meta-regression analyses were conducted. Table 5 presents the examined continuous moderators and test statistics.

Table 5 Meta-regression Analysis for Year of Publication and Male

Variable	Coefficient	Standard Error	95% CI		z value	p-value
			LL	UL		
Year of Publication	0.20	0.01	0.00	0.02	1.35	0.177
Male (%)	-0.15	0.00	-0.01	0.00	-1.04	0.297

Also, the year of publication was examined in order to investigate the moderate effect on the relationship between behavioral problems and social competence. The meta-regression analysis showed that year of publication did not moderate the relationship between behavioral problems and social competence ($\beta=0.2$, $SE=0.01$, $z=1.35$, $p=0.177$, $k=52$).

The percentage of males for each article was coded, and gender was explored as a continuous variable. Results showed that the percentage of males was not a significant predictor of the overall effect size ($\beta=-0.15$, $SE=0.00$, $z=-1.04$, $p=0.297$, $k=52$). It can be concluded that gender did not moderate effect on the two related constructs.

Conclusion

Through an analysis of 52 studies with 36,165 participants, meta-analysis results revealed that behavioral problems have a significant negative association with social competence in children. The studies in which respondents were the same (either parents or teachers) for both two constructs showed significantly high association than those that relied on different respondents.

Moreover, children aged above eight showed a significantly higher correlation than the other age groups. Study continent indicated a significantly lower correlation in England than in the other regions link with behavioral problems and social competence. But, differences related to constructs, instrument type, gender, year of publication, target population, and socioeconomic status did not seem to change the strength of two related constructs. In sum up, the result showed a negative moderate correlation between these problems and social competence. Additionally, the present study will provide the effects of moderating role between behavioral problems and social competence into the contribution to the future direction. Besides, the present study will provide that the intervention programs targeting problems would benefit from decreasing these behavioral problems and increase social competence among children.

Acknowledgment

I would be pleased with the expression of special thanks to my teachers and colleagues from Department of Educational Psychology, Sagaing University of Education.

References

- Beauchamp MH, Anderson V. (2010). SOCIAL: an integrative framework for the development of social skills. *Psychol Bull*;136(1):39.
- Borenstein M, Hedges LV, Higgins J, Rothstein HR., (2009). Random-effects model Introduction to Meta-analysis (pp. 69–75). New Jersey, USA: Wiley;
- Broekhuizen et al. (2016). Classroom Quality at Pre-kindergarten and Kindergarten and Children's Social Skills and Behavior Problems, *Early Child Res Q*; 36: 212–222. DOI:10.1016/j.ecresq.
- Campbell, C., Hansen, D. J., & Nangle, D. W. (2010). Social skills and psychological adjustment Practitioner's guide to empirically based measures of social skills (pp. 51-67): springer.
- Eisner MP, Malti T. (2015). Aggressive and violent behavior. In: Lamb ME, L. R. M., editors. Handbook of child psychology and developmental science. New York: Wiley; p. 795–884.

- George (2019). Supporting Students with Emotional and Behavioral Problems: Prevention and Intervention Strategies 1st Edition, Kindle Edition
- Lipsey, M. W., & Wilson, D. B. (2001). Applied social research methods series (Vol. Vol. 49. Practical meta-analysis). Thousand Oaks, CA: Sage Publications
- Lopez-Romero et al. (2018). The role of executive function in social competence and behavioral problems in the last year of preschool. Edit. Servicio de Publicaciones de la Universidad de Murcia. Murcia (Spain) ISSN print edition: 0212-9728. ISSN online edition <http://revistas.um.es/analesps>: 1695-2294.
- Matson JL, (2015). Social Behavior and Skills in Children. New York: Springer Dordrecht Heidelberg London.
- McFall RM. (1982). A review and reformulation of the concept of social skills. Behav Assess.1–33.
- Najaka SS, Gottfredson DC, and Wilson DB (2001). A meta-analytic inquiry into the relationship between selected risk factors and problem behavior. Prev Sci; 2: 257-271.
- Qin Ch, Yong J. (2002). Social Competence and Behavior Problems in Chinese Preschoolers Early Education & Development; 13: 171-186.
- Ren L, Zhang X, Zhou N, (2017). Interactive effects between maternal parenting and negative emotionality on social functioning among very young Chinese children. Early Educ Dev;28(1):21–40.
- Sánchez-Meca, J., & Marín-Martínez, F. (2008). Confidence intervals for the overall effect size in random-effects meta-analysis. *Psychological Methods*, 13(1), 31–48. <https://doi.org/10.1037/1082-989X.13.1.31>
- Semrud-Clikeman, Margaret (2007). Social competence in children. New York: Springer. <http://www.waxmann.com>
- Suurmond, R., Rhee, V. H., & Hak, T. (2017). Introduction, comparison, and validation of Meta-Essentials: A free and simple tool for meta-analysis. *Research Synthesis Methods*. 8. 537-553. 10.1002/jrsm. 1260.
- The relation between behavioral problems and social competence: a correlational meta-analysis. *BMC Psychiatry*. <https://doi.org/10.1186/s12888-019-2343-9>
- Tulasi Roman P, (2013). An overview of meta-analysis in research: definition of meta-analysis.
- Vahedi S. (2012). Social Competence and Behavior Problems in Preschool Children, Iran J Psychiatry; 7: 126-134
- Webster-Stratton C, Jamila Reid M, Stoolmiller M, (2008). Preventing conduct problems and improving school readiness: Evaluation of the incredible years' teacher and child training programs in high-risk schools. J Child Psychol Psychiatry;49:471–88. <https://doi.org/10.1111/j.1469->

A STUDY ON CONFLICT HANDLING STYLES AND ORGANIZATIONAL COMMITMENT OF TEACHERS IN MYANMAR

Honey Ko Ko¹, Moe Moe Naing²

Abstract

The main purpose of this study was to investigate the conflict handling styles and organizational commitment of teachers from basic education schools in Myanmar. Descriptive survey method and quantitative research design were used in this study. By using proportionate stratified sampling method, a total of 826 teachers from selected basic education schools in Sagaing Region, Chin State, Kayah State, Bago Region and Mon State were chosen as participants. Conflict handling styles of teachers were measured by using Rahim Organizational Conflict Inventory – II developed by Rahim (1983). In measuring teachers' levels of affective, continuance, and normative commitment on organization, Allen and Myers' (1990) Three-Component Organizational Commitment Scale and Organizational Commitment Questionnaire (OCQ) developed by Mowday, Steers & Porter (1979) were used. According to the result, 38.25% of teachers reporting it as their dominant conflict handling style. The smallest portion of teachers in this study used compromising style as a conflict handling strategy (10%). Teachers' conflict handling style did not depend on gender. According to age, teachers whose age is between 19 and 30 years used competing style more than teachers whose age is between 30 and 45 years. Similarly, teacher whose age is between 19 and 30 years used compromising style more than teachers whose age is between 30 and 45 years and between 45 and 60 years. Concerning designation, junior teachers possessed competing style than senior teachers. In accommodating style, primary and junior teachers had more use of accommodating style than senior teachers. Similarly, junior teachers possessed compromising style than senior teachers. Concerning years of service, teachers whose years of service is under 10 years had higher use of compromising style than those whose years of service is between 10-20 years. Similarly, teachers whose years of service is under 10 years had higher use of compromising style than those whose years of service is above 20 years. Teachers in this study possessed high organizational commitment in their profession. Female teachers had higher organizational commitment than male teachers. According to the results, organizational commitment did not depend on age, designation (position in profession) and years of service in this study. Moreover, the regression analysis result revealed that conflict handling styles contributed 11% of the variance to organizational commitment.

Keywords: Conflict Handling Styles, Organizational Commitment

Introduction

Conflict is a process that starts when individuals or groups have differences regarding interests, beliefs, values, or practices that are important to them (Mukhtar&Habib, 2010). Conflict occurs in organizations because of the divergent perspectives, values, and goals (Rahim, 1986; Thomas, 1976). The proper management of conflict will contribute towards the prosperity of the organization. Conflict handling styles should encourage a commitment to help and care for others, enhance perspective-taking abilities, and improve communication and problem-solving skills (Sweeney & Carruthers, 1996). Individuals use various styles to handle conflicts, these styles vary from individual to individual.

Properly handling conflicts increases efficiency and commitment of organization at both individual and group levels (Tjosvold, 1998). Commitment is important for teachers because it reflects a personal interpretation of work experience as absorbing and meaningful. Organizational commitment is a significant factor in efforts to improve school outcomes, especially student academic achievement (Kushman, 1992). The styles a teacher adopts to manage conflict may influence the way they feel about their job and their relationship with other people and students. At last, it will indirectly give positive effects on the students' academic achievement. Therefore, for these reasons, this study

¹ Lecturer, Department of Educational Psychology, Sagaing University of Education

² Professor, Department of Educational Psychology, Sagaing University of Education

mainly aimed to examine the individual style of handling conflict and their impacts on organizational commitment.

Purpose of the Study

The main aim of the study was to examine the conflict handling styles and organizational commitment of teachers from basic education schools in Myanmar.

The specific objectives were as follows:

1. To explore the differences in conflict handling styles and organizational commitment of teachers by gender, age, designation and years of experience
2. To find out the relationship between conflict handling styles and organizational commitment of teachers

Literature Review

According to Thomas, K. & Kilmann, R. (1970), there were five styles of conflict handling; namely,

- 1) Competing– This style can be useful when a decision needs to be made quickly; when the decision is unpopular; or when defending against someone who is trying to exploit the situation selfishly. However it can leave people feeling bruised, unsatisfied and resentful when used in less urgent situations.
- 2) Accommodating– This style indicates a willingness to meet the needs of others at the expense of the person's own needs.
- 3) Avoiding– A person with this style will typically postpone dealing with a problem or sidestep dealing with it at all. In many situations this is a weak and ineffective approach to take.
- 4) Collaborating– This style is useful when you need to bring together a variety of viewpoints to get the best solution; when there has been a history of previous conflicts in the group; or when the situation is too important for a simple trade-off. Collaborating may take the form of exploring the disagreement in an open and frank way or trying to find creative solutions to a problem.
- 5) Compromising– The aim is to find some mutually acceptable solution which will partially satisfy the parties. Compromise is useful when the cost of conflict is higher than the cost of losing ground, when equal strength opponents are at a standstill and when there is a deadline looming. When people compromise, each person partially meets the other's demands.

In organizational commitment, Allen and Meyer (1997)'s three component organizational commitment model was widely used model. In this model, three components of organizational commitment were affective, continuance and normative commitment.

Affective commitment is “the employee's emotional attachment to, identification with, and involvement in the organization”. Affective commitment may encourage adherence to the expectations and values of organization (Meyer & Allen, 1997). Affective commitment is, in particular, important to organizations because of its effect on employee retention, productivity behavior, and well-being.

Continuance commitment is based on personal characteristics, other job alternatives and investments that are measured by factors such as transferable skills, formal education, self-investment and pensions (Allen & Meyer, 1990).

Normative commitment can also be explained as a sense of responsibility to continue employment with a specific organization (Meyer & Allen, 1997). Individuals with high levels of normative commitment stay with an organization because they feel it is the “morally right” thing to do for the organization. Normative commitment may be brought on by the desire to conform to normative pressures perceived by family and friends (Meyer & Allen, 1991).

Methodology

By using proportionate stratified sampling method, a total of 826 teachers from selected basic education schools in Sagaing Region, Chin State, Kayah State, Bago Region and Mon State were chosen as participants. Conflict handling styles of teachers were measured by using Rahim Organizational Conflict Inventory – II developed by Rahim (1983).

In measuring teachers' commitment on organization, Allen and Myers' (1990) Three-Component Organizational Commitment Scale and Organizational Commitment Questionnaire (OCQ) developed by Mowday, Steers & Porter (1979) were used. Design of the research is descriptive research design and survey method.

Data Analysis and Findings

Conflict Handling Styles of Teachers

The descriptive statistics corresponding to each style of conflict handling were reported in the following table.

Table 1 Descriptive Statistics for Conflict Handling Styles of Teachers

Variable	Minimum	Maximum	Mean	%	SD
Competing Style	8	26	16.21	17.05	2.25
Accommodating Style	20	51	36.31	38.25	3.16
Avoiding Style	13	27	18.71	19.68	1.84
Collaborating Style	8	20	14.31	15.04	1.48
Compromising Style	4	14	9.47	9.97	1.51

Results revealed that accommodating style is the most frequently used approach to conflict handling among teachers, with 38.25% of them reporting it as their dominant conflict handling style. It might be said that the 38.25% of teachers who had accommodating style possessed self-sacrifice style (sacrifice of self-interests to satisfy the needs of others). The smallest number of teachers (10%) is those who possessed intermediate concern for both self and others.

Relationship between Demographic Factors and Conflict Handling Styles

In this study, gender, age, designation and years of service will be computed as factors that were influencing conflict handling style.

Comparison for Conflict Handling Styles of Teachers by Gender

Regarding the gender, the means and standard deviations of conflict handling styles of teachers for both males and females were reported in Table 2.

Table 2 Conflict Handling Styles of Teachers by Gender

Variable	Gender	N	Mean	SD	t	p	Mean Difference
Competing Style	Male	86	16.14	2.43	-.31	.76	-.08
	Female	741	16.22	2.23			
Accommodating Style	Male	86	36.64	3.46	1.01	.31	.36
	Female	741	36.27	3.12			
Avoiding Style	Male	86	18.67	2.14	-.22	.82	-.05
	Female	741	18.72	1.81			
Collaborating Style	Male	86	14.08	1.33	-1.52	.13	-.26
	Female	741	14.34	1.5			
Compromising Style	Male	86	9.52	1.53	.30	.76	.05
	Female	741	9.47	1.51			

According to the Table 2, the slight differences of mean scores exist in all styles, but gender related significant differences were not found in conflict handling styles. Therefore, it can reasonably be said that teachers' conflict handling style did not depend on gender.

Conflict Handling Styles of Teachers by Age

To compare the conflict handling styles of teachers by age, descriptive statistics and one-way analysis of variance (ANOVA) was conducted. Concerning age, a significant variation of mean scores existed in two styles of conflict handling such as competing style and compromising style. There were no significant differences in accommodating, avoiding and collaborating styles. But, significant differences were found in competing style and compromising.

In addition, to examine the highly significant differences across age, Post Hoc Test was executed by Games-Howell method. The results were displayed in Table 3 and Table 4.

Table 3 Teachers' Conflict Handling Styles by Age

Variable	Age	N	Mean	SD	F	p
Competing Style	19-30 years	144	16.69	2.49	4.39	.013
	30-45 years	313	16.03	2.12		
	45-60 years	371	16.18	2.24		
Accommodating Style	19-30 years	144	36.72	3.35	1.44	.24
	30-45 years	313	36.26	3.22		
	45-60 years	371	36.20	3.02		
Avoiding Style	19-30 years	144	18.83	1.94	1.47	.23
	30-45 years	313	18.80	1.87		
	45-60 years	371	18.59	1.77		
Collaborating Style	19-30 years	144	14.49	1.41	1.39	.25
	30-45 years	313	14.25	1.56		
	45-60 years	371	14.30	1.44		
Compromising Style	19-30 years	144	9.77	1.49	3.48	.031
	30-45 years	313	9.39	1.52		
	45-60 years	371	9.47	1.51		

*The mean difference significant at the 0.05 level.

Table 4 The Result of Tukey Multiple Comparison for Conflict Handling Styles by Age

Variable	(I)Age	(J) Age	Mean Dif. (I-J)	p
Competing Style	19-30 years	30-45 years	.662*	.017
Compromising Style	19-30 years	30-45 years	.381*	.03
		45-60 years	.348*	.04

*The mean difference significant at the 0.05 level.

According to the above mentioned tables, it can be concluded that teachers whose age is between 19 and 30 years used competing style more than teachers whose age is between 30 and 45 years. Similarly, teacher whose age is between 19 and 30 years used compromising style more than teachers whose age is between 30 and 45 years and between 45 and 60 years.

Conflict Handling Styles of Teachers by Designation

Concerning the designation, there were differences in mean scores in four styles of conflict handling except avoiding style among primary, junior and senior teachers. The results were shown in Table 5.

Table 5 Teachers' Conflict Handling Styles by Designation

Variable	Designation	N	Mean	SD	F	p
Competing Style	Primary Teachers	128	16.23	2.51	3.54	.030
	Junior Teachers	422	16.41	2.24		
	Senior Teachers	278	15.95	2.10		
Accommodating Style	Primary Teachers	128	36.89	3.17	7.06	.001
	Junior Teachers	422	36.50	3.27		
	Senior Teachers	278	35.77	2.90		
Avoiding Style	Primary Teachers	128	18.75	1.84	.04	.956
	Junior Teachers	422	18.69	1.94		
	Senior Teachers	278	18.71	1.69		
Collaborating Style	Primary Teachers	128	14.41	1.69	7.54	.001
	Junior Teachers	422	14.47	1.46		
	Senior Teachers	278	14.04	1.37		
Compromising Style	Primary Teachers	128	9.36	1.64	4.33	.014
	Junior Teachers	422	9.62	1.48		
	Senior Teachers	278	9.29	1.48		

* The mean difference is significant at the 0.05 level.

In addition, to examine the highly significant differences across designation, Post Hoc Test was executed by Tukey HSD method.

Table 6 The Result of Tukey HSD Multiple Comparison for Conflict Handling Styles by Designation

Variable	(I) Designation	(J) Designation	Mean Difference (I-J)	p
Competing Style	Junior Teachers	Senior Teachers	.454*	.024
Accommodating Style	Primary Teachers	Senior Teachers	1.12*	.002
	Junior Teachers	Senior Teachers	.72*	.008
Collaborating Style	Primary Teachers	Senior Teachers	.38*	.043
	Junior Teachers	Senior Teachers	.43*	.000
Compromising Style	Junior Teachers	Senior Teachers	.33*	.015

According to the result of Tukey HSD, junior teachers possessed competing style than senior teachers. In accommodating style, primary and junior teachers had more use of accommodating style than senior teachers. Similarly, junior teachers possessed compromising style than senior teachers.

Conflict Handling Styles of Teachers by Years of Service

Looking across the years of service, no significant differences were found to be among teachers' conflict handling styles except compromising style. The results were described in Table 7.

Table 7 Teachers' Conflict Handling Styles by Years of Service

Variable	Years of Service	N	Mean	SD	F	p
Competing Style	Under 10 years	186	16.53	2.41	2.66	.070
	10-20 years	264	16.04	2.14		
	Above 20 years	378	16.18	2.23		
Accommodating Style	Under 10 years	186	36.42	3.41	.50	.606
	10-20 years	264	36.41	3.25		
	Above 20 years	378	36.19	2.96		
Avoiding Style	Under 10 years	186	18.81	1.85	2.54	.080
	10-20 years	264	18.86	1.92		
	Above 20 years	378	18.55	1.78		
Collaborating Style	Under 10 years	186	14.41	1.55	.93	.396
	10-20 years	264	14.35	1.52		
	Above 20 years	378	14.24	1.42		
Compromising Style	Under 10 years	186	9.74	1.46	3.88	.021
	10-20 years	264	9.38	1.55		
	Above 20 years	378	9.40	1.50		

Therefore, to examine the highly significant differences across years of service, Post Hoc Test was executed by Tukey HSD method and it became apparent that teachers whose years of service is under 10 years had higher use of compromising style than those whose years of service

is between 10-20 years. Similarly, teachers whose years of service is under 10 years had higher use of compromising style than those whose years of service is above 20 years. The results were shown in Table 8.

Table 8 The Result of Tukey HSD Test for Multiple Comparison of Conflict Handling Styles by Years of Service

Variable	(I) Years of Service	(J) Years of Service	Mean Difference (I-J)	p
Compromising Style	Under 10 years	10-20 years	.36*	.035
		Above 20 years	.34*	.031

* The mean difference is significant at the 0.05 level.

Organizational Commitment of Teachers

Table 9 Descriptive Statistics for Organizational Commitment of Teachers

Variable	N	Minimum	Maximum	Mean	SD
Organizational Commitment	828	33	147	110.68	9.57

Based on the descriptive statistics shown in Table 9, the mean score of organizational commitment was 110.68. Teachers in this study possessed high organizational commitment in their profession.

Comparison for Conflict Organizational Commitment of Teachers by Gender

Regarding the gender, the means and standard deviations of organizational commitment of teachers for both males and females were reported in Table 10.

