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Educational Psychology

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Relationship between Home Environment and Educational Aspiration of High School Students

Nay Chi Oo¹ & San Win²

Abstract

The main purpose of this study was to examine the relationship between home environment and educational aspiration of high school students. Quantitative approach was used in this study. In order to find out this relationship, questionnaire survey method was used. In this study, home environment was measured by using Home Environment Inventory consisting of 58 items with five point likert scale (Dr. Shanker Mishra, 1998). This questionnaires measured the psychological climate of home as perceived by children. Educational Aspiration questionnaires was developed by Dr. B. Krishna Prasad and Sherly. C .T, 2007 and consist of 48 items with five point likert scale. A total of 500 Grade 10 students from selected schools in Yangon Region and Kayah State participated in this study. The required sample was selected by using random sampling technique. The internal consistency (Cronbach alpha) of Home Environment Inventory was 0.69 and Educational Aspiration Questionnaires was 0.87 respectively.

According to the findings of the study, the results of independent sample *t*-test revealed that there were significant difference in each subscales of home environment and Educational Aspiration. There were no significant differences in Grade 10 students' home environment and Educational Aspiration by gender. But there were significant differences in Grade 10 students' home environment and educational aspiration by location. ANOVA results point out that there were slightly differences in home environment and educational aspiration by school.

To explore the relationship between home environment and educational aspiration of Grade 10 students, Pearson product moment correlation was calculated. Pearson correlation revealed that home environment was positively and significantly correlated with educational aspiration ($r=0.316$, $p< 0.001$). Next, regression analysis showed that Control, Punishment and Conformity in home environment were significant predictors of educational aspiration. The results indicated that 14% of the variance in educational aspiration could be predicted from the home environment.

Keywords: Home Environment, Educational Aspiration

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Introduction

The children are the richest resource of a nation, and they are designed and developed through carefully adapted socialization process at home and cautiously planned social learning experience in educational institutions as to match with the emerging demands of the worlds of competition and excellence. In order to achieve these objectives it is imperative to study, in detail the factors that study home environment and educational aspirations of High school students. Heredity and environment plays a vital role in determining the personality of the child. Home environment plays a crucial role in influencing and shaping the behavior and thought of the child especially in the development of aspiration and attitude. Each child needs a congenial atmosphere, as he is innocent, tender and delicate since birth. He needs someone who can nourish and nurture him with love and care. The optimal environment for the infant is one in which the child is cared for in his own home in the contact of a warm and continuous relationship with his own mother under conditions of varied input the child spends major part of its life in the family (Yadav, R. & Pandey ,S., 2016).

Adolescents is an important developmental phase of life. It is a path of leading to adulthood, an individual starts becoming independent from the family. For long period of his life, an adolescent is surrounded by the same other individual mostly family members, playmates and friends. Home environment, peer group and school have the most important influential power in the formation of adolescents' aspiration. Therefore, aspiration is the most significant determinants of eventual educational attainment as well as the occupational success in life (Kelvin, M., 1984 cited in Orr, A. S., 2014).

Educational aspiration and home environment are two important factors determining one's educational future. As a result of the technological advancement in today's societies, educational aspiration and home environment have become essential for the success of individuals and for the progress and development of nations. Home environment factors play a significant role in the improvement of students, especially in that of adolescent students. Home environment has an effect on their development. Parents' encouragement and attitudes play a very important role in the formation of students' positive attitudes toward life.

According to Sirin, Diemer, Jackson and Howell (2004) as cited in Gopal, V. R., and Aruna, P. K., 2017, Aspirations is defined as the educational and vocational dreams that students have for the future". It is closely related to home environment. Home environment has significant role in influencing and shaping the behavior and thoughts of a child especially in the development of aspiration and attitude. Home environment develops child's behavior. Therefore, the children's interaction with family and is always impacts the whole environment that surround him. This study has raised new perspectives on home environment and educational aspiration of Grade 10 students in Yangon Region and Kayah State. It is hoped that the findings from the research would help educators, scholars and educational decision makers in Myanmar to have a better understanding of home environment and educational aspirations of students.

Purpose of the Study

The main purpose of the study is to investigate the relationship between home environment and educational aspiration among Grade 10 students on the basis of gender, locality and school.

Review of Related Literature

Home Environment

Parish, Dostal & Parish (1981) stated that the environment of the home in which a child is reared can advance or hinder wholesome children development. Family relationships also determine in large measure the young person's developing attitudes toward home and family life. Forsstrom-Cohen & Rosenbom (1985) describe that one of the most important influences upon the adolescent is the emotional climate of the family. A cognitive home environment where parents are sensitive and responsive to the developmental needs of the child will help to enhance their academic achievement. According to Dr. Karuna Shankar Mishra, home environment can be divided into ten dimensions.

Educational Aspiration

Aspiration is the standard that an individual expects to research in the field of performance of which he has had some previous experience (Najmal Haq, 1980). Cronbach (1963) defines aspiration from three points of view first, what performance or aspects of it the individual considers

important and desirable, or what he wants to do, second how well expects to perform especially in the important aspects of the activity and the third, how important the performance is to him either as a whole or in its different aspects (as cited in Dr. B. Krishna and Sherly. C.T, 2007).

Educational aspiration plays a very important role in forming occupational aspiration of students. Education is an important role in forming student aspirations in that it serves to help students become more knowledgeable about the world, more sensitive and understanding of their relationship to it, and more eager to contribute to the community. Aspirations begin to be shaped early in child's life, but are modified by experience and the environment. Aspirations tend to decline as children mature in response to their growing understanding of the world and constraints imposed by previous choices and achievements. Aspiration means a strong desire to achieve something high or great. All individuals have some aspirations. At all stages of life people try for self enhancement. The aspirations during student period influence their behavior. The term educational aspiration or vocational choice is based on knowledge of traits. The aspirations level of an individual is an important motivating factor (Dr. Manta Chawla, 2018).

Method and Procedure

This study investigated the relationship between home environment and educational aspiration among Grade 10 students on the basis of gender, locality and school.

Participants

By using random sampling technique, the sample of Grade-10 students was identified. Subjects of the study are Grade 10 students from four selected high schools in Yangon Region and four selected high schools in Kayah State. A total of 500 Grade 10 students (250 males and 250 females) participated in this study.

Instrument

The home environment of the adolescents was assessed using the Home Environment Inventory (HEI) developed by Dr. Shanker Mishra, 1998. This questionnaires measured the psychological climate of home as perceived by children. This questionnaires contains 58 items to measure home environment in adolescents using 10 subscales.

Educational aspiration questionnaires was measured using items drawn from the Questionnaire developed by Dr. B. Krishna Prasad and Sherly .C.T, 2007. This questionnaires consist of 48 items to assess the educational aspirations of adolescents.

Results

Descriptive Analysis of Home Environment and Educational Aspiration of Students

Descriptive analysis revealed the mean and standard deviation of Home Environment and Educational Aspiration for the students.

Table 1. Descriptive Statistics for Home Environment and Educational Aspiration of Grade 10 students

Variables	N	Minimum Score	Maximum Score	Mean Score	Standard Deviation
Home Environment	500	32	177	113.67	20.309
Educational Aspiration	500	77	192	148.07	19.792

Comparison of Mean Differences for Home Environment of Students by Locality and School

In order to find out whether there were significant differences in home environment of Grade 10 students by locality and school, the results were shown in the following.

Table 2. Results of Independent Sample *t*-test for Grade 10 Students' Home Environment by Locality

Variables	Locality	Mean	SD	<i>t</i>	<i>p</i>
Control	Yangon	11.21	4.782	1.449	.148
	Kayah	10.62	4.343		
Protectiveness	Yangon	18.87	5.547	2.743**	.006
	Kayah	17.58	4.900		
Punishment	Yangon	11.18	5.009	1.327	.185
	Kayah	10.63	4.112		
Conformity	Yangon	18.24	2.041	2.813**	.005
	Kayah	17.69	2.337		
Social Isolation	Yangon	8.31	4.276	2.483*	.013
	Kayah	7.41	3.815		
Reward	Yangon	13.10	4.504	4.109***	.000
	Kayah	11.51	4.174		
Deprivation of Privileges	Yangon	5.20	4.018	-1.340	.181
	Kayah	5.69	4.056		
Nurturance	Yangon	15.15	5.388	1.683	.093
	Kayah	14.40	4.686		
Rejection	Yangon	2.43	3.099	-1.395	.164
	Kayah	2.82	3.185		
Permissiveness	Yangon	12.23	5.056	-.938	.349
	Kayah	12.84	4.662		
home environment (Total)	Yangon	116.14	21.354	2.739**	.006
	Kayah	111.20	18.929		

Note: * 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.

The results of independent sample t-test indicated that there was significant difference in home environment by locality. Therefore, Home Environment of students was influenced by locality.

Table 3. ANOVA results for Grade 10 Students' Home Environment by School

Variable	School	Sum of squares	df	Mean Squares	F
Home Environment (Total)	Between Group	9538.485	7	1362.64	3.416**
	Within Group	196274.403	492	196274.4	

Note: ** Mean difference is significant at the 0.01 level

Based on the results of ANOVA, statistically significant differences were found in Home Environment by school. Therefore, it is necessary to find out which school was different in Home Environment. Post Hoc analysis using Tukey method was conducted.

Table 4. Results of Tukey HSD Multiple Comparison Using Post Hoc Test for Educational Aspiration by School

Variable	(I)School	(J)School	Mean Difference	p
Home Environment	School (4)	School (8)	12.661*	.011
	School (3)	School (8)	13.131	.006

Note: * Mean difference is significant at the 0.05 level

** Mean difference is significant at the 0.01 level

It was observed that Home Environment of students of School (3) were significantly higher than School (8) at the 0.01 level. And then Home Environment of students of School (4) were significantly higher than School (8) at the 0.05 level.

Mean Comparison of Grade 10 Students' Educational Aspiration by Locality and School

Table 5. Results of Independent Sample *t*-test for Grade 10 Students' Educational Aspiration by Locality

Variables	Gender	Mean	SD	<i>t</i>	<i>p</i>
Educational Aspiration	Yangon	151.24	21.452	3.625***	.000
	Kayah	144.90	17.454		

*** Mean difference is significant at the 0.001 level

The results of independent sample *t*-test revealed that there were significant difference between Yangon and Kayah students in Educational Aspiration at the 0.001 level. It can be said that the Educational Aspiration of students was influenced by locality.

Table 6. ANOVA Results for Grade 10 Students' Home Environment by School

Variable	School	No of Students	Mean	SD	F
Educational Aspiration	School (1)	62	148.18	21.782	3.286**
	School (2)	63	152.16	24.700	
	School (3)	63	153.44	20.282	
	School (4)	62	151.13	18.717	
	School (5)	62	143.05	18.164	
	School (6)	63	150.56	17.816	
	School (7)	63	143.71	15.686	
	School (8)	62	142.21	17.194	

** Mean difference is significant at the 0.01 level

The ANOVA results revealed that the mean scores of Educational Aspiration were significantly different among schools ($p < 0.01$). The mean

score of Educational Aspiration from School (3) was the highest among other schools.

Table 7. Results of Tukey HSD Multiple Comparison Using Post Hoc Test for Educational Aspiration by School

Variable	(I)School	(J)School	Mean Difference	<i>p</i>
Educational Aspiration	School (3)	School (8)	11.235*	.029

* Mean difference is significant at the 0.05 level

According to the results of table 7, it was observed that Educational Aspiration scores of students of School (3) were significantly higher than that of School (8) at the 0.05 level.

The Relationship Between Home Environment and Educational Aspiration of Grade 10 Students

Table 8. Correlations between Home Environment and Educational Aspirations of Students

Variables	Educational Aspirations
Home Environment	.316
Significant	0.000
N	500

Correlation is significant at the 0.01 level.

According to the results in Table 8, it was found that there was a positive relationship between Home Environment and Educational Aspirations ($r=0.316$, $p<0.001$). It indicated that the higher the home environment of the students, the higher the educational aspirations of students.

Determination of Predicting Factors

To determine the best predicting factors of Home Environment for students' Educational Aspirations, the multiple regression analysis was conducted. The results were shown in Table 9 and Table 10.

Table 9. Model Summary of Educational Aspirations

Model 1	R	R²	Adjusted R²	Std. Error of Estimate
	0.392	0.154	0.136	18.399

Table 10. Multiple Regression Analysis on Each Subscales of Home Environment and Educational Aspirations

variables	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Std. Error	β		
Educational Aspiration	105.667	7.653		13.808***	0.000
Control	0.649	0.209	0.150	3.112**	0.002
Protectiveness	0.222	0.203	0.059	1.094	0.275
Punishment	0.481	0.214	0.111	2.249*	0.025
Conformity	0.889	0.417	0.099	2.133*	0.033
Social Isolation	-0.064	0.255	-0.013	-0.253	0.801
Reward	0.416	0.249	0.093	1.672	0.095
Deprivation of Privileges	-0.149	0.260	-0.030	-0.575	0.566
Nurturance	0.382	0.217	0.098	1.757	0.080
Rejection	-0.169	0.312	-0.027	-0.541	0.589
Permissiveness	0.083	0.182	0.021	0.460	0.646

The results showed that Control, Punishment and Conformity were significantly related with educational aspiration. Control, Punishment and Conformity were predictors of educational aspiration, ($\beta=0.150$, $p<0.01$), ($\beta=0.111$, $p<0.05$), ($\beta=0.099$, $p<0.05$). It can be interpreted that the higher Control, Punishment and Conformity, the higher the Educational Aspirations. The adjusted R-square value is 0.136. This indicates that

approximately 14% of the variance in Educational Aspirations can be explained from Home Environment. The model equation to predict the Educational Aspirations from students' Home Environment is,

$$AS=105.667+0.649C+0.481Pm+0.889Cm$$

Note; As= Educational Aspirations, C =Control, Pm=Punishment, Cm=Conformity

It has described that Control is the best predicting factor for Educational Aspirations of students in Yangon Region and Kayah State($\beta=0.150$). Again, Punishment is the second best predictor for Educational Aspiration of students in Yangon Region and Kayah State ($\beta=0.111$). Then Conformity is the third best predictor for Educational Aspiration of students in Yangon Region and Kayah State ($\beta=0.099$)

Conclusion

As a result of the research, the results of independent sample *t*-test revealed that there were significant difference in each subscales of home environment and Educational Aspiration. There were no significant differences in Grade 10 students' home environment and Educational Aspiration by gender. But there were significant differences in Grade 10 students' home environment and educational aspiration by location. ANOVA results point out that there were slightly differences in home environment and educational aspiration by school.

To explore the relationship between home environment and educational aspiration of Grade 10 students, Pearson product moment correlation was calculated. Pearson correlation revealed that home environment was positively and significantly correlated with educational aspiration ($r=0.316$, $p< 0.001$). Next, regression analysis showed that Control, Punishment and Conformity in home environment were significant predictors of educational aspiration. The results indicated that 14% of the variance in educational aspiration could be predicted from the home environment.

Research findings can provide a general overview on the importance of home environment towards students' educational aspiration. The home

and the family provide the first social environment to a child and determine what his first attitudes would be towards people and social activities. In the present study, the home environment and educational aspiration of grade 10 students indicated positive correlations. This result was consistent with previous research (Dr. Seema Pandey and Mr. Rishikesh Yadav, 2016). It can be said that students from better home environment of the students, the higher the educational aspiration of the students. There were no significant differences in Grade 10 students' home environment and Educational Aspiration by gender. It cannot be said that particularly gender of students are home environment and educational aspiration more or less. But there were significant difference in Grade 10 students' home environment and educational aspiration by location. It can be assumed that parents and students from Yangon region gets more information, care, encouragement about education, economic circumstances etc. than those from Kayah State. There were slightly differences in home environment and educational aspiration by school. It can be assumed that students from school (3) gets more information, parents of supporting, completer library and etc. than those from other schools.

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Relationship between Teacher Effectiveness and Mathematics Achievement of High School Students

Moe Moe Naing¹ & Ei Ei Phyoe²

Abstract

The main purpose of this study is to explore the relationship between teacher effectiveness and mathematics achievement of high school students. Mixed research method was used in this study. This study was conducted to investigate the relationship between instructional effectiveness, uses of assessments for student learning, positive learning environment, and personal quality of the teacher and mathematics achievement of high school students. Questionnaire on teacher effectiveness (Sujata Mishra, 2007), effective interview questions for finding the best teachers (TASB HR Services, 2015), teacher evaluation form (Hoyleton School District, 2009) and student questionnaire reflection (TIMSS and PIRLS, 2006) were used as research instruments. Mathematics Achievement Test developed by Naw Zin Win (2017) was used to examine mathematics achievement. It consists of 25 items ($\alpha=0.716$). Student rating questionnaire includes 20 items ($\alpha=0.817$). The sample was randomly chosen from selected 8 high schools of Yangon and Ayeyarwaddy Regions. A total of 16 mathematics teachers and their Grade 10 students participated in this study. By comparing the data from Cross-tabulation for the level of teacher effectiveness and level of mathematics achievement, teacher effectiveness was positively associated with mathematics achievement of high school students. According to student evaluation, there is a negative relationship between the age of teachers and ratings of teacher effectiveness. In comparing the level of teacher effectiveness by teaching experience in mathematics and teachers' academic qualifications, there is the positive relationship between teaching experience of mathematics and the teaching performance but there is no relationship between the teachers' academic qualifications and the teaching performance significantly.