Table 10 Organizational Commitment of Teachers by Gender

Variable	Gender	N	Mean	SD	t	p	Mean Difference
Organizational Commitment	Male	86	108.19	11.04	-2.57	0.01	-2.79
	Female	741	110.98	9.36			

According to the Table 10, differences in mean scores exist and a significant difference was found in organizational commitment across gender. Female teachers had higher organizational commitment than male teachers.

Organizational Commitment of Teachers by Age

To compare the organizational commitment of teachers by age, descriptive statistics and one-way analysis of variance (ANOVA) was conducted. Concerning age, no significant difference was found in organizational commitment of teachers as stated in Table 11.

Table 11 Teachers' Organizational Commitment by Age

Variable	Age	N	Mean	SD	F	p
Organizational Commitment	19-30 years	144	110.10	8.82	.62	.54
	30-45 years	313	110.50	10.34		
	45-60 years	371	111.06	9.18		

Organizational Commitment of Teachers by Designation

Concerning the designation, the slight variation of mean scores exists, but no significant was found in organizational commitment among primary, junior and senior teachers in this study. Therefore, it can reasonably be said that organizational commitment did not depend on designation (position in profession) in this study. The results were shown in Table 12.

Table 12 Teachers' Organizational Commitment by Designation

Variable	Designation	N	Mean	SD	F	p
Organizational Commitment	Primary Teachers	128	110.75	11.58	2.27	.104
	Junior Teachers	422	111.29	9.10		
	Senior Teachers	278	109.72	9.19		

Organizational Commitment of Teachers by Years of Service

Looking across the years of service, no significant difference was found to be among teachers' organizational commitment. The results were described in Table 13.

Table 13 Teachers' Organizational Commitment by Years of Service

Variable	Years of Service	N	Mean	SD	F	p
Organizational Commitment	Under 10 years	186	110.36	8.64	.71	.49
	10-20 years	264	110.29	10.74		
	Above 20 years	378	111.11	9.14		

Relation among Five Styles of Conflict Handling and Organizational Commitment

The correlation among five conflict handling styles and organizational commitment was shown in Table 14.

Table 14 Inter-Correlation among Five Styles of Conflict Handling and Organizational Commitment

Variable	Competing Style	Accommodating Style	Avoiding Style	Collaborating Style	Compromising Style	Organizational Commitment
Competing Style	-	-	-	-	-	-
Accommodating Style	.242** .000	-	-	-	-	-
Avoiding Style	.293** .000	.312** .000	-	-	-	-
Collaborating Style	.251** .000	.332** .000	.288** .000	-	-	-
Compromising Style	.430** .000	.230** .000	.172** .000	.285** .000	-	-
Organizational Commitment	.005 .891	.229** .000	.133** .000	.235** .000	-.071* .040	-

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The results showed that there were significant positive correlations with organizational commitment in accommodating, avoiding and collaborating styles. Competing style and organizational commitment were slightly significantly correlated. But, there was a negative correlation between compromising style and organizational commitment.

Regression Analysis for Prediction of Organizational Commitment from Conflict Handling Styles

A simple regression analysis was calculated for predicting teachers' organizational commitment based on their conflict handling styles. Regression analysis revealed that the model significantly explained organizational commitment, $F(5,822) = 20.82$, $p < .001$ and is statistically significant. According to the result, conflict handling styles contributed 11% of the variance to organizational commitment.

Table 15 Regression Analysis for Prediction of Organizational Commitment

Variables	B	β	t	p
(Constant)	76.976		16.493	.000
Competing Style	-.162	-.038	-.994	.320
AccommodatingStyle	.593	.189**	5.197	.000
Avoiding Style	.277	.053	1.462	.144
Collaborating Style	1.384	.214**	5.875	.000
CompromisingStyle	-1.079	-.169**	-4.525	.000

$P^{**} < 0.001$

By applying regression analysis, the resultant model for organizational commitment can be described in the following equation concerned with conflict handling styles.

$$\text{Organizational Commitment} = 76.976 + .593\text{AM} + .277\text{AV} + 1.384\text{CB} - .162\text{C} - 1.079\text{CP}$$

Where, C = Competing Style, AM = Accommodating Style, AV = Avoiding Style

CB = Collaborating Style and CP = Compromising Style

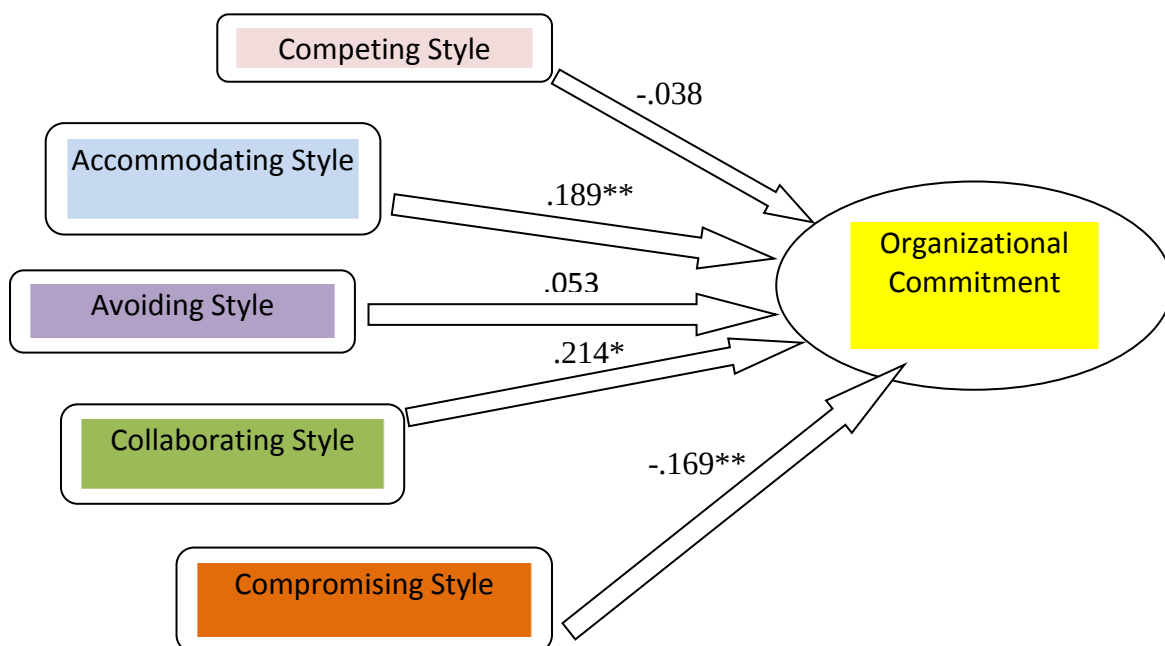


Figure 1 Relationship Between Five Styles of Conflict Handling and Organizational Commitment

Conclusion and Discussion

No single style of conflict handling is always appropriate. The choice of conflict style should be situationally dependent (King & Miles, 1990). In this study, teachers highly used accommodating style and least used in compromising style. But, many factors may influence the choice of conflict handling styles of people (eg. job stress, job satisfaction etc. besides individual characteristics). Moreover, conflict and organization are related factors in any organization. Properly handling conflicts increases efficiency and commitment of organization at both individual and group levels (Tjosvold, 1998).

Acknowledgements

First of all, I would like to offer my deepest and most sincere thanks to Dr. Saw Pyone Naing (Rector, Sagaing University of Education), and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) for giving the permission to conduct this study.

I would deeply like to express my respectful gratitude to Dr. Khin Hnin Nwe (Professor, Head of Department of Educational Psychology, Sagaing University of Education) for her essential suggestions and invaluable comments on this research. Lastly, I would like to express my sincere thanks to all the participants from basic education schools in selected States and Regions for their active participation for this research.

References

- Meyer, J.P., & Allen, N.J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1), 61-98.
- Meyer, J., & Allen, N. (1997). *Commitment in the Workplace: Theory, Research, and Application*. Sage Publications.
- Mowday, R.T., Steers, R.M., & Porter, L.W. (1979). The Measurement of Organizational Commitment. *Journal of Vocational Behavior*, 14, 224-247.
- Rahim, M. A. (1983). A Measure of Styles of Handling Interpersonal Conflict. *Academy of Management Journal*, 26, 368-376.
- Rahim, M. A. (1986). Referent Role and Styles of Handling Interpersonal Conflict. *Journal of Social Psychology*, 126, 79-86.
- Thomas, K. W. (1976). Conflict and conflict management. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology*. Chicago: Rand-McNally.

FACTORS INFLUENCING INTERNET ADDICTION OF UNIVERSITY STUDENTS IN MYANMAR

Khaing Nyein Thant¹, Nu Nu Khaing² and Moe Moe Naing³

Abstract

In this study, sequential explanatory design from quantitative and qualitative mixed approaches was used. Therefore, as the quantitative phase, survey was administered with 2612 university students chosen by multistage sampling technique. As the qualitative phase, individual semi-structured interview was administered with 20 severe internet addicts. Instruments were Revised UCLA Loneliness Scale (Russel, Peplau, & Ferguson, 1978), Student Stress Inventory (Mohamed-Arip, Kamaruaman, Roslan, Ahmad, & Rahman, 2015), Self-control Scale (Tangney, Baumeister, & Boone, 2004), Self-compassion Scale (Neff, 2003), Internet Addiction Test (Young, 1998) and interview questions. In this study, 28 in 100 university students were found to be internet addicts and it was relatively high in comparing with other countries. Therefore, meta-analysis study was firstly conducted to theoretically explore psychological factors influencing internet addiction of university students. Based on it and narrative literature review, four psychological factors (loneliness, stress, self-control, self-compassion) and one internet usage factor (online time) were chosen to empirically explore in Myanmar. According to the results of path-analysis, the best model fit was found among direct/indirect paths of online-time, stress, loneliness, self-control and self-compassion with internet addiction (76% variance explained). To provide more practical implications of this model, qualitative study was extended in this study and it could explain causes of these influencing factors. So, it is hoped this study to be of assistance in suggesting prevention and intervention programs for internet addiction among university students.

Keywords: Internet, Internet Addiction, Meta-analysis

Introduction

In Myanmar, the number of internet users has been significantly increasing day by day in recent years. In 2019, 21 million of Myanmar citizens (39 % of the population) became internet users (Internet World Stats, 2020).

Among these Myanmar internet users, almost all of them were found to have a social network account (Global Digital Report, 2019). So, it can be seen that Myanmar internet users are surfing internet mainly for social networking. Young (1996) stated that communication functions such as chats or Multi-User Dimensions were more vulnerable than search functions to internet addiction. Therefore, Myanmar internet users' excessive social media usage can lead to the possibility of internet addiction.

Together with growing internet users, excessive social media usage made the public of Myanmar to be worried about internet addiction disorder (Myers, 2013). However, there is little empirical research on the prevalence of internet addiction in Myanmar. Hence, this research was designed to fill this need of internet addiction research in Myanmar.

Globally, most of the internet addiction researches were conducted on student groups because they were found to be the vast majority of those with internet addictions (Lam, Peng, Mai & Ing, 2009; Milani, Blasio, & Osualdella, 2009; Thomas & Martin, 2010; Zboralski, et al., 2009). As well in Myanmar, the most significant addicted group that is affected by internet technology seems to be student groups. As a reporter of The Myanmar Times interviewed some workers of an internet café in Yangon, they said that most of their customers were students. During the reporter visited to that internet café, he also found that most people in that café were

¹ Dr, Lecturer, Department of Educational Psychology, Sagaing University of Education

² Dr, Professor, Department of Educational Psychology, Yangon University of Education

³ Dr, Professor, Department of Educational Psychology, Sagaing University of Education

students and it seemed they would not go to school (Myers, 2013). Therefore, this study focused on student groups to examine internet addiction prevalence in Myanmar.

Among students, Young and Rogers (1998) found university/college students to be more high risk group for internet addiction. Likewise, Thatcher and Gooloman (2005) also found that young internet users, between 19 to 24 years old, were more at risk of becoming internet addicts than older users. This is the same age range for those attending the university. Many studies also confirmed that university/college students are especially vulnerable to developing dependence on the internet (Kandell, 1998; Mafe & Blas, 2006; Nalwa & Anand, 2003; Niemz, Griffiths & Banyard, 2005).

For that reason, it is urgently needed to recognize and respond this problem for the educational researchers who should be the thinkers of science (Khin Zaw, 2001) in this cyber-age. Hence, the **very first purpose of this research** grew into examining internet addiction prevalence among university students in Myanmar.

After that, there were many questions that remain to be considered. Which factors made university students more addicted to the internet? How can effective strategies be developed for both prevention and intervention of internet dependency among university students?

To answer these questions, there was an urgent need for educational researchers to gain a comprehensive understanding of this phenomenon and to find out associated factors of internet addiction tendency among university students. Therefore, another major interest of this study became exploring factors influencing internet addiction of university students. To provide more precise information about that interest, this study aimed to use both theoretical and empirical ways.

As the theoretical framework, meta-analysis study on psychological factors influencing internet addiction among university students was designed to conduct and it led to **second major purpose of this study**.

Meta-analysis is a well-established form of synthesizing literature, and syntheses of meta-analyses are now being produced in educational research. It is a quantitative, formal and epidemiological design used to systematically assess the results of previous research for deriving conclusions about that body of research. Therefore, the researcher had to review previously published studies on psychological factors influencing internet addiction of university students, and then analyze the various results to find general trends across the studies.

Later, narrative literature review was theoretically conducted for exploring other related factors of internet addiction, such as demographic factors, family factors, university factors and internet usage factors, as well.

After combining the results of narrative literature review and meta-analysis study, researcher aimed to empirically find out factors influencing internet addiction tendencies among Myanmar university students as **the third major purpose of this study**. Then, a statistical model which can best predict internet addiction tendencies of university students is targeted to explore.

Therefore, it is hoped the current study to be supportive on university learning environment by providing basic information that can contribute to the development of prevention and intervention programs concerning internet addiction.

Objectives of the Research

The main aim of this study was to conduct a preliminary study on factors influencing internet addiction of university students in Myanmar. Specific objectives were as follows-

1. To investigate internet addiction prevalence of university students in Myanmar,
2. To construct a theoretical framework on factors influencing internet addiction among university students by meta-analysis technique and narrative review,
3. To empirically explore factors influencing internet addiction among university students in Myanmar and, develop a model which can best predict university students' internet addiction.

Definitions of Key Terms

Internet: Internet is a massive global network system which is created by linking computers or servers to access and convey information (Kraut, et al., 1998).

Internet Addiction: Internet addiction is defined as the overuse of the internet leading to impairment of an individual's psychological state (both mental and emotional), as well as their scholastic, occupational, and social interactions (Beard & Wolf, 2001).

Meta-analysis: Meta-analysis is the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings (Glass, 1976).

Materials and Method

Participants of the Study

By using multistage sampling procedure, 2612 (male = 989, female = 1623) university students in Myanmar were chosen for the quantitative study. The mean age of respondents of the present study was 18.18 years (SD=1.419), ranged from 16 to 26.5 years. For the qualitative study, by using purposeful sampling technique, 20 severe internet addicts were chosen based on their quantitative findings.

Design

In this study, sequential explanatory design from quantitative and qualitative mixed approaches was used.

Instrumentation

To collect the required quantitative data, five inventories were used in the present study. To measure loneliness of university students in Myanmar, the Revised UCLA Loneliness Scale (RULS) developed by Russel, Peplau and Ferguson (1978) was used and it included 20 items. Participants indicated how frequently they experience each item on a scale from 1 to 4. To measure stress of university students, Student Stress Inventory (SSI) developed by Mohamed Arip, Kamaruaman, Roslan, Ahmad and Rahman (2015) was used and it consisted of 40 items. All of these items are rated on a 4-point Likert scale. To assess self-control, the Self-control Scale (AS-36) developed by Tangney, Baumeister and Boone (2004) was used in this study. It consisted of 36 items which is scored based on 5-point Likert scale (1=never and 5=very much). To assess self-compassion, Self-compassion Scale (SCS) developed by Neff (2003) was used in this study. It included 26 items and responses were given on a 5-point scale from 1 (almost never) to 5 (almost always). To examine internet addiction, the most frequently used measure of internet addiction, Internet Addiction Test (IAT) developed by Young (1998), was used and it is composed of 20 items. Present study used the modified 6-point Likert scale and the cut-off

scores differentiate normal internet users (0–30) and users with mild (31–49), moderate (50–79) and severe internet addiction (80–100).

For face and content validity, an expert review was conducted by 14 experts in the field of Educational Psychology from Yangon University of Education and Sagaing University of Education (SUOE). In order to determine the reliability of the instruments, pilot testing was conducted with 105 students from Sagaing University of Education. The internal consistencies were 0.816 for Revised UCLA Loneliness Scale, 0.875 for Student Stress Inventory, 0.831 for Self-control Scale, 0.888 for Self-compassion Scale and 0.892 for Internet Addiction Test. The administration process for all the inventories approximately took about 30 to 45 minutes.

For the qualitative phase, the interview was intended to conduct individually in a semi-structured format. To illicit spontaneous and genuine responses, interview protocol was initially developed based on internet addiction test and preliminary analysis of the quantitative data and tested it prior to actual interviews. During interviewing, with the participants' permission, interviews were audio-recorded. Participants were asked a series of opening questions concerning the participants' experiences on the causes of their loneliness, stress, self-compassion and self-control.

Findings

Internet Addiction Prevalence of University Students in Myanmar

The following table showed internet addiction prevalence among university students in Myanmar.

Table 1 Prevalence of Internet Addiction among University Students in Myanmar

Categories	Frequency	Percentage
Normal Internet Users (0-30)	864	33.08%
Mild Internet Addiction (31-49)	1028	39.36%
Moderate Internet Addiction (50-79)	670	25.65%
Severe Internet Addiction (80-100)	50	1.91%
Total	2612	100%

According to Table 1, it was found that, off the 2612 respondents who fully complete the survey, 720 (27.57%) university students in Myanmar met the criteria of internet addiction.

Results of Meta-analysis Study

Identification and Selection of Studies. By using the flow diagram of Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA, 2009), searches for needed studies were conducted by using multiple search engines, including Google, Google Scholar and Academia. On these search engines, the following combinations of keywords were entered: (a) factors affecting internet addiction, (b) factors influencing internet addiction, (c) related factors of internet addiction, (d) predictors of internet addiction, and (e) determinants of internet addiction.

As the first step, a total of 1818 studies were found. After removing (1114) duplicated records, the titles and abstracts of the remaining (704) articles were screened. Among them, 537 records were found to be obviously irrelevant with the present study. So, 167 potentially relevant studies were reserved and their full texts were reviewed via different criteria.

Inclusion criteria set for the present study were: (a) Being an original, free and published research paper; (b) Studies that were write out in English Language only; (c) Studies for both male

and female university students who were not meeting other mental-problem criteria, except internet addiction disorder; (d) Studies that used an acceptable definition of internet addiction; (e) Studies that examine at least one psychological factor of internet addiction; (f) Studies that provide enough information to permit a calculation of effect size. Among the 167 studies originally recognized by the literature search, 136 were excluded for not meeting the above-mentioned inclusion criteria. Therefore, total of 31 studies met the criteria for inclusion in conducting the present meta-analysis study.

Coding of Study Variables. Studies were identified and coded by the researcher.

Meta-analysis Procedures. In this study, psychological factors influencing internet addiction of university students were explored by computing combined effect sizes and conducting homogeneity analyses with the use of Meta Essential Software (Version 1.00).

Study Characteristics. Thirty one studies selected for the meta-analysis included sample ranging from 60 (Romano, Osborne, Truzoli, & Reed, 2013) to 4388 (Rabadi, et al., 2017). The total combined sample of all selected studies was 24424 participants, of whom 5767 (23.6%) belonged to internet addicts groups. Most of the studies were from Asian countries. All the studies were published in journals and utilized a cross-sectional design. In addition, all the studies reported participant samples of mixed socioeconomic status.

All studies relied on self-report. Measures of internet addiction varied across studies. In the present studies, 7 inventories were found to measure internet addiction of university students. They were Internet Addiction Test (IAT), Turkish Version of Internet Addiction Scale, Young's Diagnostic Questionnaire (YDQ), Online Cognition Scale (OCS), Young's Internet Addiction Test-Short Form (YIAT-SF), Young's Internet Addiction Questionnaire (YIAQ), Internet Addiction Scale (26-items). Among them, the most frequently used scale was Young's Internet Addiction Test (IAT) and it was used by 68% of the 31 studies.