Keywords: Teacher Effectiveness, Mathematics Achievement

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Introduction

Effective teachers help students to become good human being in the society and good citizen of the country. Effective teachers are essential for the accomplishment of an education system. A high demanding education system has made the teaching profession extremely challenging, as high performance is expected from teachers (Gkolia, 2004). The quality of the learners that an education system turns out is determined by the quality of teacher. In other words, the quality of teachers largely determines the quality of education in a society. An effective teacher is not only a candle to brighten a learner's future but also an ideal model whose learners imitate and learn for their life.

Effective teachers are very important for student learning. Stronge, Ward and Grant (2011) identified four dimensions that were used to characterize an effective teacher as follows;

- Instructional effectiveness
- Uses of assessment for student learning
- Positive learning environment
- Personal quality of the teacher

In an effort to identify the teacher effectiveness in relation to mathematics achievement, teachers meet the minimum requirements to be considered qualified is a first step toward ensuring students achievement. Teaching quality is known to be critical for students' education and life prospects in developed countries. However, little is known about how teacher quality affects student learning in Myanmar. So, this study is investigated the relationship between teacher effectiveness and mathematics achievement of high school students.

Purpose of the Study

The purpose of this study is to identify the relationship between teacher effectiveness and mathematics achievement of high school students.

Research Questions

1. What is the relationship between instructional effectiveness and mathematics achievement of high school students?
2. What is the relationship between the uses of assessment and mathematics achievement of high school students?

3. What is the relationship between the learning environment and mathematics achievement of high school students?
4. What is the relationship between the personal quality of the teacher and mathematics achievement of high school students?

Definition of Key Terms

Teacher Effectiveness

- **Instructional effectiveness** means instructional delivery, uses of technology, uses different teaching method, recognizes students' academic and personal goal and maximize instructional time (Stronge, Ward & Grant, 2011).
- **Uses of assessment** for student learning include assignments, tests, and activities, quizzes, etc. and giving feedback (Aina & Adedo, 2013).
- **A positive learning environment** means that a student feels comfortable, has a sense of rapport with their teacher and peers and believes they can be successful. (Elizabeth F. Barkley, 2010)

Teachers' personal quality includes interaction with students and motivation. (Stronge, Ward & Grant, 2011)

Mathematics achievement

- Mathematics achievement refers to the scores obtained from the result of the mathematics achievement test (MAT) based on the contents of mathematics for Grade 10.

Review of Related Literature

To understand the importance of teacher effectiveness associated with student achievement, it needs to know what the term "effective teaching" means. There are many ways to define good teaching. According to Columnist Willian Raspberry (1993), good teachers are caring, supportive, concerned about the welfare of students, knowledgeable about their subject, able to get along with parents, administers and colleagues, and genuinely excited about what they do.

Teaching effectiveness has been accepted as a multidimensional construct since it measures a variety of different aspects of teaching such as; subject mastery, effective communication, lesson preparation and

presentation (Onyeachu, 1996). The influence of teachers' teaching effectiveness on the learning outcome of students as measured by students' academic performance has been the subject of several studies (Adediwura and Tayo, 2007; Adu and Olatundun 2007; Lockhead and Komenan 1988; Schacter and Thum 2004; Starr, 2002). The above studies suggest that effective teaching is a significant predictor of students' academic achievement. Therefore effective teachers should produce students of higher academic performance.

Although teachers' strong effect would significantly influence students' academic achievement, other factors such as socio-economic background, family support, intellectual aptitude of student, personality of student, self-confidence, and previous instructional quality have been found that they also influence students' examination score (Starr 2002) either positively or negatively. To this end, Blankstein (1996) had stated that students' grades and test scores are not good indicators of the quality of teachers' instruction. In support of this view, a study carried out in Nigeria by Joshua et al. (2006) showed that Nigerian teachers condemn the use of student achievement scores as indicators of teachers' competence, performance or effectiveness.

Since students' academic scores are not the only predictors of teachers' effectiveness, researchers have sought other fairer ways of evaluating teachers' effectiveness. Students, administrators, colleagues and the teachers' self-evaluation have been used to evaluate teachers' effectiveness. Students' competence in the evaluation of the effectiveness of their teachers has been of great concern to researchers in education (Barnett et al. 2003; Imhanlahini and Aguele 2006; Pozo-Munoz et al. 2000).

Method

Sample of the Study

Participants of this study were mathematics teachers and their Grade 10 students from Yangon Region and Ayeyarwaddy Region by using random sampling technique, in the academic year of 2018-2019. The total of 16 mathematics teachers and their Grade 10 students from eight selected schools were chosen as samples.

Research Instruments

To examine teacher effectiveness, questionnaire on teacher effectiveness (Sujata Mishra, 2007), effective interview questions for finding the best teachers (TASB HR Services, 2015), teacher evaluation form (Hoyleton School District, 2009) and student questionnaire reflection (TIMSS and PIRLS, 2006) were used. For mathematics achievement, Mathematics Achievement Test developed by Naw Zin Win (2017) was used. It is the multiple choice test consisting of 25 items ($\alpha=0.716$).

Interpretation of Evaluating Teacher Effectiveness

Teacher Evaluation Rubric was adapted based on Danielson's framework. This Teacher Evaluation Rubric includes the following domains, with each domain including seven indicators of effective practice:

- Domain 1: Planning and Preparation
- Domain 2: The Classroom Environment
- Domain 3: Delivery of Instruction
- Domain 4: Professional Responsibilities

At the end of the evaluation process, the researcher scored the teachers on each criterion within four domains based on teacher effectiveness questionnaire. According to the total scores of 16 teachers attained for the process of evaluating teacher effectiveness on four domains, teachers' performance levels are categorized into four groups: highly effective, effective, improvement necessary and does not meet standards. Based on their cut-off score criteria, highly effective teachers were identified when their scores were 80th percentile ($90 \leq \text{Mean}$); effective teachers were identified when their score were 75th percentile (80-89); the teachers who need to improve were identified when their scores were 50th percentile (70-79) and the teachers who do not meet standards were identified when their scores were 25th percentile ($69 \geq \text{Mean}$). The numbers of highly effective teachers, effective teachers, teachers who need to improve and the teachers who do not meet standards were described in Table 1 and 2.

Table 1. Number of Teachers by Level of Teacher Effectiveness

Level of teacher effectiveness	Percentile (Pp)	Range	Teacher's Code	No. of Teachers
Highly Effective	80	90≤	T11,T12,T13,T14,T17	5
Effective	75	80-89	T21,T22,T23,T24	4
Improvement Necessary	50	70-79	T15,T25,T27	3
Does Not Meet Standards	25	69≥	T16,T18,T26,T28	4

Table 2. Level of Teacher Effectiveness by Teaching Experience in Mathematics and Teachers' Academic Qualifications

Level of Teacher Effectiveness	Teacher's Code	Teaching Experience in Mathematics	Teachers' Academic Qualifications
Highly Effective	T11	36	B.Sc (Maths), B.Ed
	T12	30	B.Sc, M.Sc (Maths), B.Ed
	T13	33	B.Sc (Maths), B.Ed
	T14	37	B.Sc (Phys), B.Ed
	T17	32	B.com (Statistics), B.Ed
Effective	T21	15	B.com (Statistics), B.Ed
	T22	18	B.Ecom (Statistics), B.Ed
	T23	20	B.Sc (Maths), B.Ed
	T24	13	B.Ed (Maths), M.Ed
Improvement Necessary	T15	10	B.Sc (Phys), PGDMA, B.Ed
	T25	12	B.Sc, M.Sc (Maths), B.Ed
	T27	10	B.Sc (Maths)
Does not meet Standards	T16	1	B.Ed (Maths)
	T18	5	B.A (Myan), B.Ed

Level of Teacher Effectiveness	Teacher's Code	Teaching Experience in Mathematics	Teachers' Academic Qualifications
	T26	6 months	B.A (Eng), DTED
	T28	2	B.Ed (Maths)

In this result, the teaching experience in mathematics of highly effective teachers is greater than the other teachers. However, teachers' academic qualifications and their teaching performance are not different significantly. Most of the teachers had B.Sc, B.Ed (maths) and the other teachers had B.Sc (phys), PGDMA, B.Ed and B.Com, B.Ed and B.Ecom (Statistics), B.Ed. And then, the researcher also found that the teacher who does not meet standards had BA (English), DTED and she had 6 months in teaching experience of mathematics, specifically. The highly effective teachers had 30 years and above of teaching experience in mathematics and the teachers who do not meet standards had 1-5 years of teaching experience in mathematics. The other teachers as the effective teachers and the teachers who need to improve had 10-20 years of teaching experience in mathematics. Thus, the researcher found that there is the positive relationship between teaching experience of mathematics and the teaching performance, and there is no relationship between the teachers' academic qualification and the teaching performance significantly.