Risk Factor Estimates. Risk factors were defined as variables that were associated with an increased risk of internet addiction. Table 2 showed average corrected effect-size statistics for 35 variables related to risk factors for internet addiction among university students.

Table 2 Risk Factors of Internet Addiction Among University Students

No	Variables	k	r	95% CI	Q _w
1	Self-judgment	1	0.67**	[0.60, 0.73]	-
2	Over Identification	1	0.53**	[0.40, 0.59]	-
3	Maladaptive Personality Trait	1	0.50**	[0.42, 0.58]	-
4	Stress	4	0.48***	[0.30, 0.63]	148.82*** (3)
5	Depression	15	0.46***	[0.35, 0.56]	1742.08*** (15)
6	Social Anxiety	1	0.43**	[0.34, 0.51]	-
7	Isolation	1	0.42**	[0.31, 0.52]	-
8	Austim Trait	1	0.4***	[0.16, 0.60]	-
9	Schizotypal Impulsive Nonconformity	1	0.39**	[0.15, 0.59]	-
10	Anxiety	9	0.38***	[0.26, 0.48]	517.82*** (8)
11	Shame	1	0.32**	[0.24, 0.40]	-
12	Psychoticism	1	0.32**	[0.28, 0.36]	-
13	Trait Anxiety	1	0.30*	[0.04, 0.52]	-
14	Insomnia	1	0.27***	[0.19, 0.34]	-

No	Variables	k	r	95% CI	Q _w
15	Schizotypal Cognitive Organization	1	0.26 [*]	[0.00, 0.49]	-
16	Negative Mood	1	0.26 [*]	[0.00, 0.48]	-
17	Somatization	1	0.25 [*]	[0.19, 0.31]	-
18	State Anxiety	1	0.24	[-0.02, 0.47]	-
19	Loneliness	5	0.23 [*]	[0.06, 0.38]	38.97 ^{***} (4)
20	Positive Mood	1	0.23	[-0.04, 0.46]	-
21	Schizotypal Introverted Anhedonia	1	0.23	[-0.03, 0.46]	-
22	Schizotypal Unusual Experience	1	0.22	[-0.04, 0.45]	-
23	Self-contempt	1	0.21 ^{**}	[0.14, 0.26]	-
24	Neuroticism	4	0.20 [*]	[0.15-0.24]	6.65 (3)
25	Personality Type A and B	1	0.19 ^{**}	[0.09, 0.30]	-
26	Willingness to Self-censor	1	0.16 ^{**}	[0.05, 0.26]	-
27	Psychopathy	1	0.14	[0.07, 0.20]	-
28	Paranoia	1	0.14	[0.08, 0.20]	-
29	Impulsivity	1	0.13	[0.07, 0.19]	-
30	Psychological Morbidity	1	0.12 ^{**}	[0.07, 0.17]	-
31	Dependence	1	0.11	[0.05, 0.17]	-
32	Interpersonal Assault	1	0.11	[0.05, 0.17]	-
33	Obsessive Compulsive	1	0.10	[0.04, 0.16]	-
34	Interpersonal Withdrawal	1	0.08	[0.02, 0.14]	-
35	Psychosexual Disorder	1	0.07	[0.01, 0.13]	-

Note: k = Number of independent correlation; r = Weight average of the sample correlation

95% CI = 95% Confidence interval; Q_w = Heterogeneity of effect size

According to Table 2, it was found that, self-judgment was a significant risk factor of internet addiction, with the very large effect size ($r=0.67$) in Cohen's range. Then, over identification and maladaptive personality trait were also significant risk factors for internet addiction, with large effect sizes ($r=0.53$ and $r=0.50$, respectively) according to Cohen (1988). For stress and depression ($r=0.48$ and $r=0.46$, respectively), the effect size analysis also showed that they are strong significant predictors for internet addiction with large effect sizes but the result showed heterogeneous effects. Therefore, additional subgroup analysis was needed to analyze these studies.

Moreover, there were also many risk factors influencing internet addiction with effect sizes in Cohen's medium to large range. These factors are social anxiety ($r=0.43$), isolation ($r=0.42$), autism trait ($r=0.4$), schizotypal impulsive nonconformity ($r=0.39$), and anxiety ($r=0.38$). Additionally, fourteen variables were found to be risk factors for internet addiction with medium effect sizes. These factors are arranged in order of decreasing effect size as follows: shame ($r=0.32$), psychoticism ($r=0.32$), trait anxiety ($r=0.30$), insomnia ($r=0.27$), schizotypal cognitive organization ($r=0.26$), negative mood ($r=0.26$), somatization ($r=0.25$), state anxiety ($r=0.24$), loneliness ($r=0.23$), positive mood ($r=0.23$), schizotypal introverted anhedonia ($r=0.23$), schizotypal unusual experience ($r=0.22$), self-contempt ($r=0.21$) and neuroticism ($r=0.20$). Among these fourteen risk factors, the effect size analysis showed that neuroticism factor was a significant risk factor with homogeneous effect on internet addiction.

And, loneliness factor was a significant risk factor for internet addiction with heterogeneous effects. Therefore, the characteristics of these studies will need to analyze to examine additional moderator variables for internet addiction.

Other remaining variables were found as insignificant risk factors for internet addiction with only small effect sizes, except, “personality type A and B,” “willingness to self-censor” and “psychological morbidity”, which can predict internet addiction with small effect sizes.

Protective Factor Estimates. Protective factors prevent or reduce vulnerability of the development of internet addiction. Table 3 showed weighted average correlations and homogeneity analysis of protective factors.

Table 3 Protective Factors of Internet Addiction Among University Students

No	Variables	k	r	95% CI	Q _w
1	Self-kindness	1	-0.41 ^{**}	[-0.51, -0.30]	-
2	Mindfulness	1	-0.36 ^{**}	[-0.46, -0.25]	-
3	Self-control	1	-0.32 ^{**}	[-0.39, -0.25]	-
4	Common Humanity	1	-0.30 ^{**}	[-0.41, -0.18]	-
5	Self-esteem	2	-0.27 ^{***}	[-0.28, -0.25]	0.26 (1)
6	Conscientiousness	3	-0.24 ^{***}	[-0.29, -0.18]	2.71 (2)
7	Agreeableness	3	-0.19 ^{***}	[-0.23, -0.16]	0.98 (2)
8	Life Satisfaction	1	-0.13 [*]	[-0.25, 0.00]	-
9	Extraversion	4	-0.12 [*]	[-0.20, -0.04]	5.87 (2)

Note: k = Number of independent correlations ; r = Weight average of the sample correlation

95% CI = 95% Confidence interval; Q_w = Heterogeneity of effect size

Among these protective factors, self-kindness and mindfulness factors were the protective factors for internet addiction, with effect sizes in Cohen’s medium to large range ($r=0.36$ to 0.45). Self-control ($r= -0.32$), common humanity ($r= -0.30$), self-esteem ($r= -0.27$) and conscientiousness ($r= -0.24$) were also significant protective factors for internet addiction with medium effect size according to Cohen (1988). Among them, self-esteem and conscientiousness showed homogeneous effects on internet addiction. The last three factors, agreeableness, extraversion and life satisfaction were also significant protective factors for internet addiction, but with small effect sizes. Among them, agreeableness and extraversion had homogeneous effect on internet addiction.

Result of Quantitative Study

Based on meta-analysis and narrative review, one internet usage factor (online time) and four psychological factors (loneliness, stress, self-control, and self-compassion) were chosen.

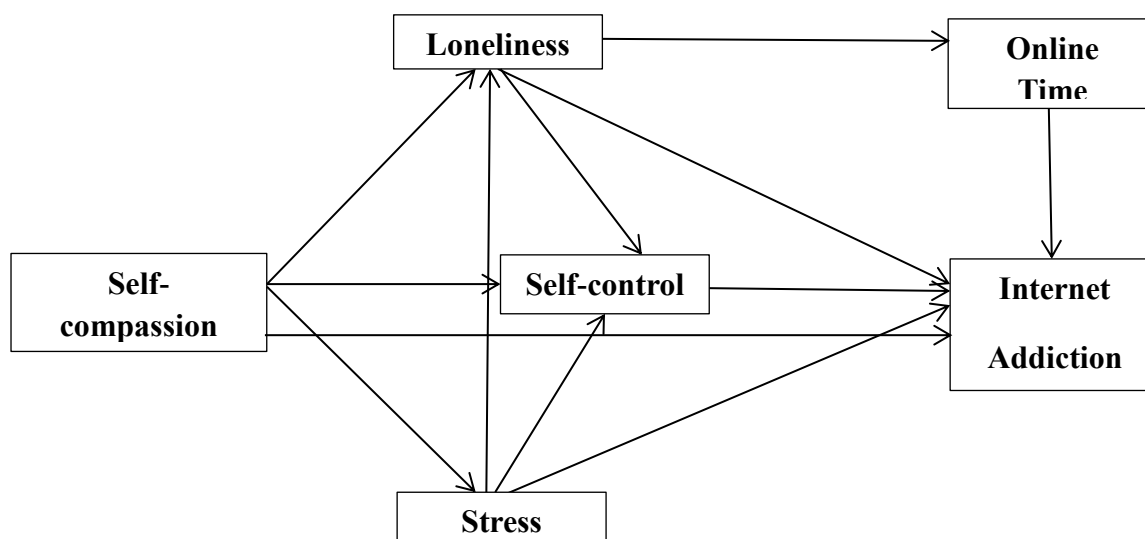


Figure 1 Conceptual Model of the Present Study

The conceptual model was found to be ill-fitting; hence model modification was done until a parsimonious model with satisfactory fit was obtained. The most plausible model is shown in Figure 2. In this model, all the comparative fit indices (TLI>.9, CFI >.9, RAMSEA<.08) were within the acceptability criteria, and all the linkages were explainable within the theoretical framework.

Table 3 Summary of All Fit Index for the Path Model

Fit Indexes	Ideal Standards	Observed Values
RMSEA	< 0.1	0.038
TLI	> 0.9	0.959
CFI	> 0.9	0.976

Then, the direct and indirect effects between variables were presented in Table 4.

Table 4 Summary of Causal Effects for the Path Model (Internet Addiction)

Outcomes	Determinant	Causal Effects		
		Direct	Indirect	Total
Online Time (R ² = .015)	Loneliness	.124***	-	.124***
	Stress	-	.048***	.048***
	Self-compassion	-	-.054***	-.054***
	Self-control	-	-	-
	Internet Addiction	-	-	-
Loneliness (R ² = .316)	Online Time	-	-	-
	Stress	.383***	-	.383***
	Self-compassion	-.291***	-.147***	-.437***
	Self-control	-	-	-
	Internet Addiction	-	-	-

Outcomes	Determinant	Causal Effects		
		Direct	Indirect	Total
Stress (R ² = .147)	Online Time	-	-	-
	Loneliness	-	-	-
	Self-compassion	-.383***	-	-.383***
	Self-control	-	-	-
	Internet Addiction	-	-	-
Self-control (R ² = .351)	Online Time	-.180***	-	-.180***
	Stress	-.140***	-.056***	-.196***
	Loneliness	-.123***	-.022***	-.146***
	Self-compassion	.404***	.117***	.522***
	Internet Addiction	-	-	-
Internet Addiction (R ² = .347)	Online Time	.199***	.069***	.269***
	Stress	.181***	.108***	.289***
	Loneliness	.060***	.081***	.141***
	Self-compassion	-	-.308***	-.308***
	Self-control	-.386***	-	-.386***

Note: *** denotes significant paths at $p < .001$.

According to the result of path analysis, time spent online had significant direct effect on internet addiction, and also significant indirect effect on internet addiction through self-control as a mediator. The total effect of time spent online on internet addiction is 0.269. It was also found that loneliness had significant direct effect on internet addiction, and also significant indirect effect on internet addiction through self-control as a mediator. The total effect of loneliness on internet addiction is 0.141. Likewise, stress had significant direct effect on internet addiction and also significant indirect effect on internet addiction through self-control and loneliness as mediators. Total effect of stress on internet addiction is 0.289.

Among the related factors, self-control had only the direct effect on internet addiction and its effect is highest 0.386. Moreover, self-compassion had only indirect effect on internet addiction, it takes a role of complete mediation and its effect is 0.308.

Totally, 76 % of the variance in internet addiction can be explained by the path model.

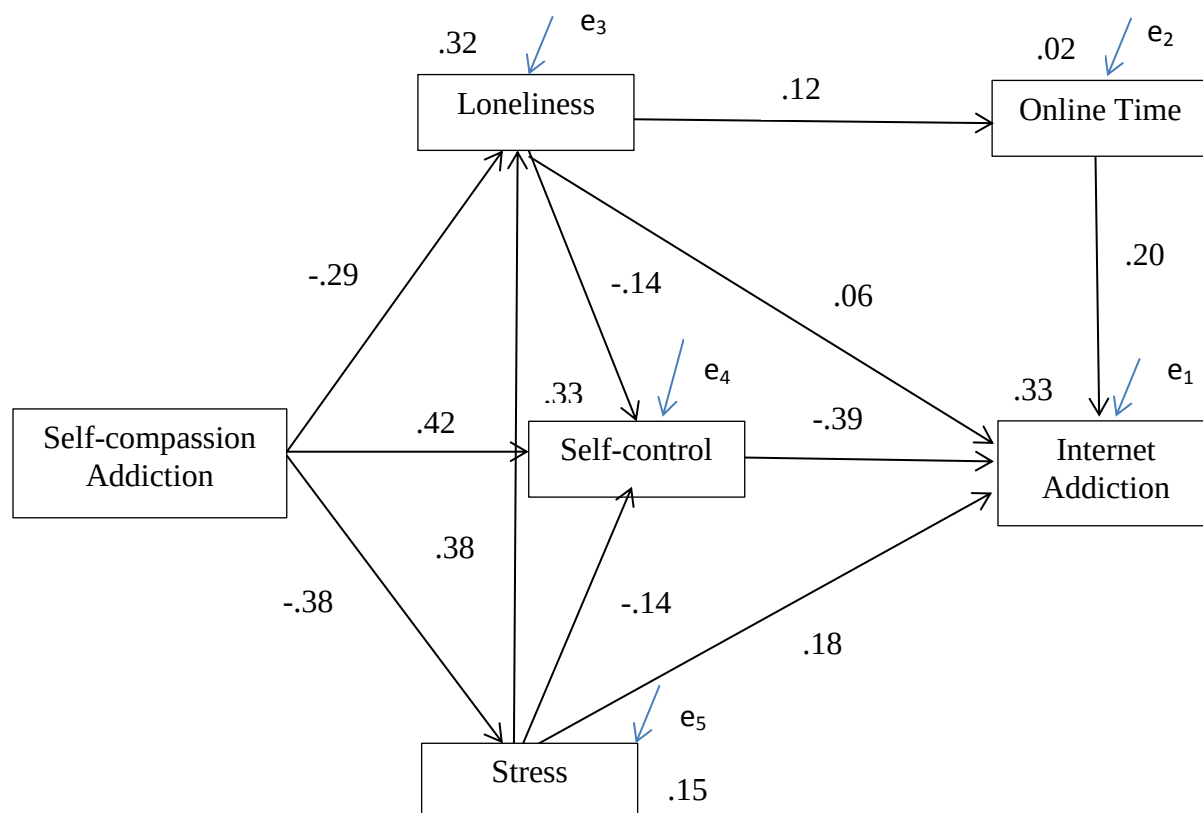


Figure 2 Empirical Model of the Present Study

Result of Qualitative Study

To provide more practical implications of the empirical model, qualitative study was extended in this study and it could explain causes of these influencing factors.

Table 5 Maximum Internet Usage Period Among Internet Addicts

	Maximum Internet Usage Period	Frequency
1	When they are lonely	12
2	When they feel stressful	11
3	When they had great amount of spare time	9
4	When they started university life	9
5	When they started using internet	6
6	When there is something interesting in virtual world	1

Table 6 Minimum Internet Usage Period Among Internet Addicts

No	Minimum Internet Usage Period	Frequency
1	At home	14
2	When they are busy with lessons and exam	4
3	When they decided to cut down internet usage	3
4	When something is interesting in real world	1

According to Table 5 and 6, it was found that most respondents had maximum online time when they were stressful and lonely. But they had minimum online time when they were at home because their parents restricted their internet use at home.

Table 7 Causes of Loneliness Among Internet Addicts

Causes of Loneliness		Frequency	%
Have Few Friends	Insecure Attachment with Parents	7	35%
	Shyness	2	10%
	Victimization (Traumatic Childhood Experience)	1	5%
	Loss of Parents (Traumatic Childhood Experience)	1	5%
Have a Large Number of Friends, But	Experiencing Low Quality of Friendships	3	15%
	Transition to Higher Education	3	15%
	Having Psychologically Controlling Parents	1	5%
	Loss of Romantic Partner	1	5%
	Having Less Interest in School Activities	1	5%

It was found that 55% of internet addicts were lonely since they had few friends. Concerning the reason why they had few friends, it was found that most of respondents experienced insecure attachment with their parents. According to psychodynamic theory of loneliness, early insecure attachments seem to contribute inadequate interaction skills and further problems that manifest as difficulties in creating friendships and lead to loneliness.

Then, 45% of respondents stated that they were lonesome though they had a large number of friends because of low quality friendship. Their friends were online all the time and made them emotional loneliness. As another reason, they were lonesome when they were freshmen. Concerning it, previous studies also stated that college students may experience different challenges and stressors which they will have to learn to cope with; if they do not develop such efficient coping mechanisms, greater levels of loneliness may emerge as a result (Brandy, Penckofer, Solari-Twadell, & Velsor-Friedrich, 2015).

Table 8 Causes of Stress Among Internet Addicts

No	Causes of High Stress	Frequency
1	Academic Stress	15
2	Interpersonal Stress	14
3	Environmental Stress	8
4	Stress for Future Job	3
5	Stress concerned with Accidental Case	1
6	Failure Stress	1

According to Table 8, it was found that most of the internet addicts experienced academic stress. Concerning the reasons why they had academic stress, most of the respondents answered that they felt nervous delivering the classroom presentation because of their problematic social anxiety. Some respondents said that they experienced academic stress because they dismissed their classes for surfing internet excessively.

Then, it was also found that fourteen of twenty internet addicts experienced interpersonal stress. Concerning the reasons, most of respondents said that they felt guilty if they fail to fulfill their parent's hope. Other respondents said that they felt interpersonal stress since they found difficult to get along with their roommates or classmates.

Table 9 Causes of Low Self-control Among Internet Addicts

No	Causes of Low Self-control	Frequency	%
1	Parenting Styles	8	40%
2	Stressful Experience and Unsuccessful Coping	6	30%
3	Peer Influence	4	20%
4	loneliness	2	10%
	Total	20	100%

According to Table 9, it can be seen that 40% of the respondents perceived parenting styles as the major cause of their self-control level. Other studies have also shown that parenting styles affect the level of self-control in adolescents (Abedini, Samani, Kadkhodaei, 2011; Abedini, Zamani, Kheradmand, & Rajabizadeh, 2012).

Then, 30% of the respondents stated that experiencing stressful events and unsuccessful/successful coping made their self-control level high or low. Prior studies also provided support for the prediction that stress impairs self-control (Swearingen & Cohen, 1985; Schwartz & Proctor, 2020; McCarthy et al., 2006).

Table 10 Causes of Low Self-compassion Among Internet Addicts

No	Causes of Low Self-compassion	Frequency	%
1	Family Functioning	11	55%
2	Social Connectedness	6	30%
3	Poor Reading Habit	3	25%
	Total	20	100%

It can be seen that 55% of the respondents perceived family function as the major cause of their self-compassion level. Among the respondents, 30% of the students accused social connectedness as major cause of their self-compassion level.

Conclusion

Theoretical and Practical Implications of this Study

Internet provides many positive effects to this world, and on the other hand, the risk of internet addiction became a new and rapidly growing phenomenon, especially for university students. If this phenomenon continues without any solution then internet addiction will become very serious and serious. Thus, it is needed for every community to recognize and respond to the threat of its rapid expansion. By examining the internet addiction prevalence of university students in Myanmar, this study provided the public the information how serious internet addiction among Myanmar university student was.

To respond its threat, through the meta-analysis study and empirical model which can predict internet addiction tendencies of university students, the present study found out why university students became more vulnerable groups for internet addiction. This study contributes to the development of an empirical model which can explain 76% variance on internet addiction of modern day university students. Hopefully, the findings of this study could be innovative and serve as a basic foundation for more effective promotion of mental health and preventing mild psychosis or cyberspace bred psychotic breaks.