Comparison of Level of Teacher Effectiveness and Students' Rating

According to Shock (1985), student evaluations on teachers provide rich information about teaching performance, but a number of factors beyond teacher effectiveness influence student evaluations. Teacher effectiveness is seen as the teacher's ability to facilitate students to achieve their highest level of independent thinking and skills. This obligates the teacher to possess many qualities like knowledge, skills, decision making and enthusiasm to teach. Students do discriminate between different characteristics of the teachers. Student feedback is the most commonly used feedback system for evaluation of teaching in any educational institution. Horner, Murray, and Rushton (1989) found a negative correlation between instructor age and ratings of teaching effectiveness. So, this section is to investigate whether student-rated teaching effectiveness affects the teacher effectiveness. To evaluate students' rating of teacher effectiveness, the descriptive statistics were used and the results were shown in Table 4.

Table 4. Comparison of Level of Teacher Effectiveness and Students' Rating

Level of Teacher Effectiveness	Teacher's Code	Range of Students' Rating
Highly Effective	T11, T12, T13, T14, T17	60-87
Effective	T21, T22, T23, T24	79-85
Improvement Necessary	T15, T25, T27	76-82
Does not meet standards	T16, T18, T26, T28	72-82

Results in table 4 showed that there are five teachers in highly effective group. Among them, T14 was rated as 60% of her students only. It may be due to the fact that among the highly effective teachers, she was 59 years old and rated as less effective in comparison conditions by students. Besides, there are four teachers in "does not meet standards" group. Among them, T28 was rated as 82% of her students. It may be fact that among the teachers who do not meet standards, she was 28 years old and rated as more effective than comparison conditions by students. It can be reasonably concluded that students rated the younger teachers as more effective than the older teachers. And then, the older teachers achieved more negative ratings on perception of friendliness and rapport than younger teachers. Thus, age and gender bias likely impact student evaluations of teaching. Since all of the teachers included in this study were female, the researcher also concluded that there is a negative relationship between the age of teachers and ratings of teaching effectiveness by students.

Level of Mathematics Achievement of Grade 10 students

Based on the Grading system used in Basic Education, students' achievement levels are categorized into four groups: Grade A, Grade B, Grade C and Grade D. In this regard, how to identify students' achievement level into Grade A, Grade B, Grade C and Grade D are shown in Table 5.

Table 5. Level of Students' Mathematics Achievement

Level of Mathematics Achievement	Score	Number of Students	Percentage
Grade A	80 and above	158	20
Grade B	60 to 79	105	14
Grade C	40 to 59	163	21
Grade D	Under 40	344	45
Total		770	100

According to Table 5, it was found that 20 percent of students have Grade A, 14 percent of students have Grade B, 21 percent of students have Grade C and 45 percent of students have Grade D out of 100.

And then, to confirm more exactly that the positive relationship between teacher effectiveness and mathematics achievement of high school students according to this study, Cross-tabulation of teacher effectiveness level and mathematics achievement were calculated.

Table 6. Results of Cross-tabulation by Level of Teachers' Effectiveness and Mathematics Achievement

		Level of Mathematics Achievement			
		Grade A	Grade B	Grade C	Grade D
Level of Teachers' Effectiveness	Highly Effective	134	50	50	35
		17.4%	6.5%	6.5%	4.5%
	Effective	22	46	33	48
		2.9%	6.1%	4.3%	6.2%
	Improvement Necessary	2	9	63	97
		0.3%	1.2%	8.2%	12.6%
	Does not meet Standards	0	0	17	164
		0%	0%	2.2%	21.3%

According to table 6, it was found that the percentage of the students in Grade A who were taught by highly effective teachers is highest in comparison within the levels of teacher effectiveness and levels of mathematics achievement. And, it was also found that the students in Grade D who were taught by highly effective teachers are 4.5%. The amount of this percent is obviously low. It may be due to the facts that although the teacher is highly effective, students may not be interested in mathematics, lack of mathematics self-efficacy and patience, confidence, have low attitude towards mathematics, have mathematics anxiety or may be due to self-regulation, peers, gender and parental involvement.

Analysis and Findings of Observation

After assessing the teachers' alternative responses by scoring rubrics, observation and interview were conducted to view the detail process upon these responses. The results pointed out that most of the teachers (more than 75%) showed the satisfactory effect on teaching mathematics. Then it was observed that the scores of each group (i.e.; highly effective, effective, improvement necessary and does not meet standards defined by results of level of teacher effectiveness have been mentioned in table 2) are in line with their performance level. In addition to the result of observation was confirmed by that of interview.

Analysis and Findings of Interview

The aim of interview procedure was to know teachers' instructional planning and preparation, classroom management, environment and safety. By comparing the results, in instructional planning and preparation, highly effective teachers design each lesson with clear, measurable, achievable goals closely aligned with standards and unit outcomes, effective teachers design lessons focused on measurable, achievable outcomes aligned with unit goals, the teachers who need to improve plan lessons with some consideration of long-term goals and the teachers who do not meet standards plan lessons covering textbook chapters. In classroom management, highly effective teachers successfully inculcate class routines up front so that students maintains them throughout the year, effective teachers teach routines and have students maintain them all year, the teachers who need to improve try to train students in class routines but many of routines are not maintained and the teachers who do not meet standards do not teach routines and is constantly threatening and punishing students. In environment and safety, highly effective teachers use room

arrangement, materials, and display to create an inviting climate and maximize students learning, effective teachers organizes classroom furniture, materials and display to support unit and lesson goals, the teachers who need to improve organize furniture and materials to support the lessons, with only a few decorative displays and the teachers who do not meet standards have a conventional furniture arrangement, hard-to-access materials.

For those reasons, quantitative and qualitative results are almost similar in such factors. Therefore, this study could be obtained for strong evidence.

Conclusion, Discussion and Recommendations

Conclusion

The main purpose of this study is to identify the relationship between teacher effectiveness and mathematics achievement of high school students. Participants of this research were mathematics teachers and their students from Yangon Region and Ayeyarwaddy Region by using random sampling technique, in the academic year of 2018-2019. The total of 16 mathematics teachers and their Grade 10 students from eight selected schools were chosen as samples. Mixed research method was used in this study. The major findings of this study and discussions are also presented.

By comparing the data from Cross-tabulation for the levels of teacher effectiveness and the levels of mathematics achievement, it was found that the teachers who are highly effective had most of their students achieved Grade A in mathematics, the teachers who are effective had most of their students achieved Grade B in mathematics, the teachers who need to improve had most of their students achieved Grade C in mathematics and the teachers who do not meet standards had most of their students achieved Grade D in mathematics. Thus, levels of teacher effectiveness can contribute to the students' mathematics achievement level. According to the results of the relationship between teacher effectiveness and mathematics achievement of high school students, teacher effectiveness was positively associated with mathematics achievement of high school students. Adu and Olatundun (2007) stated that effective teachers are significant predictor of students' academic achievement. Therefore, the study also reports that effective teachers can produce student of higher mathematics achievement.

Suggestions and Recommendations

Findings of this research should be considered for mathematics achievement of high school students based on teacher quality such as delivery of instruction, the ability of creating learning environment, the uses of assessment and the personal quality of the teacher. The research has shown a link between teacher effectiveness and mathematics achievement of high school students. However, teacher effectiveness is not the sole determinant of students' academic outcome. Students' related factors such as intelligence, parental education, socio-economic status and personality which vary over very wide margins in the study area and school environment related factors such as class size, infrastructure and facilities in the schools may have significant effect on the students' academic achievement.

Limitations of the Study

Despite the efforts made by researcher, this study suffered from a number of limitations. Firstly, the researcher could not develop teacher evaluation model because of time limit.

Secondly, although there are many ways in evaluating teacher effectiveness, the researcher could mainly conduct teacher self-report measure, classroom observation, interview and students' rating. And then, principal evaluation is an important role in evaluating teacher effectiveness. But, the researcher couldn't effort.

Finally, mathematics achievement of high school students depend not only on teacher effectiveness but also tuition-effect, family related factors such as parents' support and interest in their children education and other students' related factors such as mathematics self-efficacy, mathematics anxiety and gender. However, in this study, these factors were not included. So, the researcher would like to suggest that these factors should be considered in future studies.

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An Analysis of The Effect of Reflective Prompts on Grade 6 Students' Metacognitive Skills

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Abstract

The main purpose of this study was to investigate the effect of using reflective prompts on metacognitive skills of Grade-6 students. Single subject Experimental Research Design was used in this study. Forty-eight Grade-6 students who studied at the Practicing Middle School of Hlegu Education College, Yangon Region, in 2017-2018 Academic Year were selected as sample. Firstly, the researcher developed four PBL problems based on Chapter-5 (Earth and Space) prescribed in Grade-6 General Science Textbook. Then, twelve reflective questions and seven learning stages of problem-based learning process were carried out on the experimental group for a period of nearly forty hours. Finally, student's metacognitive skills were examined by the use of Metacognitive Skills Inventory as pre-test and post-test measure. According to the result of dependent sample t-test, significant differences in means were found in all the knowledge and regulation components of metacognition. So, it can be said that students developed metacognition after intervention. The results showed that using reflective questions in the seven learning stages of PBL can definitely provide the students greater opportunity for the development of metacognitive skills.