Finally, the researcher would like to firmly assert that this pioneering research project aims to strike a certain balance between technophobic students and their university colleagues exhibiting ample signs of infomania. This, hopefully, would help to inhibit the present state of IT

immersion or internet addiction, resulting in sound mentally healthy, well-adjusted, and able university students with appropriate technosavvy or internet expertise.

Acknowledgements

Firstly, we would like to offer respectful gratitude to Professor Dr. Khin Zaw (Retired Rector, Yangon University of Education), Professor Dr. Aye Aye Myint (Retired Rector, Yangon University of Education), Dr. Myo Tint (Retired Pro-Rector, Yangon University of Education), Dr. Nu Nu Win (Retired Professor and Head, Department of Educational Psychology, Sagaing University of Education), Dr. Naing Naing Maw (Professor and Head, Department of Educational Psychology, Yangon University of Education) and Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Sagaing University of Education) who gave invaluable suggestions to us in conducting this research paper. Moreover, we would also like to thank all of first year and third year university students in Myanmar for their cooperation in data collection of this study.

References

- Abedini, Y., Zamani, B. E., Kheradmand, A., & Rajabizadeh, G. (2012). Impacts of mothers' occupation status and parenting styles on levels of self-control, addiction to computer games, and educational progress of adolescents. *Addiction & Health*, 4, 102-110.
- Beard, K. W., & Wolf, E. M. (2001). Modification in the proposed diagnostic criteria for Internet addiction. *Cyber psychology Behavior*, 4, 377-383.
- Brandy, J. M., Penckofer, S., Solari-Twadell, P. A., & Velsor-Friedrich, B. (2015). Factors predictive of depression in first-year college students. *Journal of Psychosocial Nursing*, 53(2), 38-44.
- Glass, G. V. (1976). Primary, secondary, and meta-analysis of research. *Educational Researcher*, 5, 3-8.
- Global Digital Report (2019). We are social. December 20, 2019. Retrieved from <https://wearesocial.com/global-digital-report-2019>
- Internet World Stats. (2020). World internet users statistics and 2020 world population stats. June 26, 2020. Retrieved from <https://www.internetworldstats.com/ststs.htm>
- Kandell, J. J. (1998). Internet addiction on campus: The vulnerability of college students. *Cyberpsychology. Behavior*, 1(1), 11-17.
- Khin Zaw, Dr. (2001). *Advanced Educational Psychology*: Ph.D / M.Ed. Research References, YIOE: Yangon.
- Kraut, R., Lundmark, V., Patterson, M., Kiesler, S., Mukhopadhyay, T., & Scherlis, W. (1998). Internet paradox: a social technology that reduces social in-volvement and psychological well-being? *American Psychologist*, 53, 1017-1031.
- Lam, L. T., Peng, Z. W., Mai, J. C., & Ing, J. (2009). Factors Associated with Internet Addiction among Adolescents. *Cyber psychology and Behavior*, 12 (5), 551-555.
- Mafe, C. R., & Blass, S. S. (2006). Explaining Internet dependency: An exploratory study of future purchase intention of Sapanish Internet users. *Internet Research*, 16 (4), 380-397.
- Mayer, C. (2013, February 11). Online addictions: is Myanmar at risk? *Myanmar Times*, p-2.
- Milani, L., Di Blasio, P., & Osualdella, D. (2009). Quality of interpersonal relationships and problematic Internet use in adolescence. *Cyberpsychology and Behavior*, 12(6), 681-684.
- Mohamed-Arip, M. A. S., Kamaruaman, D. N., Roslan, A., Ahmad, A., & Rahman, M. R. Abd. (2015). Development, Validity and Reliability of Student Stress Inventory (SSI). *The Social Science*, 10, 1631-1638.
- Nalwa, K., & Anand, A. P. (2003). Internet Addiction in Students: A Cause of Concern. *Cyberpsychology and Behavior*, 6 (6), 653-656.
- Neff, K. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, 2, 85-101.
- Niemz, K., Griffiths, M., & Banyard, P. (2005). Prevalence of pathological internet use among university students and correlations with self-esteem, the General Health Questionnaire (GHQ), and disinhibition. *Cyberpsychology and Behavior*, 8(6), 562-570.

- Rabadi, L., Ajlouni, M., Masannal, S., Bataineh, S., Batarseh, G., Yessin, A., Haddad, K., Nazer, M. K., Hmoud, S. A., & Rabadi, G. (2017). The Relationship between Depression and Internet Addiction among University Students in Jordan. *Journal of Addiction Research & Therapy*, 8(6), 342-355.
- Russell, D., Peplau, L. A., & Ferguson, M. L. (1978). Developing a measure of loneliness. *Journal of Personality Assessment*, 42 (3), 290-294.
- Schwartz, D. & Proctor, L. J. (2000). Community violence exposure and children's social adjustment in the school peer group: the mediating roles of emotion regulation and social cognition. *J. Consult. Clin. Psychol*, 68, 670-683.
- Swearingen, E. M. & Cohen, L. H. (1985). Life events and psychological distress: a prospective study of young adolescents. *Dev. Psychol*, 21, 1045-1054.
- Tangney, P. J., Baumeister, F. R., & Boone, L. A. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72 (2), 222-234.
- Thomas, N. J., & Martin, F. H. (2010). Video-arcade game, computer game and internet activities of Australian students: Participation habits and prevalence of addiction. *Australian Journal of Psychology*, 62(2), 59-66.
- Young, K. S. (1998). Internet Addiction: The emergence of a new clinical disorder. *Cyberpsychology, Behavior, and Social Networking*, 1(3), 237-244.
- Young, K. S., & Rodgers, R. C. (1998) "Internet addiction: personality traits associated with its development". *Paper presented at the 69th Annual Meeting of the Eastern Psychological Association*. Retrieved from <http://www.netaddiction.com/articles/personality/correlates.pdf>.
- Zboralski, K., Orzechowska, A., Talarowska, M., Darmosz, A., Janiak, A., Janiak, M., & Gałeczki, P. (2009). The prevalence of computer and Internet addiction among pupils. *Postepy Hig Med Dosw*, 2(63), 1-8.

A STUDY ON SOCIAL EMOTIONAL COMPETENCE AND SCHOOL ADJUSTMENT OF ADOLESCENTS

Aye Aye San¹, Khin Hnin Nwe²

Abstract

The main aim of this study is to investigate the social emotional competence and school adjustment of adolescents. Descriptive research design and survey method was used in this study. A questionnaire was used to collect demographic information of the participants such as gender, grade, parents' education and job. The Social Emotional Competence Questionnaire (SECQ, Zhou. M. & Ee. J, 2012) was used in measuring adolescents' social emotional competence. SECQ including 25 items was used and it consists of five competent: self-awareness, social awareness, self-management, relationship management and responsible decision-making. This questionnaire consisting 25 items equally involved five items of each component. "Adjustment Inventory for school students (AISS)" constructed by A.K.P. Sinha and R.P. Singh (2004) was used in measuring adolescents' school adjustment. AISS consists of 60 items. This research was investigated participants of Grade-6 and Grade-8 students. A total of 600 students from public schools (300males and 300 females) was randomly selected from the townships in Mandalay District. The result of this study revealed that there was no significant difference in social emotional competence but there was significant difference school adjustment by gender and grade. Moreover, students were not significant in social emotional competence by father's education, father job and mother job. But, students were significant different in social emotional competence by mother education. Besides, students were no significant difference by parents' education and parents' job. The findings also revealed that there was a significant positive relationship between students' social emotional competence and school adjustment. Students' social emotional competence should be increased with the help of parents, teachers and students themselves so that they might perceive better adjustment in their school and achieve higher success in their life.

Keywords: Social emotional competence, School adjustment, Adolescents

Introduction

Importance of the Study

School has become one of the main responsibilities of education. Developing the capacity to understand, appreciate, and communicate meaningfully with others is an important and desirable goal of education. Adolescents spend most of their time in school. School supports adolescent students to adjust to physical, psychological, and social changes by providing a well-formed educational curriculum. Adjustment to school predicts the adolescents' accomplishment in their academic, psychological, and social growth, and even their future success (Park, 2006). Therefore, how adolescents' social emotional competence affects their school adjustment has become an interesting field to study.

Adjustment is a continual process in which a person varies his behavior to produce a more harmonious relationship between himself and his environment (Gates and Jersild, 1948). School adjustment has been referred to as the outcome associated with the demands of adapting to the school environment (Ladd, 1990). Ladd (1990) believe that this outcome is affected by the level of academic success and also the degree of comfort and involvement demonstrated by the child in his/her classroom setting (cited in Caverly, 1997).

In recent years social emotional learning (SEL) has become an important element in basic education that has drawn the attention of educators and researchers. SEL is a process whereby children and adults acquire the knowledge and skills required to function effectively in various social contexts. It is related to five core competencies, namely the acquisition of skills to recognize and manage emotions, develop care and concern for others, make responsible

¹ Lecturer, Department of Educational Psychology, Sagaing University of Education

² Dr, Professor & Head, Department of Educational Psychology, Sagaing University of Education

decisions, establish positive relationships, and handle challenging situations effectively (CASEL, 2003). The development of social emotional competence (SEC) as an outcome of SEL is believed to enable learners to acquire the ability to self-monitor their behaviors and self – regulate their learning (Wilson, Gottfredson, & Najaka, 2001; Zins, Weissberg, Wang, & Walberg, 2004). Consequently, curriculum designers and researchers are keen to devise intervention programs with the purpose of enhancing SEC.

Social-emotional indicators, including positive interactions with teachers, positive representations of self-derived from attachment relationships, emotion knowledge, emotion regulatory abilities, social skills, and no rejected peer status, often uniquely predict academic success when other pertinent variables, even earlier academic success, have been controlled for (Denham, Blair & Queenan, 2003; DiPrete & Jennings, 2011).

Social-emotional competence refers to a set of related constructs and includes the skills, knowledge, and attitudes necessary to understand and manage emotions, develop and maintain positive relationships, and make responsible decisions and includes analytical, communication, and collaborative skills (Weissbergetal., 2015). Social-emotional competence is organized into interrelated sets of cognitive, affective, and behavioral competencies, five core competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Durlak et al., 2011; Skald et al., 2012).

Aim of the Study

The main aim of this study is to investigate the effect of the social emotional competence on the school adjustment of adolescents. The specific objectives are:

1. To examine social emotional competence and school adjustment of the adolescents,
2. To find out the differences in social emotional competence of adolescents by gender, and grades, the parents' job and education,
3. To evaluate the differences in school adjustment of adolescents through gender, grades, and the parents' job and education.
4. To investigate the relationship between social emotional competence and school adjustment of adolescent.

Definitions of Key Terms

Social Emotional Competence: Social emotional competence is defined one of the most significant areas of early learning and development (Goldman, Joshi, Nasim, & Tyler, 2015). Social emotional competence refers to a set of related constructs and includes the skills, knowledge, and attitudes necessary to understand and manage emotions, develop and maintain positive relationships, and make responsible decisions

Adolescent (noun): the person at the adolescence stage of life. In this study, eleven to sixteen year old adolescents were studied (APA Dictionary of Psychology).

School Adjustment: School adjustment is the process of adapting to the role of being a student and to various aspects of the school environment.

Review of Related Literature

The Bar-On Model of Emotional-Social Intelligence (ESI): Emotional-social intelligence is a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively people understand and express themselves, understand others and relate with them, and cope with daily demands.

The socio-genic or culture model (Mangel, 2012): Individuals behaving in the manner that society desires are labeled as normal and adjusted individuals. According to Magdalena (2012), School adjustment can be defined according to the Piagetian principle, as the assimilation of the informational content and the norms of the pupils' status and role, on one hand and on the other hand, as the adjustment of the cognitive and motivational affective processes to the demands of the school environment. There are three main adjustment areas: emotional adjustment, social adjustment, and educational adjustment.

Method

In this research, descriptive survey design and quantitative approach were used.

Sample

Participants were 600 students who were randomly selected as a sample from three High Schools in Mandalay District in the academic year of 2019-2020 by simple random sampling method.

Instrumentation

Social Emotional Competence Questionnaire (SECQ): The Social Emotional Competence Questionnaire (SECQ, Zhou. M. & Ee. J, 2012) will be applied to assess the adolescent's social emotional competence. This questionnaire includes 25 items that ranged 1 (strongly disagree) to 5 (strongly agree). There are five domains in this scale: self-awareness, social awareness, self-management, relationship management, and responsible decision-making.

School Adjustment (AISS): The Adjustment Inventory for School Students (AISS, A. K.P. Sinha and R. P. Singh, 2014) will be used to assess the school adjustment of the students. This inventory involves 60 questions covering the school problems and the answers are rated on the likert scale from 1(strongly disagree) to 5 (strongly agree). There are three main adjustment areas: emotional adjustment, social adjustment, and educational adjustment.

Data Collection

At first, the permission for data collection was required from Professor and the head of Educational Psychology Department. With the permission of the respective headmasters or headmistress, Grade 6 and 8 students from these schools were selected randomly and instructed to complete the task of data collection. For the students, 30 minutes were allowed to respond the questionnaire. The data collection was completed during November, 2019.

Data Analysis

The researcher computed the data into the Microsoft Excel (2010) and Statistical Package for Social Science (SPSS), version 20.0, software. Quantitative data analyses were used to compute descriptive statistics to identify the mean, standard deviation, frequency, maximum and minimum scores of social emotional competence and school adjustment. The data were analyzed by descriptive analysis technique, independent sample *t* test, One-way ANOVA and Pearson product-moment correlation.

Findings

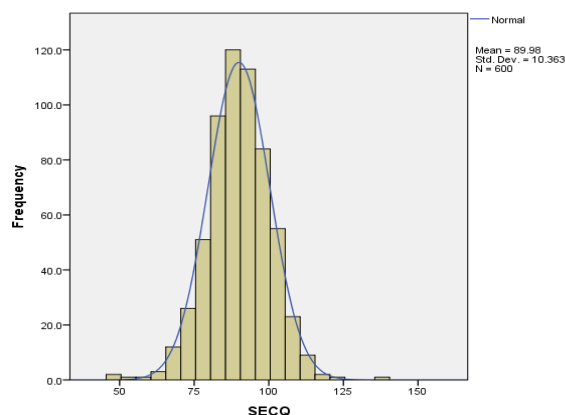
Analysis of Adolescents' Levels of Social-emotional Competence

This subsection presents the analyses of the adolescents' levels of social-emotional competence. The results can be seen in the following table.

Table 1 Descriptive Statistics of Students' Social-emotional Competence

	N	Min	Max	Mean	SD
Social-emotional Competence	600	48	121	89.98	10.36

According to the social-emotional questionnaire, the perfect score was 125 and the lowest score was 25. Table 1 showed the mean score of the participants was 89.98. The theoretical mean score was 75. Therefore, it can be said that adolescents' social-emotional competence was satisfactory. The frequency distribution of the overall social-emotional competence can be interpreted to be approximately normal.

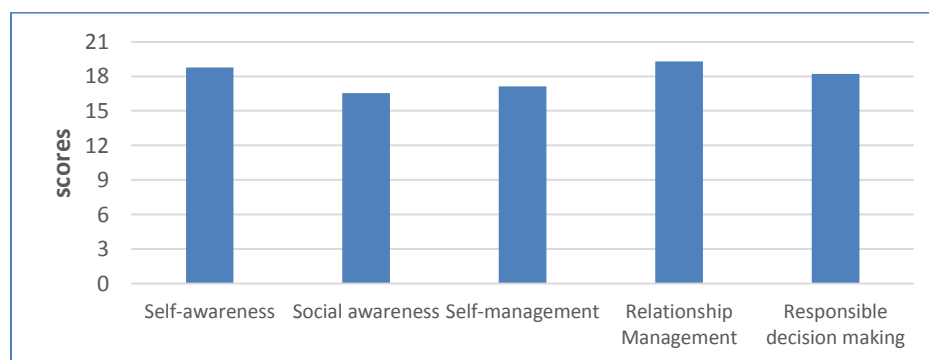
**Figure 1** Distribution of Adolescents' Social-emotional Competence Scores

The following table shows their social-emotional competence in different dimensions.

Table 2 Descriptive Statistics of Adolescents' Social-emotional Competence in Different Dimensions

Dimensions	N	Min	Max	M	SD
Self-awareness	600	9	25	18.77	2.57
Social awareness	600	8	24	16.55	2.96
Self-management	600	7	25	17.14	3.46
Relationship Management	600	7	25	19.30	3.02
Responsible decision making	600	9	23	18.21	3.26

According to Table 2, the highest score was found in relationship management dimension (M= 19.30, SD= 3.02). This dimension was followed by self-awareness (M = 18.77, SD = 2.57). The lowest score was found in social awareness dimension (M = 16.55, SD = 2.96). Based on the results of the above table, it can be said that adolescents were in relationship management dimension and lowest in social awareness. These results can be clearly seen in the following Figure 2.

**Figure 2** Results of Adolescents' Social-emotional Competence

Analysis of Differences in Adolescents' Social-emotional Competence based on their Demographic Characteristics

This subsection explores the differences in adolescents' social-emotional competence according to their gender, grades, and parents' education and job.

Table 3 Results of Independent Sample *t* test for Social-emotional Competence by Gender

Variable	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
Social-emotional Competence	Male	300	89.27	-1.59	598	.111	-1.32
	Female	300	90.69				

The mean and standard deviation of male students were 89.27 and 10.61 and those of female students were 90.59 and 9.73. The results Table 3 revealed that the mean scores of the two groups were not significantly different in social-emotional competence. Therefore, adolescents did not differ in social-emotional competence according to their gender.

Table 4 Results of Independent Sample *t* test for Social-emotional Competence by Grade

Variable	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
Social-emotional Competence	Grade 6	300	89.84	-.224	598	.823	-0.18
	Grade 8	300	90.12				

The mean and standard deviation of Grade 6 students were 89.84 and 10.81 and those of Grade 8 students were 90.02 and 9.55. There was a slight difference in mean scores in two groups of adolescents, but this difference was not statistically significant according to *t* test. Therefore, adolescents' social-emotional competence was not different according to their grades. The following three tables show the analysis results of social-emotional competence of adolescents by their parents' education.

Table 5 Descriptive Statistics for Social-emotional Competence by Father's Education

Variable	Levels of Education	N	Mean	Standard Deviation
Social-emotional Competence	Primary	90	88.567	10.0684
	Middle	222	89.392	9.3753
	High	195	90.426	11.563
	Graduate	93	91.495	11.24

Table 5 shows that the mean scores of father's education. Students of Graduate father's education level were highest mean score.

Table 6 ANOVA Results of Social-emotional Competence by Father's Education

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Social-emotional Competence	Between Groups	507.135	3	169.045	1.63	.181
	Within Groups	61711.925	596	103.543		
	Total	62219.060	599			

Table 6 presents the results of analysis on the differences in adolescents' social-emotional competence by father's education. The results of one-way ANOVA revealed that adolescents' social-emotional competence was not different according to their father's education.

Table 7 Descriptive Statistics for Social-emotional Competence by Mother's Education

Variable	Levels of Education	N	Mean	Standard Deviation
Social-emotional Competence	Primary	122	88.51	10.106
	Middle	232	89.50	9.814
	High	159	90.48	11.337
	Graduate	87	92.41	9.960

Table 8 ANOVA Results of Social-emotional Competence by Mother's Education

Variable		Sum of Squares	df	Mean Square	F	p
Social-emotional Competence	Between Groups	874.758	3	291.486	2.738*	.043
	Within Groups	63447.302	596	106.455		
	Total	64321.760	599			

Note: *The mean difference is significant at 0.05 level.

Table 8 shows that adolescents' social-emotional competence was significantly different by their mothers' education level. To see specifically, Tukey test was applied as follow.

Table 9 Results of Tukey Test on Differences among Adolescents' Social-emotional Competence by Mother's Education

Mother's Education Level		Mean Difference	Std. Error
Primary	Middle	-.987	1.154
	High	-1.976	1.242
	Graduate	-3.906*	1.448
Middle	Primary	.987	1.154
	High	-.989	1.062
	Graduate	-2.918	1.297
High	Primary	1.978	1.242
	Middle	.989	1.062
	Graduate	-1.930	1.376
Graduate	Primary	3.906*	1.448
	Middle	2.918	1.297
	High	1.930	1.376

Note: *The mean difference is significant at 0.05 level.

The results show that adolescents with graduate mothers were significantly different from others with primary education level mothers. Therefore, mother's education level can be considered as one of the factors influencing adolescents' social emotional competence.

Table 10 Descriptive Statistics for Social-emotional Competence by Father's Job

Variable	Job	N	Mean	Standard Deviation
Social-emotional Competence	Government Staff	121	91.430	8.9841
	Farmer	18	89.278	10.8888
	Others	448	89.574	10.6611
	Dependent	13	91.417	11.4769

Table 11 Results of Adolescents' Social-emotional Competence based by Father's Job

Variable		Sum of Squares	df	Mean Square	F	p
Social-emotional Competence	Between Groups	390.899	4	97.725	.940	.440
	Within Groups	61828.161	595	103.913		
	Total	62219.060	599			

One-way ANOVA was used to analyze the differences in adolescents' social-emotional competence by father's job. According the results, there were no significant differences in mean scores of different adolescents' groups by father's job.

Table 12 Descriptive Statistics for Social-emotional Competence by Mother's Job

Variable	Job	N	Mean	Standard Deviation
Social-emotional Competence	Government Staff	61	89.200	10.3478
	Farmer	11	88.909	10.2806
	Others	257	90.241	10.3250
	Dependent	271	89.989	10.4025

Table 13 Results of Adolescents' Social-emotional Competence based by Mother's Job

Variable		Sum of Squares	df	Mean Square	F	p
Social-emotional Competence	Between Groups	548.541	5	109.708	1.057	.383
	Within Groups	61670.519	594	103.822		
	Total	62219.06	599			

Note: *The mean difference is significant at 0.05 level.

Table 13 results show that there were no significant differences in adolescents' social-emotional competence according to their mothers' job differences. According to results, parent's job did not significantly affect adolescents' social-emotional competence.

Analysis of Adolescents' Levels of School Adjustment

This subsection presents the analyses of the adolescents' levels of school adjustment.

Table 14 Descriptive Statistics of Students' Levels of School Adjustment

	N	Min	Max	M	SD
School Adjustment	600	60	268	213	20.39

The above table shows the results of adolescents' level of school adjustment. The mean score was 213. The distribution of the scores was shown with histogram as shown in Figure 3. Thus, the frequency distribution of the adolescents' school adjustment can be interpreted to be approximately normal.

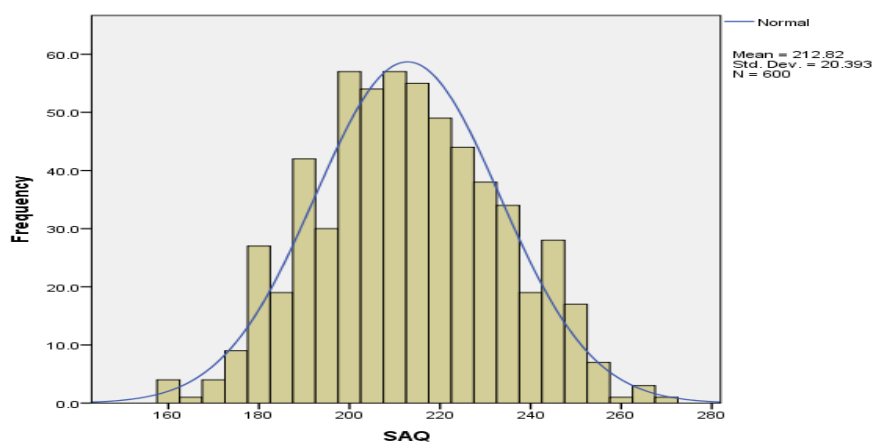


Figure 3 Distributions of Adolescents' School Adjustment Scores

The adolescents' school adjustment was analyzed specially with its dimensions. The results were shown in the following table.

Table 15 Descriptive Statistics of Students' School Adjustment in Different Dimensions

Dimensions	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Emotional adjustment	600	28	89	64.73	9.68
Social adjustment	600	43	114	71.83	8.28
Educational adjustment	600	46	96	72.55	8.38

Table 15 shows the results of adolescents' school adjustment in different dimension. According to the table, adolescents got the highest scores in educational adjustment dimension, and got the lowest score in emotional adjustment dimension. Therefore, adolescents can adjust well in education areas than others.

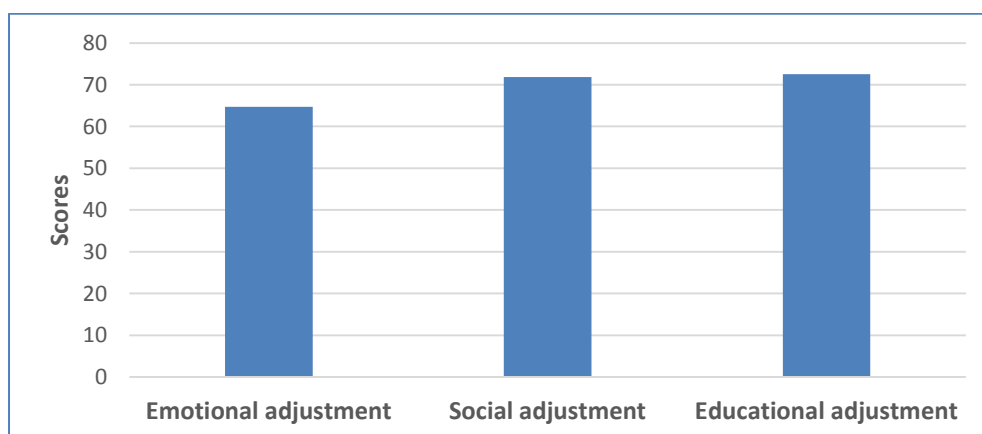


Figure 4 Results of Adolescents' School Adjustment

Analysis of Adolescents' School Adjustment by their Demographic Characteristics**Table 16 Results of Independent Sample *t* test for School Adjustment by Gender**

Variable	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
School Adjustment	Male	300	210.99	-2.2*	598	.028	-3.65
	Female	300	214.64				

Note: *The mean difference is significant at 0.05 level.

The mean and standard deviation of male students were 210.99 and 214.64 and those of female students were 19.94 and 20.71. The results showed that the mean scores of male and female were significantly different in school adjustment.

Table 17 Results of Independent Sample *t* test for School Adjustment by Grade

Variable	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
School Adjustment	Grade 6	300	209.52	4.00***	598	.000	-6.583
	Grade 8	300	216.11				

Note: ***The mean difference is significant at 0.001 level.

According to the table, the mean score of Grade 8 students were significantly higher than that of Grade 6 students. Based on the result, it might be said that grade was a significant factor for the individual differences in school adjustment of adolescents.

Table 18 Descriptive Statistics for School Adjustment by Parents' Education

Variable		Levels of Education	N	Mean	SD
school adjustment	Father	Primary	90	210.789	18.7566
		Middle	222	211.288	20.7405
		High	195	214.262	20.5509
		Graduate	93	215.387	20.5580
	Mother	Primary	122	211.20	19.632
		Middle	232	211.95	20.135
		High	159	212.66	20.296
		Graduate	87	217.68	21.882

Table 19 Results of Adolescents' School Adjustment based on Parents' Education

Variable			Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
school adjustment	Father	Between Groups	1910.201	3	636.734	1.54	.204
		Within Groups	63781.771	596	414.755		
		Total	64321.760	599			
	Mother	Between Groups	2555.158	3	851.719	2.06	.105
		Within Groups	246549.307	596	413.673		
		Total	249104.465	599			

Table 19 describes the analysis results of differences in adolescents' school adjustment according to their parents' education levels. The results showed that there were no significant differences in mean scores among different groups by parents' education levels. Therefore, parents' education level did not affect adolescents' school adjustment. The following table presents the analysis results of differences in adolescents' school adjustment by parents' job.

Table 20 Descriptive Statistics for school adjustment by Parents' Job

Variable		Job	N	Mean	SD
school adjustment	Father	Government Staff	121	215.917	20.6384
		Farmer	18	210.944	21.8456
		Others	448	212.179	20.0194
		Dependent	13	211.667	26.0640
	Mother	Government Staff	61	212.500	21.9618
		Farmer	11	209.909	18.0081
		Others	257	212.440	20.4597
		Dependent	270	213.530	20.0965

Table 21 Results of Adolescents' School Adjustment based on Parents' Job

Variable			Sum of Squares	df	Mean Square	F	P
school adjustment	Father	Between Groups	3257.966	4	814.492	1.97	.097
		Within Groups	245846.499	595	413.187		
		Total	249104.465	599			
	Mother	Between Groups	1601.978	4	320.396	.77	.572
		Within Groups	247502.487	595	416.671		
		Total	249104.465	599			

One-way ANOVA was applied to analyze the differences in school adjustment of adolescents according to their parents' job. According to the results of Table 21, parents' job was not a significant factor for the differences in adolescents' school adjustment.

Analysis of Relationship between Social-emotional Competence and School Adjustment

The relationship between the social-emotional competence and school adjustment was analyzed using Pearson product-moment correlation. The result can be seen as follow.

Table 22 Relationship between Social-Emotional Competence and School Adjustment

Variable	Correlation	Social Emotional Competence	School Adjustment
Social Emotional Competence	Pearson Correlation	1	.321**
	Sig. (2-tailed)		.000
	N	600	600
School Adjustment	Pearson Correlation	.321**	1
	Sig. (2-tailed)	.000	
	N	600	600

According to Table 22, a positive and moderate correlation was found between social-emotional competence and school adjustment of adolescents. Therefore, it can be said that adolescents with high social-emotional competence can adjust well in school.

Discussions

Analysis of Differences in Adolescents' Social Emotional Competence based on Gender: To analyze gender difference for the social emotional competence of adolescents, independent

sample *t* test was used. The result revealed that there was no significantly different in social emotional competence. Therefore, adolescents did not differ in social emotional competence according to their gender. The result was congruent that the result of Bar-On model (1997) which indicated that females appear to have stronger interpersonal skills than males but males have a higher intrapersonal capacity, are better at managing emotions and are more adaptable than females. Daniel Goleman's (2011) Emotional Intelligence theory found that women are on average better than men at some forms of empathy and men do better than women when it comes to managing distressing emotions.

Analysis of Differences in Adolescents' Social Emotional Competence based on Grade: *t* test for the social emotional competence of adolescents by grade was performed. There was a slight difference in mean scores in two groups of adolescents, but there was not statistically significant according to *t* test.

Analysis of Differences in Adolescents' Social Emotional Competence based on Parent's Education: ANOVA tests for the social emotional competence of adolescents by parent's education were performed. The result showed that the social emotional competence of adolescents was not different according to their father's education. However, the social emotional competence of adolescents was significantly different based on their mothers' education level. According to the results, adolescents with graduate mothers were significantly different from others with primary education level mothers. Therefore, mother's educational level can be considered as one of the factors influencing adolescents' social emotional competence.

Analysis of Differences in Adolescents' Social Emotional Competence based on Parent's Jobs: To analyze the difference in adolescents' social emotional competence, one way ANOVA was used. According to result in my study, there was no significant difference in adolescents' social emotional competence by parent's job.

Analysis of Adolescents' Level of School Adjustment: The perfect score was 300 and the lowest score was 60. Therefore, it can be said that adolescents were in moderate level in school adjustment. The adolescents got the highest scores in educational adjustment dimension and got the lowest score in emotional adjustment dimension. Therefore, adolescents can adjust well in education areas than others.

Analysis of Differences in Adolescents' School Adjustment based on Gender: *t* test result showed that the mean scores of male and female were significantly different in school adjustment. Gender is a significantly factor for individual differences in school adjustment of adolescents.

Analysis of Differences in Adolescents' School Adjustment based on Grade: The mean score of Grade 8 students was significantly higher than that of Grade 6 students. It might be said that grade was a significant factor for the individual differences in school adjustment of adolescents.

Analysis of Differences in Adolescents' School Adjustment based on Parents' Education: ANOVA results showed that there were no significant differences in mean scores among different groups by parents' education levels. Therefore, parents' education level did not affect adolescents' school adjustment.

Analysis of Differences in Adolescents' School Adjustment based on Parents' Job: ANOVA results showed that there were no significant differences in mean scores among different groups by parents' job. Therefore, parents' job did not affect adolescents' school adjustment.

Analysis of Relationship between Social Emotional Competence and School Adjustment: Pearson Product-moment Correlation was conducted to analyze the relationship between the social emotional competence and school adjustment of adolescents in Mandalay District.

A positive correlation was found between social emotional competence and school adjustment of adolescents. Adolescents with high social emotional competence can adjust well in school.

Conclusion and Recommendation

Without education, good students can't be produced and shaped good citizens for nation. To improve sound mind and various skills, including physical, mental, social, emotional and other competencies, students need the social emotional competencies. Students who fail to develop critical social emotional competencies early in life may be at risk for increased occupational stress, antisocial behaviors and its associated health risks in adulthood. Therefore, in order to improve their social emotional competence, teachers should;

- model appropriate social behavior,
- provide opportunities for them to develop new social emotional skills,
- give explicit guidance,
- offer curriculum that is engaging and relevant to children's lives and cultures,
- engage with parents in a two-way relationship to build children's social emotional skills,
- reflect an ethic of caring and nurturing,

After studying social emotional competence of the adolescents by parents' education and jobs, parents play an important role to nurture their children and parents should;

- be attentive to the social and emotional needs of their children,
- attend social emotional learning workshops and on-line chats,
- be a role model,
- build a language between parent and his children which involves talking about feelings,
- applaud children's efforts to improve their emotional quotient,
- look for teachable moments that enable them to discuss moods, conflict resolution or managing feelings with children,
- be aware that parents can teach emotional competency through personal stories, current events, discussions of movies or web sites,
- keep a journal which will help parents to become more reflective about his emotional self and encourage children to do the same,
- look for toys and products which are prosocial and build emotional competencies.

Socially and emotionally students can build developing, supportive and encouraging relationship with teachers, peers and family. It is important to note that the results of the current research will provide findings that can be used by other researchers. Finally as this research study emphasize the social emotional competence and school adjustment of adolescents; it can be valuable to measure the personal quality of students which can provide some contributions to Educational Psychology and especially Educational Guidance and Counselling.

Acknowledgements

We would like to say "Thank you" to everyone who helped and encouraged us to accomplish this quality paper completely. We would like to pay our sincere and respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-rector, Sagaing University of Education) for giving us the permission to conduct this research study and providing great support. Moreover, we are deeply indebted to my external examiner, Dr. Nu Nu Win (Retired Professor, Head of Department, Department of Educational Psychology, Sagaing University of Education) for her excellent and insightful way of reflecting and commenting

upon this study. I would like to offer special thanks to Prof: Dr. Khin Thuzar Saw (Retried Principal of Thinguntune Education College) for her expert comments, kindness and important suggestions. Besides We are deeply thankful to the concerned principals, teachers and Grade 6 and Grade 9 students from Mandalay District, for their active cooperation and willing participation in the vital role of the data collection.

References

- Bar-On, R. (2006). The Bar-On model of emotional-social intelligence (ESI). *Psicothema*, 18, suppl., 13-25. Retrieved February 13, 2014 from [www.eiconsortium.org/reprints/bar-on model of emotional-social intelligence.htm](http://www.eiconsortium.org/reprints/bar-on-model-of-emotional-social-intelligence.htm).
- Durlak, J. A., et al. (2011). The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. *The journal of Child Development*, January/February, 2011, Vol 82, No. 1, Pages 474-501.
- Gates, A.S. and Jersild, A.T. (1970). *Educational Psychology*, New York: Macmillan, pp.614-15
- Ladd, G. W. (1990). Having friends, keeping friends, making friends, and being liked by peers in the classroom: Predictors of children's early school adjustment? *Child Development*, 61, 1081-1100
- Mangal, S.K. (2012). *Advanced Educational Psychology*, New Delhi: (2nd ed.)
- Weissberg, R. P., et al. (2015). CASEL: What is Social and Emotional Learning? Retrieved February 3, 2014 from <http://www.casel.org/social-and-emotional-learning>. www.ascd.org/...The Need for Social...
- Zhou, M. & Ee, J. (2012). Development and Validation of the Social Emotional Competence Questionnaire (SECQ). *The International Journal of Emotional Education*, Vol 4, No. 2, 27-42.

A STUDY ON SELF-ESTEEM AND SOCIAL RELATIONS OF GRADE 9 STUDENTS IN MONYWA TOWNSHIP

Kyaw Min Lwin¹, Khin Thuza Saw²

Abstract

The main purpose of this study is to investigate self-esteem and social relations of Grade 9 students. The study conducted a survey research design and employed with a quantitative method. The participants in this study were 1017 Grade 9 students including 432 males and 585 females from selected schools in Monywa Township, Sagaing Region. The required sample was selected by using random sampling technique. As research instruments, Self-Liking /Self-Competence Scale-Revised Version (Tafarodi & Swamm, 1995) and A Semi Structure Questionnaire (Abraham, 2010) were developed to measure students' self-esteem and social relations. And, data analysis, descriptive statistics, independent sample t test, one way ANOVA and correlation technique were used in this study. Independent sample t test showed the difference in self-esteem and social relations by gender. And then, no significant difference was found in self-esteem by specialized combination. Furthermore, significant difference was found in social relations by specialized combination. Moreover, there was significant difference in self-esteem by schools but no significant difference in social relations. Pearson Product Moment Correlation revealed that self-esteem of students was significantly correlated with their social relations ($r=.391, p<0.01$). The findings indicated that there was significant relationship of self-competence and self-liking with social relations. Therefore, the higher the students' self-esteem, the better the social relations they possessed. And, the findings of current study illustrates the salient points concerning with self-esteem and social relations of adolescents for teachers, parents and headmasters in educational setting. This study gives them information about the concepts of self-esteem which can lead towards helping to improve the social relations of students.

Keywords: self-esteem, social relations, self-perception

Introduction

Significance of the Study

Self-esteem has become a household word. Teachers, parents, therapists, and others have focused efforts on boosting self-esteem, on the assumption that high self-esteem will cause many positive outcomes and benefits. Global self-esteem scores may predict behavior across a wide range of situations, particularly when behavior is aggregated across many situations (Epstein, 1980).

Studies which have investigated the relationship between statements made by significant others and self-perceptions, Blake and Slate (1993) have found that positive interactions and statements made by significant others were related to high self-esteem and that negative interactions were associated with low self-esteem.

Every success and failure, together with the reaction of peers, parents and teachers to these experiences will contribute significantly to the students' self-worth, self-confidence and self-reliance and self-esteem (Heyman, 2000).

Self-esteem is modified from childhood through the adolescent's life by social experiences that occur both outside and within the family. Having high and positive global self-esteem during adolescence may provide an inner security that creates a foundation for making wise life and experiencing high life satisfaction in adulthood (Rutter, 1987).

People with high self-esteem claim to be more likable and attractive, to have better relationships, and to make better impressions on others than people with low self-esteem, but objective measures disconfirm most of these beliefs. Narcissists are charming at first but tend to

¹ Tutor, Department of Educational Psychology, Sagaing University of Education

² Dr, Retired Principal, Thingangyun Education College

alienate others eventually. Self-esteem has not been shown to predict the quality or duration of relationships. High self-esteem makes people more willing to speak up in groups and to criticize the group's approach. Leadership does not stem directly from self-esteem, but self-esteem may have indirect effects. Relative to people with low self-esteem, those with high self-esteem show stronger in-group favoritism, which may increase prejudice and discrimination.

With a better understanding of self-esteem and social relations of adolescents, parents and teachers can help the adolescents to build the strong self-confidence so as to venture into the world adulthood. Moreover, the current study can become useful for providing vital information for many future researches. Since very few researchers on self-esteem and social relations are found in the upper secondary level in Myanmar, this study is expected to contribute the field of Educational Psychology.

Objective of the study

The main aim of this study is to investigate the self-esteem and social relations of Grade-9 students.

The specific aims of this study are:

1. To study the difference between the self-esteem and social relations of Grade 9 students by gender.
2. To study the difference between the self-esteem and social relations of Grade 9 students by specialized combination.
3. To study the difference between the self-esteem and social relations of Grade 9 students by schools.
4. To find out whether there is the relationship between the self-esteem and social relations of Grade 9 students or not.

Scope of the Study

A total of 2017 Grade 9 (2016-2017) students, were selected from five high schools in Monywa Township by random sampling technique.