Keywords: Reflective Prompts, Metacognitive Skills

Introduction

In recent years, Myanmar's national education system has come under increased public scrutiny and debate due to growing expectations from students, parents, employers and citizens for education reforms that will improve access, quality and equity in the main education sub-sectors: preschool, kindergarten, primary, secondary, alternative education, technical and vocational education and training and higher education. Furthermore, there is broad consensus that major shifts are required in the coming years to transform the national education system and ensure that all

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students progress through the education cycle, achieve quality learning standards and fulfil their career and lifelong learning goals and aspirations.

What is expected from education is to enable individuals to become an effective problem solver in their actual lives (Chin & Chia, 2004). Barrows (1996) also defined that problem-based learning is an effective instructional method that allows students to develop skills in problem definition and problem solving, by presenting complex problems in "real world" situations. Hmelo-Silver (2004) described PBL as an instructional method in which students learn through facilitated problem solving that centers on a complex problem that does not have a single correct answer. She noted that students' work in collaborative groups to identify what they need to learn in order to solve a problem in self-directed learning, apply their new knowledge to the problem, and reflect on what they learned and the effectiveness of the strategies employed. According to Barrows & Tamblyn (1980), Problem-based learning (PBL) as a curricular innovation emerged in medical education. With its roots in case- study methods of instruction, PBL has also become increasingly popular across disciplines in higher education and K-12 education settings.

When most of the children solve the complex problems, it can be tempting to give up and resort to four words no parent ever wants to hear: "I can't do it." They need to be able to make the transition from 'I can't to the proactive 'How can I?' In order to thrive, the children need to be able to make the transition from the negative "I can't" to the proactive "How can I?" To do that, they need to think about why they're stuck, what's frustrating them, what they would need to get unstuck. They need to think about their own thinking. There's a word for that, and it is metacognition. After studying the problem-based learning, the researcher decided to study the development of metacognitive skills in Grade-6 students through reflective prompts in the learning stages of PBL approach. Hence the researcher conducted this study to investigate the impact of using reflective prompts and their support in problem-based learning approach on Grade-6 students' metacognitive skills.

Literature Review

Reflective Prompts

Reflective prompts (metacognitive prompts) are more focused questions that provide a more directive help on specific aspects of the learning processes. They are intended to serve as cues to provoke students' reflections and elicit self-evaluation on what happened in the past, such as "What did I do leads me successfully to the right solution and how can I apply this into other similar situation?" or "What I did was a mistake and how can I avoid this type of mistake in the future?"

Reflective prompts should be specific for the meaningfulness of reflection. For students who are very young or who have not had much practice with reflection, it is important that teachers use specific questions rather than general ones. Specificity also concerns the extent to which students are encouraged to refer to parts of their work to support their responses to reflective prompts. These prompts aim at guiding coherent understanding of the domain tasks at hand and may lead to extensive inference generation.

In general, reflective prompts that seek to help students think about and assess their learning need to be specific and intrinsically connected to the work or learning that a student is doing or has recently experienced. By using reflective prompts, teachers can ask students to reflect about many aspects of their learning and work (Giselle O. Martin Kniep,2000). Therefore, reflection on learning is one of the best ways to consolidate skills and knowledge that a student has acquired. To get students to be reflective and value the process of thinking about their learning, teachers need to practice by using reflective prompts.

Metacognitive skills

Metacognitive skills include two main components which are metacognitive knowledge and metacognitive regulation. Knowledge of cognition refers to what individuals know about their own cognition or about cognition in general. It includes declarative, procedural and conditional knowledge. Declarative knowledge includes knowledge about oneself as a learner and about factors that influence one's performance (knowing 'about' things). Procedural knowledge refers to knowledge about doing things. Much of this knowledge is represented as heuristics and strategies (knowing 'how' to do things). Conditional knowledge refers to

knowing when and why to use declarative and procedural knowledge (knowing the 'why' and 'when' aspects of cognition). Regulation of cognition refers to a set of activities that help students control their learning which are planning, monitoring, and evaluation. Planning involves the selection of appropriate strategies and the allocation of resources that affect performance. Monitoring refers to one's on-line awareness of comprehension and task performance. Evaluating refers to appraising the products and efficiency of one's learning. (Schraw, 1998).

Method

Sample of the Study

A total of 48 Grade-6 students from Practising Middle School, Hlegu Education College, Yangon Region during 2017-2018 Academic Year participated in this study. The participants are divided into six groups. The experimental group is instructed by problem-based learning approach with the support of reflective prompts.

Instruments

To determine metacognitive skills, metacognitive skills inventory (MSI) was developed as a pretest and posttest measure of Grade-6 Students while learning science through PBL approach. After piloting the inventory, (49) items were removed and remaining (36) items were selected. The selected items were arranged according to the respective components of metacognition. Then, the items were analyzed by using Test Analysis Program. The reliability co-efficient of MSI obtained through KR-21 formula was 0.80 which shows that it was a reliable tool for the data collection.

Then, to develop Metacognitive Prompts Worksheet, the researcher made adaptation based on Schraw's (1998) Regulatory Checklist model to determine if the use of reflective questioning of planning, monitoring and evaluating has an effect on the metacognitive skills of Grade-6 students. During intervention, the students were asked to write their answers on the worksheet.

Procedure

Firstly, pre-test was administered to the students before any intervention. After the pre-test, problem-based learning was implemented

with seven learning stages which are (1) Introducing the Problem (2) Problem Analysis (3) Self-study (4) Group Analysis (5) Selecting the Most Feasible Solution (6) Presenting Findings (7) Evaluating Performance.

Then, the teacher delivered Metacognitive Prompts Worksheet to all the groups of students before PBL learning stage of analyzing the problem and told them to answer four planning questions on their own which are “What is the nature of the problem? What is our goal? What kind of information and strategies do we need? How much time and resources do we need?” to set the plans for their learning. This was an individual activity. Then, they were asked to write all their answers in Metacognitive Prompts Worksheet.

During the PBL learning stages of self-study, group analysis, selecting the most feasible solutions and presenting findings, the teacher requested all the students to answer four monitoring questions on their own which are “Do I have a clear understanding of what I am doing? Does the task make sense to me? Am I reaching my goals? Do I need to make changes?” in Metacognitive Prompts Worksheet while solving the problem and collecting the necessary data. Moreover, the students were asked to monitor their learning and regulate the information they got enough or need to make some changes while solving the problem or while they are on the track of the problem solving activity or arriving at the solutions. This was also an individual activity.

Furthermore, in the PBL learning stage of evaluating performance, the teacher insisted all the groups to answer four evaluating questions on their own “Have I reached my goals? What worked? What didn’t work? Would I do things differently the next time?” in Metacognitive Prompts Worksheet with the aim of evaluating their performances by themselves after solving the problem. This was an individual activity as well.

By using reflective questions in the PBL learning stages, the researcher implemented Problem-Based Learning Process for nearly forty hours which encourages the development of metacognitive skills of Grade-6 students to grapple with authentic problems they are assigned to solve.

Data Analysis and Results

Results of the Development of Metacognitive Skills

Table 1. Result of Paired Sample *t*-test for Comparing Mean Differences between Pretest and Posttest Measures in Each Component of Metacognition

Component of Metacognition	Test	Mean	Standard Deviation	<i>t</i>	<i>df</i>	<i>p</i>
Declarative Knowledge	Pretest	2.88	1.024	- 6.155**	47	.000
	Posttest	3.69	1.055			
Procedural Knowledge	Pretest	2.60	1.067	- 3.493**	47	.000
	Posttest	3.21	1.110			
Conditional Knowledge	Pretest	2.81	1.179	- 3.865**	47	.000
	Posttest	3.46	1.051			
Planning Skills	Pretest	4.48	1.726	- 4.122**	47	.000
	Posttest	5.44	1.515			
Monitoring Skills	Pretest	4.38	1.875	- 3.343**	47	.000
	Posttest	5.29	1.570			
Evaluating Skills	Pretest	4.83	1.404	- 9.227**	47	.000
	Posttest	6.31	1.274			

** $p < 0.01$; Mean Difference is significant at 0.01 level.

According to the *t*-test results, significant differences in means were found in all the knowledge components of metacognition such as declarative knowledge ($t = 6.155$, $p < 0.01$), procedural knowledge ($t = 3.493$, $p < 0.01$), conditional knowledge ($t = 3.865$, $p < 0.01$), and regulation components of metacognition such as planning skills ($t = 4.122$, $p < 0.01$), monitoring skills ($t = 3.343$, $p < 0.01$), evaluating skills ($t = 9.227$, $p < 0.01$). It meant that students achieved more posttest measures than pretest measures in metacognition. Therefore, it can be concluded that there was sound evidence for intervention effect of using reflective prompts in problem-based learning stages on Grade-6 students' metacognitive skills.

Results of Reflective Questions during PBL Intervention

During PBL intervention, the students wrote the answers of four planning questions in PBL learning stages of introduce the problem, four monitoring questions in PBL learning stages of self-study, group analysis, select the most feasible solution and present findings and four evaluating questions in PBL learning stage of evaluating the performance,

Results of planning questions are as follows:

“The environmental problem that I am going to solve is the problem of air pollution and global warming.” (NMT, G2, 5.12.17)

“I will find out the necessary information by watching You-tube.” (DSN, G3, 15.1.18)

“I will surely need to find out the information from the books related to global warming.” (ZWT, G2, 23.1.18)

“I will need to read the environmental conservation articles.” (PPK, G3, 24.1.18)

“I will need the facts about deforestation and ways to save forests.” (MMH, G4, 12.1.18)

“My goal is to save the animal from extinction.” (EJP, G6, 3.1.18)

“I need to find out the ways to save forests.” (SSDM, G2, 19.1.18)

“I will need some more time to solve the problem well.” (MKO, G1, 5.1.17)

“I will find out the information to solve the problem by group discussion.” (HAK, G6, 10.12.17)

“I will solve the problem by group activity.” (STA, G4, 15.1.18)

The findings indicated that all the students were found that they were able to ask the planning questions themselves very well which encouraged them to identify the problem, establish the goals, learning resources and the time taken they needed to solve the problem by setting the plans on their own before solving the problem.

Results of monitoring skills questions were as follows:

“The task makes sense to me” (TNA, G3, 9.1.18)

“The problem goal is very near to me.” (ZMCK, G2, 2.1.18)

“I have a clear understanding of what I am learning.” (KLY, G1, 3.1.18)

"I think I will need more facts to solve the problem." (SLO, G5, 19.1.18)

"The problem I am going to solve is really meaningful to me." (ATH, G2, 11.12.17)

"I need to find some more facts to solve the problem and the goal is very far from me." (MHK, G3, 11.12.17)

"I think I can't understand the problem very well." (LMT, G1, 25.1.18)

"The problem is totally meaningful to me." (CCKS, G4, 19.1.18)

"I haven't reached my goal yet." (NTH, G5, 3.12.17)

"I am in the wrong track and I think I will need to make some changes." (SPL, G5, 16.1.18)

According to the results, by using the four monitoring questions, all the students were observed that they could monitor their learning to have a clear understanding of what they were doing, to decide the problem they were solving was meaningful and to be clear whether they were very near to the problem goal by asking the questions themselves. All their answers showed that all the students could monitor their learning as well as they could do to reach their solutions very well.

Results of evaluating skills questions were as follows:

"What I do well is I can find some good ways to reduce increasing waste disposal." (MMZ, G5, 17.1.18)

"Finally I achieve my goal." (KZT, G2, 10.1.18)

"I still have some questions to answer." (MMS, G1, 3.12.17)

"I can answer the questions very well." (AMMK, G6, 12.1.1.81)

"By solving that problem, I come to know ways to reduce the use of plastics." (MKT, G4, 31.1.18)

"I can find out the answers of a few questions." (NTH, G5, 3.12.17)

"Next time, I want to do group survey to solve the problem." (APK, G3, 5.1.18)

"I can participate in my group in solving the problem" (SLND, G1, 31.1.18)

"Next time if I have a chance to solve the problem, I will surely find out many other ways to solve the problem." (KYDNW, G5, 30.1.18)

With regards to four evaluating questions, the students were found that they could know all their strengths and weaknesses. Their answers indicated that they could make up their mind to achieve their learning goals and find the best solutions when they had a chance to solve next problem. So, it can be concluded that the use of reflective questioning has an effect on the metacognitive skills of Grade-6 students.

Conclusion

According to *t*-test result, mean differences between pre-test and post-test measures of students was significant ($t = 9.082$, $p < 0.01$). So, it can be interpreted that, the effect of using reflective prompting in the problem-based learning stages was evident to improve students' metacognitive skills.

From the results planning questions, it can be said that almost all the students could ask four planning questions themselves very well which allowed the students to identify the problem, establish the problem goal, the learning resources needed and the time required in solving the problems. Therefore, it can be concluded that the use of planning questions before analyzing the problem more deeply could enhance the students' planning skills.

In addition to that, the students had to answer four monitoring questions during PBL learning stages of self-study, group analysis, selecting the most feasible solutions and presenting findings. Their answers indicated that nearly all the students could monitor their learning very well for all groups of students. So, it can be said that the use of four monitoring questions could cultivate the students the habits of self-checking themselves whether they understood the problem, they were on the right track, they were clear about the problem goal and the problem was meaningful during solving the problem. As a result, it can be interpreted that the use of monitoring questions could promote the students' monitoring skills while the students were solving the problem.

During intervention, the students wrote the answers of four evaluating questions in PBL learning stage of evaluating performance. It was found that almost all the students could evaluate their learning very well for all groups of students. So, the use of evaluating questions caused the students to evaluate about their strengths and weaknesses, in what ways they could achieve their learning goals and how to find the best solutions

when they had a chance to solve next problem. So, it could be concluded that the use of evaluating questions had an effect on the evaluating skills of Grade-6 students.

Overall, the results of this study showed that answering reflective questions in the respective PBL learning stages during intervention improve the problem solving performance of students and to the development of metacognitive skills. During PBL intervention, many exposures to these reflective prompts and giving opportunities to practise metacognitively will surely increase the students' chances to develop the metacognitive skills which lead to better problem solving performance of students. Therefore, it can be concluded that the use of reflective questions in respective PBL learning stages had significant impact on the metacognitive skills of Grade-6 students.

As mentioned in above results, it can be said that the use of reflective questions in PBL learning stages has positive effect on metacognitive skills of Grade-6 students. So, educators must use reflective prompts in problem-based learning approach in the classroom to accurately self-monitor and evaluate the problem solving abilities of children by sufficiently using metacognitive skills.

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An Exploratory Study of Relationship between Science Motivation and Science Achievement of Middle School Students

A Me Me Thwe¹ & Khin Phyu Phyu²

Abstract

The main purpose of the study was to explore the relationship between science motivation and science achievement of middle school students. Then, this study tried to investigate the relationship between science motivation and science achievement of middle school students. A total of 733 grade 6 and grade 8 students (346 males and 427 females) from four districts in Yangon Region participated in this study. In this study, quantitative survey research method was used to collect data. Science motivation questionnaires composed of 30 items and six subscales such as intrinsic motivation, extrinsic motivation, personal relevance, self-efficacy, self-determination and assessment. According to this study, it was found that grade 6 students were statistically significant higher science motivation than grade 8 students. Moreover, based on the results of this study, female students had higher science motivation than male students. There were significant differences in science motivation among districts. There were significant differences in science motivation by eight schools. And then, Pearson correlation revealed that science motivation was positively significantly correlated with science achievement.

Keywords: Motivation, Intrinsic Motivation and Extrinsic Motivation

Introduction

Myanmar is a country where various ethnic groups live together. Equity and access to education for all these groups is provided in all parts of the country. Education plays a vital role in the realization of sustainable human resource development programmes of any nation. In this age of fast-paced technological change, the utilization of Information and Communication Technology is a prerequisite for development in all fields, particularly education. The Ministry of Education is well-prepared for the

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task to transform Myanmar society into a learning society and make education accessible to any region at any time.

Yesterdays' educational system will not meet today's and even less to the needs of tomorrow. The system of science education in the country must be overhauled to base it on knowledge and creativity and not memorizing and examination. The new thing in the modern world is science and science is the new humanism. The ulterior end of science is search for truths of nature and of the universe, and truth always builds and integrates.

Moreover, at the start of the twentieth century, the world's economies were based largely on agricultural production and natural resources, then on industrial production and transformation, then on services. Towards the end of that century, and certainly from the 1990s, the current, and probable future scenario, is the knowledge economy. Science is seen as an essential part of culture and a powerful way of thinking. Science education is necessary for the world of work and the economy (UNESCO, 2010).

As science has become ever more deeply embedded in everyday life, how ordinary people perceive science has attracted growing attention not only from the scientific community, but also from social scientists (Bak, 2001). The goal of science education is to enhance all students' scientific literacy; that 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 (National Research Council [NRC] 1996).