Definition of Terms

Self-esteem can be defined as “an individual’s attitude about him or herself, involving self- evaluation along a positive- negative dimension (Baron & Byrne, 1991).

In social science, a social relation or social interaction is any relationship between two or more individuals (Wikipedia, the free encyclopedia).

Related Literature Review

Socio-meter theory predicts that the structure of self-esteem as a psychological construct should reflect its function as a mechanism concerned with establishing and maintaining social relationships.

The Two Faces of Self-esteem

Self-competence

Self-competence is the evaluative experience of oneself as a causal agent, an intentional being that can bring about desired outcomes through exercising its will. As a generalized trait, it refers to the overall positive or negative orientation toward oneself as a source of power and efficacy. Self-competence is closely related but not equivalent to Bandura’s (1989, 1992) self-efficacy, defined as “people’s beliefs about their capabilities to exercise control over events that control their lives” (Bandura, 1989).

In his original conception of self-efficacy, Bandura (1989) distinguished efficacy expectancy, one's confidence that a particular action can be executed as intended, from outcome expectancy, one's confidence that the action will bring about the desired outcome. Strong efficacy beliefs often presuppose goal-consistent outcome expectancies. This is especially true in relation to general self-efficacy, the overall assurance or faith that individuals have in their ability to achieve their goals (Sherer, Maddux, Meadante, Prentice-Dunn, Jacobs & Rogers, 1982; cited in Tafarodi & Swamm, 1995)). It is self-efficacy in its generalized, trait form that most closely parallels the self-competence dimension of global self-esteem.

Self-liking

The moral significance of one's characteristics and actions reflects the intrinsic side of value. This is represented in self-esteem as self-liking. Essentially, self-linking is the valuative experience of oneself as a social subject, a good or a bad person. As a generalized trait, it reduces to one's chronic, overall sense of worth as an individual with social significance. By "social", it was not meant to suggest that self-liking is mainly perception of the value that others accredit someone, although this is surely one continuing source of it. Rather, mature self-liking rests primarily on the social value that people ascribe to themselves. Even when sitting alone in a dark and soundless room, we appear as social objects to ourselves, positioned in physical, temporal, and moral space (Harre, 1991). As such, they recreate through reflexive through the social judgment originally conveyed to them by others (Mead, 1934; Vygotsky, 1934/1962). Substantive qualifications for "goodness"—whether of charm, beauty, integrity, kindness, or any other aspect of personal worth—must be taken from others to become private standards for self-acceptance.

Social Relations

Piaget suggested that social relations occupy a pivotal role in the developmental process. Social relations not only provide a basis for understanding about the social world or regulations and moral duties.

They also provide different routes or methods for constructing (or not constructing) knowledge and for holding our beliefs to be legitimate. These social relations can be categorically and theoretically distinguished into two types - relations of constraint and relations of cooperation - which each entail very different consequences for the development of a child's thought.

Relations of constraint, on the one hand, are characterized by an inequality or, asymmetry in the balance of authority attributes between individuals. Importantly, the asymmetry is not an inequality in terms of what different individuals know; Piaget's programme of investigating the question, "How is knowledge created?" would never tolerate such a presumption. Rather it is, very specifically, an asymmetry in the power or status of individuals which gives one the opportunity to impose or exercise power over the other. In relations of constraint the child cannot question the legitimacy of an authority figure's judgments. Hence psychological development is hindered since the child is unable to engage in the mutual construction of knowledge.

Relations of cooperation, in contrast, are characterized by an equality or symmetry in relations. In the absence of an authority figure, peers are free to discuss, debate and exchange differing perspectives. The great difference with relations of cooperation is that no one perspective dominates the discussion. The absence of an authority figure allows the possibility (and only the possibility) of different perspectives to be shared, integrated and accommodated into a more adequate, mutual understanding. Relations of cooperation thus permit development, since knowledge can be mutually constructed.

Typically, adult-child relations characterize relations of constraint since the adult possesses many authority attributes - age, size, physical power - over and above the child. In the attributes of power or authority each individual possesses in the (Leman social relation & Duveen, 1999).

In contrast, relations of cooperation are typically found amongst peers, where there is a balance of authority or power attributes in the relation. However, although adult-child and peer relations typify the different sorts of social relation, the crucial theoretical point is the balance of authority that exists between individuals. So it is perfectly possible for asymmetries (and relations of constraint) to exist between children of the same age, and it is equally possible for adult-child interaction to be conducted on a relatively symmetric and authority-free basis.

Table 1 The Number of Students participated in the Study by Gender and Schools in Monywa Township

No.	School	Number of Students		Total
		Male	Female	
1.	1	73	109	182
2.	2	103	182	285
3.	3	113	137	250
4.	4	79	85	164
5.	5	64	72	136
Total		432	585	1017

Instrumentation

The research instruments were Self-Liking/Self-Competence Scale-Revised Version and A Semi structure questionnaire. For the purpose of measuring self-esteem of students, a 16-item Self-Liking/Self-Competence Scale - Revised Version (SLCS-R) as developed by (Tafarodi & Swann, 1995). SLCS-R is composed of two subscales of self-esteem: (a) self-liking and (b) self-competence. These two subscales were composed of 8 items for self-liking and 8 items for self-competence. The total items were 16 items in which 8 items were positively stated and 8 items were negatively stated. Individual students responded the questionnaire using a five-point Likert scale, ranging from "1= strongly disagree", "2= disagree", "3= undecided", "4= agree" and "5= strongly agree".

The key adapted to measure social relation of students was a-30 item A Semi Structure Questionnaire developed by (Abraham, D. K, 2010). It was composed of three subscales of social relations: (a) relationship of adolescents with their parents, (b) relationship of adolescents with their peers and (c) relationship of adolescents with their teachers. Each subscale was composed of 10 items. The total items were 33 items in which 20 items were positively stated and 10 items were negatively stated. Individual students responded the questionnaire using a five point Likert scale, ranging from "1= never", "2= rarely", "3= sometimes", "4= nearly always", "5= always".

The instruments used in this study were translated from English version to Myanmar version. After preparing the measuring instrument, expert review was conducted for face validity and content validity from Department of Educational Psychology in Sagaing University of Education. After getting permission from the authority concerned, pilot study was made to determine the time necessary for the students to complete the questionnaires and whether there were any unclear statements for them. After making pilot study, the reliability analysis of the instrument was conducted by using Statistical Package for Social Sciences (SPSS) program. As internal consistency, the Cronbach's alpha reliability coefficient of the instrument was .701

for self-esteem and .730 for social relation. So, it is acceptable to use the instruments as a reliable tool for this study.

Procedure

In this study, the related literature was gathered from several available books, journal and internet sources. And then, the instrumentation was prepared to assess self-esteem and social relations of students being studied. Next, pilot study was conducted with a sample of 92 Grade 9 students from Basic Education High School in Sagaing. Then, the instrument was taken validity and reliability according to pilot study results by using SPSS (20.0). Data collection was conducted after validating instruments. And then, research paper was written and submitted and with the guidance of the supervisor. Before editing the final report, “1st –draft” was prepared.

Data Analysis and Findings

The main purpose of the study is to explore self-esteem and social relations of Grade-9 students in Monywa Township and to investigate the differences on their self-esteem and social relations according to gender, specialized combination and selected schools. Then, the relationship between self-esteem and social relations of Grade-9 students was also explored. The findings and results were presented in this paper. Descriptive and inferential statistics were applied to discuss findings and results.

Table 2 Comparison of Mean, Standard Deviation and the Result of Independent Sample *t* test for Self-esteem by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Overall Self-Esteem	male	432	52.59	6.118	-2.703	1015	0.007	-1.105
	female	585	53.70	6.679				

Note: **The mean difference is significant at the 0.01 level.

Table 2 showed that there was a significant difference in self-esteem between male and female students in overall self-esteem ($p < 0.01$). The average mean score of male students was 52.59 and that of female students was 53.70. The aggregate mean score for the whole sample revealed that female students had higher mean scores in self-esteem than that of male students. So, it was found that female students were significantly higher than male students in self-esteem.

In order to know whether the female students were higher in subscales of self-esteem, the mean comparison was conducted by using independent sample *t* test. The results were shown in Table 3.

Table 3 Comparison of Mean, Standard Deviation and the Result of Independent Sample *t* test for Subscales of Self-esteem by Gender

Subscales	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Self-competence	male	432	24.38	3.336	-.644	977.015	0.520	-.143
	female	585	24.52	3.714				
Self-liking	male	432	28.22	4.019	-3.849**	903.708	0.000	-.962
	female	585	29.18	3.834				

Note: **The mean difference is significance at the 0.01 level.

Table 3 revealed that there was significant difference in self-esteem subscales between male and female students ($p < 0.001$). The average mean score of male students was 28.22 and that of female students was 29.10. Therefore, female students had higher mean scores in self-linking

than that of male students. So, it was found that female students were significantly higher than male students in self-liking subscale.

Table 4 Comparison of Mean, Standard Deviation and the Result of Independent Sample *t* test for Self-esteem by Specialized Combination

Variable	Combination	N	Mean	SD	<i>t</i>	df	<i>p</i>	MD
Overall	Combination-7	504	53.16	6.472	-.339	1015	0.735	-.138
Self-Esteem	Combination-1	513	53.29	6.466				

Table 4 showed that there was no significant difference between Combination-7 and Combination-1 students in overall self-esteem. According to this result, Combination-7 and Combination-1 students did not differ in their self-esteem.

Differences in Self-esteem of Students by Schools

After comparing self-esteem of students by specialized combination, the differences in self-esteem by schools were calculated. The participants involved were students from School 1, School 2, School 3, School 4 and School 5. To be able to compare students' self-esteem by schools, descriptive statistics was first used in this study. Table 5 displayed mean and standard deviation for self-esteem scores of students from five selected schools.

Table 5 Mean and Standard Deviation of Self-esteem by Schools

Variable	Schools	N	Mean	SD
Overall Self-Esteem	School 1	182	53.50	7.159
	School 2	285	54.30	6.573
	School 3	250	52.30	6.383
	School 4	164	52.49	5.923
	School 5	136	53.20	5.726
	Total	1017	53.23	6.466

According to Table 5, the mean score of students' self-esteem were slightly different by schools. School 2 had the highest mean score in its self-esteem (54.30) and School 3 and School 4 possessed the lowest mean scores (52.30 and 52.49). To explore the differences of self-esteem among schools specifically, one way analysis of variance (ANOVA) was conducted. The results of the analysis were displayed in Table 6.

Table 6 The ANOVA result for self-esteem of students

Variable		Sum of Square	<i>df</i>	Mean Square	<i>F</i>	<i>Sig.</i>
Overall Self-Esteem	Between Groups	643.702	4	160.925	3.892	0.04
	Within Groups	41840.283	1012	41.334		
	Total	42483.984				

Note: The mean difference is significance at the 0.05 level.

Table 6 indicated that a statistically significant difference was found among five schools in overall self-esteem ($F(4,1.12)=3.892$ at the 0.05 level. It indicated that the school location may be one of the factors that differ in self-esteem of students.

To investigate more specifically how much students' self-esteem differed in relation to their schools, the Post Hoc Test was carried out by Tukey HSD method. The results were shown in the following table 7.

Table 7 The Result of Tukey (HSD) Test Multiple Comparison for Students' Self-esteem by Schools

Variable	School (I)	School (J)	MD (I-J)	P
Overall Self-Esteem	School 2	School 1	.798	.686
		School 3	1.988*	.003
		School 4	1.804*	.035
		School 5	1.100	.471
	School 3	School 1	-1.200	.310
		School 2	-1.998*	.003
		School 4	-.194	.998
		School 5	-.899	.684
	School 4	School 1	-1.006	.593
		School 2	-1.804*	.035
		School 3	.194	.998
		School 5	-.705	.879

*The mean difference is significant at the 0.05 level.

The result of Post Hoc Tukey (HSD) Test revealed that the mean difference between School 2 and School 3 was 1.988 and it was significantly different at $p < 0.01$. And, the mean difference between School 2 and School 4 was 1.804 and it was significantly different at 0.05 level. However, there were no significant differences among other selected schools. The students in school 2 were higher in self-esteem than the students in school 3 and 4.

Table 8 Comparison of Mean, Standard Deviation and the Result of Independent Sample *t* test for Social Relations by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	df	<i>p</i>	MD
Over Social Relations	male	432	106.51	9.587	-5.599*	1015	0.000	.610
	female	585	112.93	9.640				

Note: * The mean difference is significant at the 0.01 level

Table 8 showed that there was significant difference in social relations between male and female students ($p < 0.01$). The average mean score of male students was 106.51 and that of female students was 112.93. Therefore, female students had higher mean scores on social relations overall than that of male students. So, it was found that female students were significantly higher than male students in overall social relations.

In order to know in which subscales of social relations that female students were higher, the mean comparison was conducted by using independent sample *t* test again. The results were shown in Table 9.

Table 9 Comparison of Mean, Standard Deviation and the Result of Independent Sample *t* test for Subscales of Social Relations by Gender

Subscales	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Relationship with parents	male	432	37.29	4.341	-3.571*	1015	0.000	-.990
	female	585	38.28	4.390				
Relationship with peers	male	432	33.44	4.331	-1.439	1015	0.150	-.415
	female	585	33.85	4.708				
Relationship with teachers	male	432	38.78	4.451	-7.263*	1015	0.000	-2.011
	female	585	40.79	4.299				

Note: *The mean difference is significant at the 0.01 level.

According to table 9, there was significant difference in subscales of social relations subscale between male and female students. Female students had higher mean scores on relationship with parents (Mean=38.28) than that of male students (Mean=37.29). And, female students had higher mean scores in relationship with teachers (Mean=40.79) than that of male students (Mean=38.78). So, it was found that female students were significantly higher than male students in relationship with parents scale and relationship with teachers scale.

Table 10 Comparison for Social Relations by Specialized Combination

Variable	Combination	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Overall Social Relations	Combination-7	504	112.72	10.339	4.051**	1015	0.000	2.461
	Combination-1	513	110.26	9.001				

Note: The mean difference is significant at the 0.01 level.

Table 10 showed that there was significant difference in overall social relations between Combination-7 and Combination-1 students ($p < 0.01$). The average mean score of Combination-7 students was 112.27 and that of Combination-1 students was 110.26. The result of the whole sample revealed that Combination-7 students had higher mean scores in social relations than that of Combination-1 students. So, it was found that Combination-7 students were significantly higher than Combination-1 students in overall social relations.

In order to know in which subscales of social relations that Combination-7 students were higher, the mean comparison was conducted by using independent sample *t* test again. The results were shown in Table 11.

Table 11 Comparison of Mean, Standard Deviation and the Result of Independent Sample *t* test for Subscales of Social Relations by Specialized Combination.

Subscales	Combination	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>P</i>	<i>MD</i>
Relationship with parents	Combination-7	504	38.41	4.519	3.951*	1015	0.000	1.081
	Combination-1	513	37.33	4.204				
Relationship with peers	Combination-7	504	33.99	4.650	2.167**	1015	0.030	0.618
	Combination-1	513	33.37	4.441				
Relationship with teachers	Combination-7	504	40.32	4.528	2.724**	1015	0.007	0.762
	Combination-1	513	39.56	4.392				

Note: *The mean difference is significant at the 0.01 level.

Note: **The mean difference is significant at the 0.05 level.

Note: *** The mean difference is significant at the 0.01 level.

Table 11 revealed that there was significant difference in relationship with parents scale between Combination-7 and Combination-1 students ($p < 0.01$). The average mean score of Combination-7 students was 38.41 and that of Combination-1 students was 37.33. Therefore, Combination-7 students had higher mean scores in relationship with parents than that of Combination-1 students. So, it was found that Combination-7 students were significantly higher than Combination-1 students on relationship with parents scale.

And, Combination-7 students had higher mean score in relationship with peers (Mean=33.99) than that of Combination-1 students (Mean=33.37, $p < 0.05$). And then, Combination-7 students had higher mean score in relationship with teachers (Mean=40.32) than that of Combination-1 students (Mean=39.56, $p < 0.01$). So, it was found that Combination-7 students were higher in relationship with peers and relationship with teachers.

Table 12 Mean and Standard Deviation for Social Relations by Schools

Variable	Schools	N	Mean	SD
Overall Social Relations	School-1	182	113.23	9.375
	School-2	285	110.94	10.521
	School-3	250	111.34	9.424
	School-4	164	111.51	9.841
	School-5	136	110.49	8.931
	Total	1017	111.48	9.760

According to Table 12, School 1 had the highest mean score (113.23) in students' social relations. School 2 and School 5 possessed the lowest mean scores (110.94 and 110.49) among five schools.

Table 13 The Result of ANOVA for Social Relations by Schools

Variable		Sum of Squares	df	Mean Square	F	Sig.
Overall Social Relations	Between Groups	776.100	4	194.025	2.045	.086
	Within Groups	96011.695	1012	94.873		
	Total	96787.795	1016			

As above mentioned ANOVA result in Table 13, it was found that there was no significant difference in social relations among schools, $F(4,1012)=0.086$, $p > 0.05$. It was revealed that all the participants did not differ in their social relations among selected schools. From that point, it can be obviously identified that school location cannot effect on students' social relations.

Relationship between Self-Esteem and Social Relations

To investigate the relationship between students' self-esteem and social relations, the Pearson's Product Moment Correlation was calculated and the result was shown in Table 14.

Table 14 Relationship between Self-esteem and Social Relations

Variables	Self-esteem	Social Relations
Self-esteem	-	.391**
Social Relations	.391**	-

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Table 14 indicated the correlation matrix of the students' self-esteem and social relations. According to the result, there was an association between self-esteem and social relations

because the correlation coefficient was statistically significant ($r=0.391$, $p<.01$). So, it was believed that self-esteem was positively correlated with social relations in Grade 9 students. In other words, it can be said that students who have high self-esteem will possess social relations. To be specific, the correlation analysis was conducted to find out the correlation coefficient between subscales of self-esteem and social relations (see Table 15).

Table 15 Inter-correlation for Subscales of Self-Esteem and Social Relations

Variables	Self-Competence	Self-Liking	Social Relations
Self-Competence	1	.486**	.331**
Self-Liking		1	.342**
Social Relations			1

Note: Correlation is significant at the 0.01 level (2-tailed).

Table 15 showed the correlation between subscales of self-esteem and social relations of Grade 9 students. It indicated that all subscales were significantly correlated with social relations of Grade 9 students. Among the subscales, self-liking ($r=.342$) was more closely related to social relations than self-competence ($r=.331$). It meant that students high self-liking will possess better social relations.

Conclusion, Discussion and Recommendation

Conclusion and Discussion

The main purpose of this study was to examine Grade 9 students' self-esteem and social relations. Then, this study is to investigate significant difference in students' self-esteem and social relations by gender, specialized combination, and social relations. Finally, this study explored whether there would be correlation between self-esteem and social relations or not. A survey study was conducted in 2016-2017 academic year to explore Grade 9 students' self-esteem and social relations. This study was performed in five Basic Education High Schools in Monywa Township, the total sample 1017 students including 432 males and 585 females.

Independent sample *t* test and one way analysis of variance (ANOVA) were computed to examine self-esteem and social relations of Grade 9 students by means of demographic differences such as gender, specialized combination and schools. The findings and results are discussed and concluded as follows.

Depending on the result of independent sample *t* test, there was significant difference in self-esteem between male and female students. The result revealed that female students were slightly higher than male students in overall self-esteem. The possible reason may be that females tend to have positive attitude towards themselves than males. Moreover, self-esteem between male and female students was compared with concerning with two subscales. According to the result of *t* test, female students had higher than male students in all both two scales.

For social relations, there was significant difference between male and female students. The result of the present study showed that female students possessed better social relations than that of male students. The differences could be because of comfortable and better interpersonal relationship for females. The other reason may be that they tend to be more aware of their feelings and those of others than males. Moreover, the comparison of social relations between male and female students discussed concerning with three subscales. The results revealed that female students were higher than male students in all three subscales.

In this study, specialized combination was categorized into Combination-7 and Combination-1. This study explored that there was no significant difference in self-esteem by specialized combination. It meant that both Combination-7 and Combination-1 students did not differ in their self-esteem.

In order to know that the difference in social relations of students by specialized combination, the independent *t* test was used. The result revealed that there was significant difference in self-esteem between Combination-7 and Combination-1 students by specialized combination. It meant that Combination-7 students had higher social relations than that of combination-1 students. It is assumed that Combination-7 students are capable to make friends easily and be aware of others' feelings as compared with Combination-1 students. Moreover, the comparison of social relations between Combination-7 and Combination-1 students discussed concerning with three subscales. According to the result of *t* test, Combination-7 students were significantly higher than that of Combination-1 students in all three subscales.