Today's educational policy is heading towards a more active role of students in the whole educational system (Ball, 2008). In constructivist learning of science, students take an active role in interacting with the environment, they use active learning strategies to retrieve existing knowledge to interpret new experiences in order to construct new understanding. Learning motivation is an essential component in science learning because motivation drives behavior and is a powerful influence on the classroom learning. There are ways to recognize a learner's level or a 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.

Purpose of the Study

The main purpose of the study is to explore the relationship between science motivation and science achievement of middle school students.

Specific objectives

Specific objectives of the study are

1. To study science motivation of middle school students by grades and gender.
2. To investigate science motivation of middle school students by school and district.
3. To examine the relationship between science motivation and student science achievement scores.

Scope and Procedure

This study was mainly based on the responses of the students to survey questionnaire. In this study, the middle school students' motivation on science achievement was conducted by survey method. The study was limited to Grade 6 and Grade 8 students from Yangon Region. A total of 773 students from eight selected high schools and middle schools were administered to assess the students' motivation on science achievement.

The research was administered to the students from the selected high schools and middle schools by questionnaire-survey method. Altogether 384 Grade 6 students and 389 Grade 8 students participated in the study.

Review of Related Literature

Motivation is a need or desire that energizes behavior and directs it towards a goal. Psychologists distinguish two forms of motivation as intrinsic motivation and extrinsic motivation. Extrinsic motivation is something outside the person that energizes behavior (money, fame, power). Intrinsic motivation is something within the person that energizes behavior (interest, curiosity, personal challenge and improvement). Motivational theories attempt to answer questions about what gets individual moving (energization) and towards that activities or tasks (Pintrich & Schunk, 2002). Motivation can direct behavior towards which people strive; thus it affects the choices students make.

Motivation plays a major role in students' academic work and in their achievement. Motivation reflects in student's choices of learning tasks, in the time and effort students devote to them, in their persistence on learning tasks, in their coping with obstacles students encounter in learning process. Motivation leads to increased efforts and energy. Motivation determines whether a student will pursue a task (even a difficult one) with enthusiasm or lackluster attitude. Motivation increases the initiation and persistence of activities. Motivation is a crucial component in learning (Huett, Kalinowski et al., 2008). Motivate learners will likely lead to increases engagement and persistence in learning of student (Pritchett, 2009).

Motivation is one of the states that drives and sustains behaviors. In order for students to be motivated to learn in any discipline, students must participate in activities that are personally meaningful and worthwhile (Glynn & Koballa, 2006). A student could be motivated to learn a new set of skills because the value of learning that new skill or because will result in a good grade, and individuals appreciate the benefits a good grade provides (Ryan & Deci, 2000). Motivation refers to "the reasons underlying behavior" (Guay et al., 2010). Motivation in children predicts motivation later in life, and the stability of this relationship strengthens with age.

Motivation involves a constellation of beliefs, perceptions, values, interests, and actions that are all closely related. As a result, various approaches to motivation can focus on cognitive behaviors (such as monitoring and strategy use), non-cognitive aspects (such as perceptions, beliefs, and attitudes), or both. For example, Gottfried (1990) defines academic motivation as "enjoyment of school learning characterized by a mastery orientation; curiosity; persistence; task-endogeny; and the learning of challenging, difficult, and novel tasks". On the other hand, Turner (1995) considers motivation to be synonymous with cognitive engagement, which he defines as "voluntary uses of high-level self-regulated learning strategies, such as paying attention, connection, planning, and monitoring".

Motivation is a vital educational variable promoting both new learning and performance of previously learned skills, strategies and behaviors (Barlia, 1999). Motivation is a critical component in learning (Huett, Kalinowski et al., 2008). Within the affective components, motivation is important because students' motivation plays an important role in their conceptual change processes (Lee and Brophy 1996, Pintrich et

al. 1993), critical thinking, learning strategies (Kuyper., et al. 2000) and science learning achievement (Napier and Riley, 1985).

Motivation leads to increase effort and energy. Highly motivated students will learn readily, and make any class fun to teach, while unmotivated students will learn very little and generally make teaching painful and frustrating. Motivating learning is a central element of good teaching. Often, it is assumed that students should be motivated to learn in every class, but this is not a reasonable expectation (Green, 2002).

According to Sanfeliz and Stalzer (2003), motivated students enjoy learning science, believe in their ability to learn, and take responsibility for their learning. Intrinsic motivation is the inherent satisfaction in learning science for its own sake, self-efficacy is students' belief that students can achieve well in science, and self-determination is the control students believe they have over their learning of science. Intrinsic motivation, self-efficacy, and self-determination play important roles in the learning of science.

Students' motivation in learning science is defined as students' active engagement in science –related tasks for achieving a better understanding of science (Lee & Brophy, 1996, cited in Cavas, 2011). Motivation to learn science benefits all students by fostering their scientific literacy, which is the capability to understand scientific knowledge, identify important scientific questions, draw evidence-based conclusions, and make decisions about human activity affects the natural world (Organization for Economic Cooperation and Development, 2007, cited in Bryan et al., 2011).

Method and Procedures

Participants

By using random sampling technique, the subject were selected from two middle schools and six high schools located in the Yangon Region. A total of 773 grade 6 and grade 8 students (346 males and 427 females) from four districts in Yangon Region participated in this study. In this study, quantitative survey research method was used to collect data. Science motivation questionnaires composed of 30 items and six subscales such as intrinsic motivation, extrinsic motivation, personal relevance, self-efficacy, self-determination and assessment.

Instruments

This study was mainly based on the responses of the students to survey questionnaire. The students were asked to tick the numbers of the questionnaires. The Science Motivation Questionnaire indicated the extent to which they never do or always never do with the statements using a five-point Likert-type scale ranging from “1=Never” to “5=Always” when answering all of 30 items in the questionnaire. For negative statements, the point values would be reversed that is “1=Always to 5=Never” respectively.

All the measures used in this study were adapted to Myanmar Version. After preparing the measuring scales, the initial draft of the two questionnaires were checked by the supervisors. Then, expert review was conducted for face validity and content validity by six educators from Yangon University of Education. By looking at the notes or comments made by these experts and using the merit of their suggestions, and the result of pilot testing, the questionnaires were improved.

As an initial phase of this study, pilot study was conducted in 4th week of November, 2015, with a sample of 100 students from B.E.H.S No.3, Tamwe. By the use of these instruments, test administration was conducted on the 2nd week of the December, 2015 in Yangon Region. Students were provided necessary instructions and explanations on how to complete science motivation questionnaire. Participants were informed about the purpose of the study and they were told that their names, address and responses would not expressed and these data were just only the identification they were required to submit. They were assumed that the results will be used only for research purposes and would not influence their exam marks and personal cases.

Moreover, this study aims to survey the Science achievement Test scores of Grade 6 and Grade 8 students by the use of science average test scores obtained from teacher made tests conducted monthly in the selected sample schools. The needed Science achievement Test scores were computed by average mark of four times of monthly test to use in this study. By this way, the required data for this study were collected from selected schools.

Results

Table 1. Descriptive Statistics for Science Motivation

No.	Factors of Science Motivation	N	Mean	SD	Minimum	Maximum
1.	Intrinsic Motivation	773	20.31	3.15	8	25
2.	Extrinsic Motivation	773	20.24	3.31	9	25
3.	Personal Relevance	773	18.29	4.31	5	25
4.	Self-efficacy	773	19.91	3.29	7	25
5.	Self-determination	773	20.54	3.49	5	25
6.	Assessment Anxiety	773	13.85	4.67	5	25
	Total	773	113.14	22.22	30	150

Descriptive analysis revealed that the means and standard deviations of Science Motivation Questionnaire for all respondents were 113.14 and 22.22. Based on the descriptive statistics shown in Table 1, it can be estimated that the respondents' self-determination was the highest mean score than other motivation factors although assessment anxiety was the lowest mean score than other motivational factors. Then, intrinsic motivation, extrinsic motivation, personal relevance, self-efficacy, self-determination and assessment anxiety were somewhat satisfactory.

Based on descriptive analyses of science motivation, middle school students in this study were identified into three groups: 16.04% of students with scores one standard deviation above the sample mean were considered high group; 79.30% of students with scores between (+1) and (-1) standard deviation from the sample mean were grouped into moderate group; and the remaining students of 4.66% who scored one standard deviation lower than the sample mean identified as low group (see Table 2).

Table 2. Three Different Groups by Level of Science Motivation

Level of Science Motivation	Frequency	Percentage
High	124	16.04
Moderate	613	79.30
Low	36	4.66
Total	773	100

Table 3. The Result of Independent Sample t-test for Each Factor of Science Motivation by Grade

No.	Factors	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
1.	Intrinsic Motivation	5.940**	771	0.000	1.32
2.	Extrinsic Motivation	4.107**	771	0.000	0.97
3.	Personal Relevance	4.831**	771	0.000	1.48
4.	Self-efficacy	4.783**	771	0.000	1.12
5.	Self-determination	2.320*	771	0.021	0.58
6.	Assessment Anxiety	-2.129*	771	0.034	-0.71

Note: ** Mean difference is significant at 0.01 level.