Moreover, ANOVA results were utilized to investigate differences in self-esteem of Grade 9 students by schools. The mean score of School 2 was the highest in self-esteem and that of school 4 was the lowest score among selected schools. Exactly, ANOVA results of self-esteem produced that there was significant difference in self-esteem of students.

To observe more detailed information of which schools had significant differences, Post Hoc Test (Tukey HSD) was conducted. And, Tukey's result of self-esteem was found significantly different between students from School 2, School 3 and School 4. The gaps between those schools may be that, positive social relationship between teachers and students in schools, supportive school community as well as safe school environment may influence on students' self-esteem. The other factor may be that psychological and social aspects of students who have been bullied and those who have bullied in schools.

In the correlation analyses, Pearson Correlation revealed that self-esteem was positively correlated with social relations ($r = .391, p < 0.01$). Due to the positively relationship between self-esteem and social relations, it can also be said that students who have high self-esteem will possess better social relations.

Finally, inter-correlation for the subscales of self-esteem and social relations was also explored. The results indicated that subscales in self-esteem were positively correlated with social relations. According to the result, subscales of self-esteem support to improve social relations of students.

Thus, the main contribution of this research can be concluded that self-esteem and social relations was significantly correlated with each other to some extent and there were significant differences in self-esteem social relations by gender, specialized combination and schools.

Based on the research, the present study found that female students possess better social relations than that of male students. To improve males' social relations, they need to try to understand their feelings in relationship with others. And then, they need to aware others' feelings and build better relations with them. Moreover, students' social relations were affected by specialized combinations. Combination-7 students had better social relations than Combination-1 students. This finding suggests that students who specialized Combination-1 need to be nurtured more familiar relationships with their parents, peers and teachers.

So, it is recommended for improving self-esteem of students who are encountering today's new opportunities and challenges, the instructor should make great emphasis in order to raise the level of students' self-esteem. So, the following steps may be required to enhance the level of adolescents' self-esteem by headmasters, teachers and parents.

- (1) Headmasters, teachers and parents should recognize and praise students whenever they do a good thing.
- (2) Teachers should possess warm and positive attitude towards students and should be aware of their academic, socio-emotional and personal problems and skills to guide and counsel them.
- (3) Teachers and parents should give students opportunities to demonstrate their competence so as they will feel that their contributions valuable.
- (4) Teachers and parents should give emphasis on how to improve their positive self-esteem.
- (5) Those students having low self-esteem should be provided proper counseling by the counselor.

Students' social relations can be enhanced with proper guidance and providing opportunities to participate in social situations. So, it is recommended that different training programs should be organized in schools to enhance students' social relations which in turn will enhance their self-esteem. Teachers should make use of various methods and teaching techniques to improve social relations of students. More frequent experiences should be provided to students in development of social relations and self-esteem as these factors help in the development of right attitude.

So, based on the findings and literature review, the following suggestions and recommendations were made for improving social relations of students.

- Students should be trained to have confidence in social relationships.
- Students should be encouraged to take part in team works and group activities in schools.
- Students should be helped in achieving their academic and social outcomes.

Therefore, the above recommendations should be applied to improve self-esteem and social relations of students.

Limitations of the Study

When interpreting the results obtained, it is important to take into account some limitations of this study. First, the samples of population were only Grade 9 students from five Basic Education High Schools in Monywa Township. So, the sample size is so small to generalize the findings of this study to all Grade 9 students in Myanmar. Second, the researcher did not consider other demographic factors such as family structure, socio-economic status, religion and birth order in this study. Finally, in this study, only quantitative research method was applied due to short time allocation.

Suggestions for Further Researches

The current research is merely focused on Grade 9 students from Monywa Township. So, further research needs to explore whether self-esteem displays the same predictive value for social relations at different developmental stages and also to analyze the differences in the relations between self-esteem and social relations among other levels of grade such as undergraduate and postgraduate students from diverse localities and diverse backgrounds.

Teachers should be aware of the importance of self-esteem and need to possess high self-esteem to be successful in their teaching profession. Teachers who have high self-esteem can be a better guide to improve students' self-esteem. Besides, teacher's social relation plays an important role to improve students' social relations. Hence, further study should be conducted on self-esteem and social relations of teachers as well as prospective teachers from education colleges and universities of education.

In addition to parents' attitudes are very important in shaping their children's self-esteem. So, further study should be conducted on parents' attitudes and their children's self-esteem.

Although Self-Liking/Self-Competence Scale-Revised Version (SLCS-R) has been largely used in individual differences research for measuring Self-esteem, it would be beneficial to use a more established measure of self-esteem such as Rosenberg Self-Esteem Scale (RSE) in further research.

It is also needed to investigate with other concepts such as life satisfaction, parenting styles, self-concepts, loneliness, personality traits, happiness, motivation and psychological distress.

To sum up, this study should also be conducted among different school levels in order to get more detailed information. It is hoped that the findings of this research contribute cues for further research dealing with self-esteem and social relations.

Acknowledgements

First of all, I would like to express respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myo Thant (Pro-Rector, Sagaing University of Education) for their excellent arrangement and advice for all candidates.

I would like to offer special acknowledgement to Dr. Tin Maung Win (Associate Professor and Head of Department, Department of Educational Psychology, Sagaing University of Education) for his continuous encouragement, valuable advice and patient instruction throughout this study.

References

- Abraham, D. K. (2010). *Self-esteem and social relations of adolescents with learning disability*. Unpublished Dissertation. Christ University, 2010). Retrieved November 20, 2016, from http://repository.christuniversity.in/1857/1/thesis_deepu_abraham.pdf.
- Bandura, A. (1989). *Social foundations of thought and action: A social cognitive theory*, Englewood Cliffs, NJ: Prentice-Hall.
- Baron, R. A., & Byrne, D. (1991). *Social Psychology: understanding human interactions*. (6th Ed.). Boston, MA: Allyn & Bacon. Retrieved November 23, 2016, from <http://medind.nic.in/jak/t09/s1/jakt09s1p33.pdf>.
- Blake, & Slate. (1993). Internal/External Locus of Control, Self-Esteem, and Parental Verbal Interaction of At-Risk Black Male Adolescents. *The journal of social psychology*.
- Epstein, S. (1980). The self-concept: A review and the proposal of an integrated theory of personality. In E. Staub (Ed.), *Personality: Basic issues and current research* (pp. 82-132) Englewood Cliffs, NJ: Prentice-Hall.
- Harre, R. (1991). *The discursive production of selves. Theory and Psychology*.
- Heyman, W. (2000). The Self-Perception of a Learning Disability and its relationship to Academic Self-concept and Self-esteem. *Journal of Learning Disabilities*, 23, 473-475.
- Leman, P. J. & Duveen, G. (1999). Representations of authority and children's moral reasoning. *European Journal of Social Psychology*.
- Mead, G. H. (1934). *Mind, self, and society from the standpoint of a social behaviorist*. Chicago, IL. University of Chicago Press.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American journal of Adolescence*.
- Tafarodi, R. W., & Swamm, W. B. Jr. (1995). Self-liking and self-competence as dimensions of global self-esteem: initial validation of a measure, *Journal of Personality Assessment*, 65, 322-342. Retrieved November 24, 2016, from <http://www.psych.utoronto.ca/users/tafarodi/Papers/PID01.pdf>.
- Vygotsky, L. S. (1934/1962). *Thought and Language*, Cambridge, MA: MIT Press.

CONTINGENT SELF-WORTH AND INFERIORITY COMPLEX OF EDUCATION COLLEGE STUDENTS IN MANDALAY REGION

Kyu Kyu Hmwe¹, Pa Pa Oo²

Abstract

The main purpose of this study is to investigate contingent self-worth and inferiority complex of Education College students in Mandalay Region. Quantitative method and descriptive research design were used in this study. As the participants for this study, 1000 students (481 males and 519 females) from Education Colleges in Mandalay Region were selected by using simple random sampling technique. As research instruments, Contingencies of Self-worth Scale ($\alpha=0.787$) developed by Crocker, Luhtanen, Copper, and Bouvrette (2003) and Inferiority Complex Scale ($\alpha=0.944$) developed by Mitrovic (1998) were used. According to the results, Education College students had high contingent self-worth (CSW). Females' self-worth based more on CSW domains except approval from others and appearance CSWs in comparing by gender. First year students' self-worth was more dependent on CSW domains compared to second year students' self-worth. Moreover, College 1 students' self-worth based more on approval from others and appearance domains whereas College 2 students' self-worth based more on competition, family love and religious faith domains. In addition, the findings showed that most of the students felt no inferiority complex. Males felt more inferiority complex than females. Students in College 1 were likely to feel inferiority complex than those in College 2. Students with high extrinsic CSW felt more inferiority complex than those with low extrinsic CSW. However, there were no significant differences in inferiority complex among groups by grade, intrinsic CSW level, family structure, number of siblings and birth order. Correlation matrix showed that contingent self-worth was positively correlated with inferiority complex ($r=.149$). Then generally extrinsic CSW domains (especially approval from others and appearance domains) were stronger positively correlated with inferiority complex, than other CSW domains.

Keywords: Contingencies, Contingent Self-worth, Inferiority Complex

Introduction

Life totally freeing of psychological obstacles will be really sweet and peaceful for everyone. All people will experience both pleasant and unpleasant moods in their daily lives. Especially among adolescents, inferiority complex is becoming an increasingly alarming psychological problem nowadays. An inferiority complex is a painful, debilitating feeling of being less valuable than others. People experiencing an inferiority complex may have an actual deficit that makes them feel inferior. However, in many cases, inferiority complexes are caused by perceived deficits. These deficits often occur when a person measures himself according to an unrealistic ideal (Colman, 2006). From a developmental psychopathology perspective, it is important to assess vulnerability prior to the development of deleterious outcomes. Crocker and Park (2004) proposed that contingent self-worth creates vulnerability because people seek to validate their abilities and qualities in their contingent domains. If contingencies are a risk factor, it is essential to assess self-worth contingencies (defined as the extent to which an individual's feelings of overall self-worth are contingent on specific evaluative information): external contingencies (approval from others, appearance, competition and academic competence) and internal contingencies (family love, virtue and religious faith). Contingent self-worth becomes a worthy concept in addressing vulnerability for filtering the source of unhealthy thought. Because inferiority complexes are often the result of unhealthy thought processes and false beliefs, psychotherapists will often work with people to reframe negative and/or damaging thoughts and beliefs (Colman, 2006). Therefore, studies which focus on the relation between contingent domains in self-worth and inferiority complex become increasingly interesting topic for research to prevent harmful follow-up problems of inferiority complex.

¹ Tutor, Department of Educational Psychology, Monywa Education Degree College

² Assistant Lecturer, Department of Educational Psychology, Sagaing University of Education

Purpose of the Research

The main purpose of the study is to investigate contingent self-worth and inferiority complex of Education College students in Mandalay Region.

The specific objectives are -

- to find out whether there is a significant difference in contingent self-worth by gender, grade and Education College,
- to find out whether there is a significant difference in inferiority complex by gender, grade, Education College, family structure, number of siblings, birth order, extrinsic CSW level and intrinsic CSW level, and
- to examine whether there is a relationship between contingent self-worth (extrinsic and intrinsic CSWs) and inferiority complex of Education College students.

Definitions of Key Terms

Contingency : A contingency is a domain or category of outcomes on which a person has staked his or her self-esteem, so that a person's view of his or her value or worth depends on perceived successes or failures or adherence to self-standards in that domain (Crocker & Wolfe, 2001).

Self-worth : Self-worth is the sense of one's own value or worth as a person (*Webster's College Dictionary*, 2000).

Contingent self-worth (CSW) : Self-worth that is based on perceived successes and failures within particular social domains is known as contingent self-worth (Crocker & Wolfe, 2001).

Inferiority : A state of being inferior (Lanre Ajiboye, 2014).

Inferiority Complex : Inferiority complex may be defined as an abnormal or pathological state which, due to the tendency of the complex to draw unrelated ideas into itself, leads the individual to depreciate himself, to become unduly sensitive, to be too eager for praise and flattery, and to adopt a derogatory attitude toward others (Popenoe, 1939).

Review of Related Literature

Contingencies of Self-worth Theory

Crocker, Luhtanen, Cooper, and Bouvrette (2003) theorized that self-esteem anchored in specific individual domains identified as Contingencies of Self-worth (CSWs). Examining the different domains of CSW and the overall concept of self-esteem, provides implications for better predicting motivation, affect, and feelings of worth.

Crocker, Sommers and Luhtanen (2002) proposed that adolescents selectively anchor their worth in one or more of seven separate domains (appearance, approval from others, competition, family love and support, religious faith, virtue, academic competence) labelled Contingencies of Self-worth (CSW). For some people, self-esteem may depend on being attractive to others or beating others in competition. For others, self-esteem may depend on feeling that they are good persons or that family members love them. These individuals' self-esteem is thus contingent on these specific and important domains.

A factor analysis of CSW data suggested that the seven CSW subscales could be classified into either internally or externally contingent domains of self-worth (Crocker, Luhtanen, Bouvrette, & Copper, 2003). Internally contingent domains (religious faith, virtue, family love) are based on internally mediating appraisals of worth. Externally contingent domains (appearance, approval from others, competition, academic competence) are based more on the opinions of others or external sources. CSWs differ based on how easy it is to gain satisfaction in that area. More externally contingent areas have less stable levels of self-esteem and result in a lower typical self-worth level (Crocker, Karpinski, Quinn, & Chase, 2003). In contrast, those that are internally contingent are more easily and more readily satisfied, because gaining approval or praise does not depend on others providing it.

Adlerian Inferiority Complex

An inferiority complex is a lack of self-worth, a doubt and uncertainty, and feelings of not measuring up to standards. It is often subconscious and is thought to drive afflicted individuals to overcompensate, resulting either in spectacular achievement or extreme a social behaviour.

Classical Adlerian psychology makes a distinction between primary and secondary inferiority feelings. A primary inferiority feeling is said to be rooted in the young child's original experience of weakness, helplessness, and dependency. It can then be intensified by comparisons to siblings, romantic partners, and adults. A secondary inferiority feeling relates to an adult's experience of being unable to reach a subconscious, fictional final goal of subjective security and success to compensate for the inferiority feelings (Adler, 1907).

Method

Sampling

The participants of this study were students from Mandalay Education College and Meiktila Education College in Mandalay Region. All of the participants involved in this study were 1000 Education College students (481 males, 519 females) in (2018-19) academic year. The sample was chosen by using simple random sampling method.

Instrumentation

The research instruments were Contingencies of Self-worth Scale (CSW) and Inferiority Complex Scale. For the purposes of measuring contingent self-worth of students, Contingencies of Self-Worth Scale (CSW) developed by Crocker, Luhtanen, Copper, and Bouvrette (2003) was used. CSW is composed of seven subscales of contingent self-worth: (a) family love, (b) competition, (c) appearance, (d) academic competence, (e) religious faith, (f) virtue, and (g) approval from others. These seven subscales were composed of 5 items for each. The total items were 35 items in which 28 items were positively stated and 7 items were negatively stated. Individual students responded the questionnaire using a seven-point Likert scale, ranging from "1= strongly disagree", "2= disagree", "3= disagree somewhat", "4= neutral", "5= agree somewhat", "6= agree", and "7= strongly agree".

The key adapted to measure inferiority complex of students was a 40-item Inferiority Complex Scale developed by Mitrovic (1998). All items were positively stated. Individual students responded the questionnaire using a five-point Likert scale, ranging from "1= never", "2= rarely", "3= sometimes", 4= frequently" and "5= almost always".

Data Collection

Firstly, the permission for collecting data was requested from the Head of Educational Psychology Department and the supervisor. Next, gathering the permission from the principals of the respective Education Colleges to carry out the task of data collection. Then, 1000 Education

College students were randomly selected from Mandalay Education College and Meiktila Education College. After giving instructions for questionnaires, all Education College students took 30 minutes to complete all questions including the participants' demographic factors. The required data was gathered with the help of teachers from the selected Education Colleges during August, 2019.

Findings

Descriptive Statistics for Students' Contingent Self-worth

In order to study Education College students' contingent self-worth, Contingencies of Self-worth Scale was used.

Table 1 Descriptive Statistics for Students' Contingent Self-worth

Variable	No. of Items	Minimum	Maximum	Mean	SD
Contingent Self-worth	35	93	215	163.86	18.036

Since the total mean score (163.86) was higher than the theoretical mean score (140), participant students' self-worth was highly dependent on contingencies of self-worth domains. If they succeeded in the domains their self-worth based, their self-worth would be in a satisfactory condition.

Table 2 Descriptive Statistics for Subscales of Contingent Self-worth of Students

Subscales	No. of Items	Minimum	Maximum	Mean	SD
Approval from Others	5	5	32	16.34	4.624
Appearance	5	5	35	18.28	4.696
Competition	5	8	35	27.17	4.288
Academic Competence	5	9	35	23.98	3.730
Family Love	5	8	35	26.40	4.351
Virtue	5	5	35	26.00	4.698
Religious Faith	5	5	35	25.70	4.895

In comparing mean scores of subscales of contingent self-worth, high scores indicate a greater tendency to base self-worth on indicators in the domain assessed. Table 2 showed that participant students' self-worth mostly based on competition domain and least based on approval from others domain. This was because students might be in competitive environment and they might also have high self-confidence not to care others' views.

Table 3 Mean Comparisons and the Result of Independent Samples *t* Test for Subscales of Contingent Self-worth of Students by Gender

Subscales	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Approval from Others	Male	481	17.08	4.366	4.911***	998	.000	1.416
	Female	519	15.66	4.754				
Appearance	Male	481	19.21	4.414	6.159***	998	.000	1.797
	Female	519	17.41	4.787				
Competition	Male	481	26.64	4.758	-3.730***	998	.000	-1.015
	Female	519	27.66	3.739				

Subscales	Gender	N	Mean	SD	t	df	p	MD
Academic Competence	Male	481	23.22	3.711	-6.321***	998	.000	-1.464
	Female	519	24.68	3.611				
Family Love	Male	481	25.28	4.608	-7.954***	998	.000	-2.139
	Female	519	27.42	3.825				
Virtue	Male	481	25.28	5.151	-4.705***	998	.000	-1.396
	Female	519	26.67	4.129				
Religious Faith	Male	481	24.95	5.186	-4.668***	998	.000	-1.439
	Female	519	26.39	4.506				

Note: ***The mean difference is significant at the 0.001 level.

According to Table 3, males got higher mean scores on approval from others CSW than females, inconsistent with the findings of Crocker, Karpinski, Quinn, and Chase (2003); Crocker and Sanchez (2005); and Liuna Gena, and Tao Jiang (2013). Males obtained higher means on appearance CSW than females, inconsistent with the findings of Crocker, Karpinski, Quinn, and Chase (2003); Crocker and Sanchez (2005); and Liuna Gena, and Tao Jiang (2013). And females had higher means on competition CSW than males, inconsistent with the findings of Sanchez, and Crocker (2005); and Li Chen (2011). Then females had higher means on academic competence CSW than males, consistent with the findings of Crocker, Karpinski, Quinn and Chase (2003); Sanchez, and Crocker (2005); and Liuna Gena, and Tao Jiang (2013). Females got higher means on family love than males, consistent with the finding of Crocker and Sanchez (2005).

Table 4 Mean Comparisons and the Result of Independent Samples *t* Test for Subscales of Contingent Self-worth of Students by Grade

Subscales	Grade	N	Mean	SD	t	df	p	MD
Approval from Others	1 st Year	500	16.22	4.538	-.834	998	.404	-.244
	2 nd Year	500	16.47	4.708				
Appearance	1 st Year	500	18.23	4.746	-.276	998	.783	-.082
	2 nd Year	500	18.32	4.649				
Competition	1 st Year	500	27.50	4.015	2.418*	998	.016	.654
	2 nd Year	500	26.84	4.525				
Academic Competence	1 st Year	500	24.29	3.730	2.636**	998	.009	.620
	2 nd Year	500	23.67	3.707				
Family Love	1 st Year	500	26.71	3.887	2.294*	998	.022	.630
	2 nd Year	500	26.08	4.752				
Virtue	1 st Year	500	26.17	4.631	1.138	998	.256	.338
	2 nd Year	500	25.83	4.763				
Religious Faith	1 st Year	500	26.18	4.826	3.108**	998	.002	.958
	2 nd Year	500	25.22	4.922				

Note: *The mean difference is significant at the 0.05 level.

**The mean difference is significant at the 0.01 level.

In determining self-worth, first year students more considered academic competence, religious faith, competition and family love contingencies of domains compared to second year students in accordance with Table 4. However, there were no significant differences in the

domains of approval from others, appearance and virtue contingencies between first year and second year students.

Table 5 Mean Comparisons and the Result of Independent Samples *t* Test on Subscales of Contingent Self-worth of Students by Education College

Subscales	College	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Approval from Others	College 1	500	16.87	4.602	3.591***	998	.000	1.044
	College 2	500	15.82	4.590				
Appearance	College 1	500	18.78	4.582	3.446***	998	.001	1.018
	College 2	500	17.77	4.757				
Competition	College 1	500	26.73	4.577	-3.223***	998	.001	-.870
	College 2	500	27.60	3.934				
Academic Competence	College 1	500	23.82	3.671	-1.357	998	.175	-.320
	College 2	500	24.14	3.785				
Family Love	College 1	500	25.90	4.388	-3.605***	998	.000	-.986
	College 2	500	26.89	4.260				
Virtue	College 1	500	25.75	4.713	-1.664	998	.096	-.494
	College 2	500	26.25	4.676				
Religious Faith	College 1	500	25.24	4.897	-2.937**	998	.003	-.906
	College 2	500	26.15	4.857				

Note: **The mean difference is significant at the 0.01 level.

***The mean difference is significant at the 0.001 level.

Table 5 reveals that College 1 students' self-worth were more contingent on approval from others and appearance domains than College 2 students. However, College 2 students' self-worth was less contingent on competition, family love and religious faith domains compared to College 2 students. It was also indicated that all students in College 1 and College 2 deeply accepted academic competence and virtue contingencies were important in finding their self-worth.

Descriptive Statistics for Students' Inferiority Complex

In order to study Education College students' inferiority complex, Inferiority Complex Scale was used.

Table 6 Descriptive Statistics for Students' Inferiority Complex

Variable	No. of Items	Minimum	Maximum	Mean	SD
Inferiority Complex	40	43	184	107.99	25.014

Since the total mean score (107.99) was lower than the theoretical mean score (120), most of the students did not feel inferiority complex.

Table 7 Mean Comparison and the Result of Independent Samples *t* Test for Students' Inferiority Complex by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Inferiority Complex	Male	481	110.61	25.470	3.199***	998	.001	5.041
	Female	519	105.57	24.358				

Note: ***The mean difference is significant at the 0.001 level.

Table 7 indicates that feelings of inferiority were significantly more common among males than females. This result was inconsistent with the finding of Goodwin and Marusic (2003). Jayapaul (2015) found that there was no significant difference in the inferiority complex of students based on gender.

Table 8 Mean Comparison and the Result of Independent Samples *t* Test for Students' Inferiority Complex by Grade

Variable	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Inferiority Complex	First Year	500	109.10	25.076	1.398	998	.163	2.210
	Second Year	500	106.89	24.927				

According to Table 8, it can be interpreted that inferiority complex did not depend on grade.

Table 9 Mean Comparison and the Result of Independent Samples *t* Test for Students' Inferiority Complex by Education College

Variable	College	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Inferiority Complex	College 1	500	112.35	25.803	5.596***	998	.000	8.722
	College 2	500	103.63	23.424				

Note: ***The mean difference is significant at the 0.001 level.

Based on the result of Table 9, students in Education College 1 were likely to feel more inferiority complex than those in Education College 2. Inferiority complex is different in accordance with community influences (Collins, 1985).

Although students' inferiority complex by family factors such as family structure, number of siblings and birth order, it was found that there were no significant differences among groups.

Extrinsic contingent self-worth (extrinsic CSW) refers to the self-worth based on externally contingent domains (approval from others, appearance, competition and academic competence). Scores on extrinsic CSW were split at the median to create high and low extrinsic contingent groups. More specifically, participants who scored at the median ($Mdn = 86$) or lower than the median formed the low extrinsic contingent group ($n = 524$) and those who scored higher than the median formed the high extrinsic contingent group ($n = 476$).

Table 10 Mean Comparison and the Result of Independent Samples *t* Test for Students' Inferiority Complex by Grade by Extrinsic CSW Level

Variable	Extrinsic CSW Level	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Inferiority Complex	Low	524	103.97	23.606	-5.381***	998	.000	-8.441
	High	476	112.41	25.786				

Note: ***The mean difference is significant at the 0.001 level.

Table 10 shows that there was significant difference in inferiority complex between students in high group and students in low group ($p < 0.001$). Therefore, it was found that students with high extrinsic CSW level felt more inferiority complex than students with low extrinsic CSW level.

Intrinsic contingent self-worth (intrinsic CSW) means the self-worth based on internally contingent domains such as family love, virtue and religious faith domains. Scores on intrinsic CSW were split at the median to create high and low intrinsic contingent groups. More specifically, participants who scored at the median ($Mdn = 79$) or lower than the median formed the low intrinsic contingent group ($n = 507$) and those who scored higher than the median formed the high intrinsic contingent group ($n = 493$).

Table 11 Mean Comparison and the Result of Independent Samples *t* Test for Students' Inferiority Complex by Intrinsic CSW Level

Variable	Intrinsic CSW Level	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Inferiority Complex	Low	507	107.01	24.542	-1.263	998	.207	-1.998
	High	493	109.00	25.475				

Based on the result of independent samples *t* test, level of intrinsic CSW did not significantly affect inferiority complex of students.

Table 12 Relationship between Contingent Self-worth and Inferiority Complex

Variable		Inferiority Complex
Contingent Self-Worth	Pearson Correlation	.149***
	Sig. (2-tailed)	.000
	Number	1000

Note: ***Correlation is significant at the 0.001 level (2-tailed).

According to the results, there was a significant positive correlation between contingent self-worth and inferiority complex ($r=.149$).

When self-esteem is contingent, success feels particularly good because succeeding at a task means that one is a success and therefore a worthy human being but failure in contingent domains is particularly painful because it means one is a failure and therefore worthless. The stress and anxiety associated with contingent self-esteem and feeling worthlessness due to contingent self-worth may also affect mental health (Crocker & Knight, 2005). Inferiority complex is one of mental illness. Because contingent self-worth and inferiority complex were positively correlated in this study, this result was in line with the findings Crocker and Knight (2005).

Table 13 Relationship between Extrinsic / Intrinsic CSW and Inferiority Complex

Variable		Inferiority Complex
Extrinsic CSW	Pearson Correlation	.194***
	Sig. (2-tailed)	.000
Intrinsic CSW	Pearson Correlation	.059
	Sig. (2-tailed)	.063
	Number	1000

Note: ***Correlation is significant at the 0.001 level (2-tailed).

According to Table 13, there was a positive relationship between extrinsic CSW and inferiority complex and the correlation coefficient was statistically significant at 0.001 level. The more extrinsic CSW scores the students got, the more inferiority complex they felt. The strength of relationship was weak. There was also positive correlation between intrinsic CSW and inferiority complex. The degree of correlation was very weak ($r=.059$). Having high CSW in external domains can be associated with negative effects (Pachankis & Hatzenbuehler, 2013). Individuals who base their self-worth in more external domains are more likely to experience a host of negative consequence (Knauff, 2005).

According to the result of correlation for subscales of contingent self-worth and inferiority complex, approval from others and appearance subscales were significantly and stronger positively correlated with the inferiority complex of students ($r=.242$ and $r=.196$), than other subscales.

Discussion and Suggestions

According to the results, Education College students' contingent self-worth was high: success and failure within their self-worth resources determine their sense of self-worth. Students' self-worth highly based on competition, family love, virtue, religious faith, academic competence domains. Among the self-worth contingencies, competition domain was the most contingent domain. As Education College students, they wanted to join the Bachelor of Education (B.Ed.) degree. Only a few students have a chance to join the degree after 2 years training in Education College. Consequently, they were in competitive environment and their self-worth was highly contingent on competition domain. Students cared less on approval from others and appearance. It seems that they have enough confidence on self not to care others' views.

In the mean comparison of contingent self-worth between male and female students, males' self-worth was dependent more on approval from others CSW than females'. Adolescent males are likely to base their self-worth on others' approval and especially they need more social acceptance than females. Males' self-worth also based more on appearance CSW than females'. Nowadays, appearance being attractiveness becomes important for people who care others' view. Females considered competition, academic competence, family love, virtue and religious faith domains in determining self-worth while males cared others' views and worried about their appearance. According to Myanmar culture, most of females value more affection, capability and perfect virtue for their self-worth than males.

According to grade, first year students' self-worth based more on academic competence, religious faith, competition and family love domains. After Matriculation exam, students started college life. The belief mostly influencing during Matriculation standard that academic competency gives a better life still influences first year students. Success in competition is important for them. They also believe that religious faith carries success for them. Moreover, they used to value family affection. No significant differences in the domains of approval from others, appearance and virtue between first year and second year students occurred.

Contingent self-worth of students was explored according to Education College. That is why selection of contingencies of self-worth is influenced by social influence (Crocker & Luhtanen, 2003) and cultural norms and values (Quade, 2013). College 1 students' self-worth based more on approval from others and appearance domains. At that time, College 2 students' self-worth based more on competition, family love and religious faith domains. These differences in self-worth bases were because of different social environment students experienced. There were no significant differences in the domains of academic competence and virtue by Education College.

In this study, inferiority complex of students was significantly different according to gender. That showed gender affects the inferiority feelings of students. Since Education College students are prospective teachers and teachers' world is female dominance environment (by number of teachers), males seem to feel more inferiority complex than females.

Inferiority complex of students was not significantly different according to grade. Social influences of first year students and second year students experienced were no differences. Both first year and second year students felt little or no inferiority complex and they all were mentally healthy.

Because of environmental or social influences, inferiority complex of students was significantly different according to Education College factor. The cause for the structure of the order of rank within the culture of relationships and social activities varies greatly since almost anything and everything can become the cause of an inferiority complex (Park Seong Soo, 1998).

In this study, all students seemed to get family love and there were no significant differences in inferiority complex among groups by living with parents. There were also no significant differences in inferiority complex by number of siblings because all participant students were likely to get parents' love and attention. There was no much comparison with older siblings among groups and there were no significant differences by birth order.

Extrinsic contingent self-worth (externally contingent domains) are based more on the opinions of others or external sources. Since external contingencies of self-worth may contribute to vulnerability to depressive symptoms (Crocker, Luhtanen, & Sargent, 2006), caring others' views or external sources in determining self-worth makes students to feel inferiority complex. Consequently, level of extrinsic contingent self-worth significantly affects the inferiority complex of Education College students. Intrinsic contingent self-worth (intrinsic CSW) are based on internally mediating appraisals of worth. Because gaining approval or praise does not depend on others providing it, self-worth domains that are internally contingent are more easily and more readily satisfied. Therefore, level of intrinsic CSW did not significantly affect inferiority complex of students.

Although contingencies of self-worth represent the domains in which success could prove self-worth and value, they also create stress because failure in these domains could prove the worthlessness. The hope of achieving self-worth by satisfying contingencies may come at a high price, in terms of the stress and psychological vulnerability that contingencies of self-worth engender (Crocker & Luhtanen, 2003). Therefore, contingent self-worth and inferiority complex were positively correlated.

Knauff (2005) argued that individuals who base their self-worth in more external domains are more likely to experience a host of negative consequences. Pachankis and Hatzenbuehler (2013) also assumed that having high CSW in external domains can be associated with negative effects. Nevertheless, generally, the more internal contingencies, such as virtue and religious faith, are not associated with many of the negative outcomes that the more external contingencies, such as appearance and approval from others, are. Interactions between different domains of contingencies have rarely been examined (Villacorta, 2006).

Inferiority feelings are experienced by everyone and are important to enhance the growth of individual. But these can limit daily life activities are not necessarily good (Adler, 1952). In coping inferiority complex, self-feelings are important to know. Knowing contingencies that self-esteem anchors is necessarily important to find out the psychological vulnerable areas. To overcome inferiority complex, having self-awareness is needed. Due to this, an individual can recognize his strengths and weaknesses and work accordingly. The individual should focus on his own strengths.

Another way to overcome inferiority complex is compensation. If a person feels that he lacks in certain ability, then that person can try to develop strength in some other ability. The more contingencies of self-worth a person has, the more psychological resources the person has for self-affirmation (Crocker & Wolfe, 2001). When the person faces failure in a contingent domain of self-worth, he can try to be successful in other contingent domains to keep his confidence. If he does not lose self-confidence, there is no way to develop an inferiority complex for him.

Social environment is important for a person to live freeing of inferiority complex according to this study. Taking in enjoyable activities and surrounding self with positive people, who like and encourage him to do better is necessary. Although family factors affect a little or more the inferiority complex of the person, he should not blame the things that cannot be changed. Instead of that, he should build himself with positive thoughts and realistic goals.

Limitations and Recommendation for Future Studies

The current study has several limitations related to issues with research potential. First, because it is a cross-sectional design, inferences about the causal directions between CSW and inferiority complex were unable to be drawn. More studies using other research methods (e.g., longitudinal design) are needed to examine the causal relationships between these constructs and clarify the possible underlying processes.

For future research, recommendation would be to rearrange with a more diverse sample. As participants, not undergraduates but graduates and non-students were also suggested. A wider range of subjects should be investigated in future studies.

Furthermore, in reissuing the survey, a broader range of ages should be represented. For this study, the participants were the ages of 16 to 24. A more even distribution of age groups should be considered.

Future studies can continue to explore whether viewing CSW as a two-dimensional perspective (contingencies of self-worth on positive and negative events), compared to a one-dimensional perspective, to be helpful increase the explanatory power of CSW. As a result of participants' completing self-report measures, it should be noted that their endorsements could be subject to response bias (Thorne, 2014).

Inferiority complex should also be checked by demographic factors such as age range, family background, family constellation, parents' job, parents' education and parents' incomes etc. If so, broader concepts of inferiority complex can be known in details.

Lastly, the seven variables that were measured a minimal of contingencies on which self-esteem could be based upon. Many other contingencies also exist such as power, identity, parental status, physical health, romantic relationship, etc.

Acknowledgements

We would like to express respectful gratitude to Dr. Saw Pyone Naing (Rector, Sagaing University of Education) and Dr. Myat Myat Thaw (Pro-Rector, Sagaing University of Education) for their excellent arrangement and official permission throughout the research. Our special acknowledgement expands to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Sagaing University of Education) for her continuous encouragement, valuable advice and patient instructions throughout this study. With heartfelt appreciation, we thank to Dr. Moe Moe Naing (Professor, Department of Educational Psychology, Sagaing University of Education) for enthusiastic helping and encouragement, and detailed suggestions towards this study. We would like to pay profound gratitude to Dr. Min Than (Professor and Head, Department of English, Sagaing University of Education) for valuable comments and necessary editing towards this paper.

References

- Adler, A. (1907). Study of organ inferiority and its Psychical compensation: A contribution to clinical medicine. Nervous and Mental Disease Monograph series, No.24. New-York: Nervous and mental disease Pub, *Asian journal of social sciences and humanities*, 2(1), 1-12.
- Adler, A. (1952). *The Science of Living*. London: Allen & Unwin.
- Collins, G.R. (1985). *Christian Counselling*. England: Word Publishing.
- Colman, A.M. (2006). *Oxford dictionary of psychology*. New York, NY: Oxford University Press. Retrieved August 1, 2019 from www.psychopedia.com
- Crocker, J., Luhtanen, R. K., Bouvrette A., & Cooper M. L. (2003). Contingencies of self- worth in college students: Theory and measurement. *Journal of Personality and Social Psychology*, 85, 894-908.
- Crocker, J., & Knight, K. M. (2005). Contingencies of self-worth. *Current Directions in Psychological Science*, 14, 200-203. doi: 10.1111/j.0963-7214.2005.00364.x

- Crocker, J., & Luhtanen, R. K. (2003). Level of self-esteem and contingencies of self-worth: Unique effects on academic, social, and financial problems in college students. *Personality and Social Psychology Bulletin*, 29, 701–712. doi:10.1177/014616720 3252881
- Crocker, J., & Park, L. E. (2004). The costly pursuit of self-esteem. *Psychological Bulletin*, 130, 392–414. doi:10.1037/0033-2909.130.3.392
- Crocker, J., & Wolfe, C. T. (2001). Contingencies of self-worth. *Psychological Review*, 108, 593–623. doi:10.1037//0033-295X.108.3.593
- Crocker, J., Karpinski, A., Quinn, D. M. and Chase, S. K. (2003). ‘When Grades Determine Self-worth: Consequences of Contingent Self-worth for Male and Female Engineering and Psychology Majors’. *Journal of Personality and Social Psychology*, 85(3), 507-516.
- Crocker, J., Luhtanen, R.K., & Sargent, J.T. (2006). Contingencies of Self-worth and Depressive Symptoms in College Students. *Journal of Social and Clinical Psychology*, 25(6):628-646. doi:10.1521/jscp.2006.25.6.628
- Crocker, J., Sommers, S. R., & Luhtanen R. K. (2002). Hopes dashed and dreams fulfilled: Contingencies of self-worth and graduate school admissions. *Personality and Social Psychology Bulletin*, 28, 1275-1286.
- Goodwin, R.D., & Marusic, A. (2003). Feelings of inferiority and suicide ideation and suicide attempt among youth. *Croatian Medical Journal*, 44(5), 553-557. Retrieved August 10, 2019 from www.cmj.hr
- Jayapaul, A. (2015). Inferiority complex in relation to their academic achievement among higher secondary students. *An International Refereed, Peer Reviewed And Indexed Quarterly Journal In Arts, Commerce, Education & Social Sciences*, 4(3).
- Knauff, K. (2005). *Contingent self-worth moderates the relationship between self-esteem and heart rate variability*. (Electronic Theses and Dissertations from 2009). Retrieved from <http://knowledgecommons.lakeheadu.ca/handle/2453/557>
- Lanre Ajiboye (Lance Spearman), (2014). *Inferiority Complex; A seemingly harmless personality blemish of grave*. Retrieved July20, 2019 from <https://books.google.com.mm>
- Li Chen (2011). *Contingent self-esteem in Chinese early and late adolescents*. (Master of Science in Education thesis). Retrieved from ProQuest Dissertation and Theses database. (UMI No.1503264)
- Liuna Gena, & Tao Jiang (2013). Contingencies of self-worth moderate the effect of specific self-esteem on self-esteem on self-liking or self-competence. *Social Behavior and Personality*, 41(1), 95-108. Retrieved November12, 2019 from <http://dx.doi.org/10.2224/sbp.2013.41.1.95>
- Mitrovic, D. (1998). *Dimensional verification of the existence of constructs infantile inferiority, inferiority complex and superiority complex arising from individual psychological theories of Alfred Adler*. (Unpublished Master thesis). Faculty of Philosophy, Novi Sad, Serbia.
- Pachankis, J.E. & Hatzenbuehler, M. L. (2013). The social development of contingent self-worth in sexual minority young men: An empirical investigation of the “Best little boy in the world” hypothesis. *Basic and Applied Social Psychology*, 35, 176-190. doi: 10.1080/01973533.2013.764304
- Park Seong Soo (1998). *Inferiority and Superiority Complexes can be Overcome*. Seoul: Du Ran No.
- Popenoe, P. (1939). “Your Inferiority Complex,” *Scientific American*. Retrieved July 28, 2019 from <https://books.google.com.mm>
- Quade, Y. S. French (2013). Adoption as a Contingency of Self-worth: An Integrative Approach to Self-esteem in Adopted Individuals, *Adoption Quarterly*, 16(2), 128-152. doi: 10.1080/10926755.2013.787574
- Sanchez, D.T., & Crocker, J. (2005). How investment in gender ideals affects well-being: The role of external contingencies of self-worth. *Psychology of Women Quarterly*, 29, 63-77.
- Thorne, B.J. (2014). *Contributions of academic contingent self-worth and math self-efficacy to self-handicapping and math test performance* (Unpublished Doctor of Philosophy Dissertation), University of Houston.
- Villacorta, M.A. (2006). *Contingencies of Self-worth: Implications for Self-determination* (PhD’s thesis). Retrieved from ProQuest Dissertation and Theses database. (UMI No. 3208564)
- Webster’s College Dictionary (2000). New York: Random House.