* Mean difference is significant at 0.05 level

According to the result of t-test, it was found that there were significant differences between grade 6 and grade 8 students in intrinsic motivation, extrinsic motivation, personal relevance and self-efficacy at 0.01 level. And self-determination and assessment anxiety were significantly different between grade 6 and grade 8 students at 0.05 level. Generally, it can reasonably be concluded that grade 6 students possess higher science motivation than grade 8 students. As the means indicate, most of grade 6 students were obedient to their parents' and teachers' guidelines. When grade 8 students transferred to adolescent level, they were distracted by their environment factors. So, grade 6 students were more motivated than grade 8 students in science learning.

Table 4. The Result of Independent Sample t-test for Each Factor of Science Motivation by Gender

No.	Factors	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
1.	Intrinsic Motivation	-3.210**	771	0.000	-0.73
2.	Extrinsic Motivation	-5.101**	771	0.000	-1.20
3.	Personal Relevance	-1.965*	771	0.050	-0.61
4.	Self-efficacy	-2.237*	771	0.026	-0.53
5.	Self-determination	-2.786**	771	0.005	-0.70
6.	Assessment Anxiety	1.013	771	0.312	0.34

Note: *Mean difference is significant at 0.05 level.

** Mean difference is significant at 0.01 level.

According to Table 4, the result of t-test confirmed that significant differences by gender in intrinsic motivation, extrinsic motivation and self-determination at 0.01 level. There were significant differences by gender in personal relevance and self-efficacy at 0.05 level. It can reasonably be concluded that female students possess higher science motivation than male students. It may be interpreted that, according to the nature, most of female students were interested to their learning, respected to their parents and teachers and tend to focus on earning higher grades and obtaining rewards. So, female students possess higher science motivation than male students.

Table 5. ANOVA Table of Mean Comparison for Science Motivation by District

Science Motivation	Sum of Squares	<i>df</i>	Mean Square	F	<i>p</i>
Between Group	3128.151	3	1042.717	5.421**	0.001
Within Group	147906.909	769	192.337		
Total	151035.061	772			

Note: ** Mean difference is significant at 0.01 level.

ANOVA result showed that there was a significant difference among districts at the 0.01 level (see Table 5). After that, to find out which particular group had greatest difference, Tukey HSD test was conducted and significant differences were found among districts (see Table 6).

Table 6. The Result of Tukey HSD Multiple Comparison for Science Motivation by District

Dependent Variable	(I) District	(J) District	Mean Difference (I-J)	<i>p</i>
Science Motivation	South District	West District	4.810**	0.005
		North District	5.031**	0.002

Note: **Mean difference is significant at 0.01 level.

According to the result, the students' science motivation had significant difference in South District, West District and North District at 0.01 level. So, students in South District had higher science motivation among districts. Again, recently, students in West District and North District had lower science motivation among districts. It may be assumed that students from South District have more interest in science than those of other districts.

Table 7. ANOVA Table of Mean Comparison for Science Motivation by School

Science Motivation	Sum of Squares	<i>df</i>	Mean Square	F	<i>p</i>
Between Groups	8958.350	7	1492.842	6.891**	0.000
Within Groups	142076.711	765	197.837		
Total	151035.061	772			

Note: ** Mean difference is significant at 0.01 level.

ANOVA result showed that there was a significant difference among schools at the 0.01 level (see Table 7). After that, to find out which particular group had greatest difference, Tukey HSD test was conducted and significant differences were found among schools (see Table 8).

Table 8. The Result of Tukey HSD Multiple Comparison for Science Motivation by School

Dependent variable	(I) School	(J) School	Mean Difference (I-J)	<i>p</i>
Science Motivation	School (1)	School (2)	9.594**	0.000
		School (3)	8.285**	0.001
		School (7)	6.582**	0.005
		School (8)	6.820*	0.023
	School(5)	School (2)	7.435**	0.002
		School (3)	6.130*	0.036
	School (6)	School (2)	8.568**	0.000
		School (3)	7.259**	0.008

Note:*Mean difference is significant at 0.05 level.

**Mean difference is significant at 0.01 level.

According to the result, the students' science motivation had significant difference in School (1), School (2), School (3), School (7) and School (8) at 0.01 level. Then, the students' science motivation had significant difference in School (5) and School (2) at 0.01 level, School (5) and School (3) at 0.05 level and, School (1) and School (8) at 0.05 level. And then, the students' science motivation had significant difference in School (6), School (2) and School (3) at 0.01 level. So, students in School (1), School (5) and School (6) had higher science motivation among schools. Again, students in School (2), School (3), School (7), School (8) had lower science motivation among schools. It may be assumed that School (1), School (5) and School (6) have more interested in science than students of other school.

Table 9. Intercorrelations Between Science Motivation and Science Achievement

Variable	SA	SM
SA	1	0.694**
SM		1

Note: ** Mean difference is significant at 0.01 Level.

SA=Science Achievement, SM=Science Motivation

The result showed that science motivation was the positive relationship on science achievement. And then, there was positive relationship between science motivation and science achievement with coefficient of $r = 0.694$. It can reasonably be concluded that the cause of students' high level of science motivation was that they were motivated at their science learning and they will be high level of science achievement. Moreover, students' motivation on science learning was that the curriculum they were taught, the period they use the laboratory and the influence of their science teacher, and so on, they will get high level of science achievement. If students have low level of interest in science learning, they need to motivate in their learning science.

Conclusion

Findings from this study extend of middle school students' science motivation. The results reported above are largely descriptive and provided the first evidence that as a consequence of science learning motivation. As one of the most important finding in this study, if students could perceive the important values of science learning, such as acquiring problem-solving competency, experiencing the inquiry activity, stimulating their own thinking and finding the relevance of science with daily life, they would be motivated to learn science. This finding indirectly supports the previous literature that the focus of science education will be on helping children to modify their ideas and to develop more scientific understanding.

Next the finding of this study confirmed that the students' intrinsic motivation, extrinsic motivation, personal relevance, self-efficacy and self-determination were positively and significant correlated with each other and science achievement. But assessment anxiety was negatively correlated with other motivation factors and positively correlated with science achievement. Students did enjoy learning science and they know learning science very interesting or challenging for them. Most of students and their parents intended to obtain good grades in tests. They had confidence to pass the exam.

There is also need to raise students' intrinsic motivation, extrinsic motivation, personal relevance to enhance better learning outcomes in science learning. The quality of education that teachers provide to student is

highly dependent upon what teachers do in the classroom. Thus, in preparing the students of today to become successful individuals of tomorrow, science teachers need to ensure that their teaching is effective (Prokop et al., 2007).

With the premise that students need to be motivated to learn, to develop continued learning on their own and to gain better understanding of contents that learnt in classroom. Good teaching and use of relevant techniques are some roles which the teacher needs to play to arouse and sustain interest in students. It is undeniable that students' intrinsic motivation, extrinsic motivation, personal relevance, self-efficacy, self-determination and assessment anxiety. Teachers should be facilitators of promoting students' motivation. Teachers should be able to reduce students' anxiety by providing them with relevant materials for revision and teaching them with suitable teaching technique and relevant teaching materials. Consequently, students will develop more science learning motivation as an important of teaching learning situation.

Generally, this study would be of great help to teachers in producing students with high achievement and students having high motivation who would become good citizens essential for creating a modern-developed society in Myanmar. Therefore, teachers in Myanmar should try to become qualified teachers who will produce pupils as good citizens.

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Study Involvement and Emotional Maturity of Prospective Teachers

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Abstract

The main purpose of this study was to investigate the study involvement and emotional maturity of prospective teachers. A sample of 600 prospective teachers from Yangon University of Education and Sagaing University of Education participated. Descriptive survey method and quantitative research design were used in this study. Study Involvement Inventory (SII) developed by Asha Bhanthnagar (2004) and Emotional Maturity Scale (EMS) developed by Yashvir Singh and Mahensh Bhargava (2010) were used as research instruments. Alpha reliability for SII and EMS revealed at 0.665 and 0.918, respectively. Gender related differences were found to be on five sub-scales of study involvement such as abasement, affiliation, achievement, nurturance and succourance. According to t test result, the mean score of prospective teachers from joint family on affiliation sub-scale was higher than that of prospective teachers from the nuclear family. Moreover, ANOVA results showed that there were significant differences in prospective teachers study involvement among level of education at the 0.001 level. Concerning the emotional maturity, t- test result confirmed that there were significant gender differences on three sub-scales such as social adjustment, personality integration, independence sub-scales and the whole test of emotional maturity scale.

Key Term: Study Involvement, Emotional Maturity, Prospective Teachers

Introduction

Importance of the Study

An emotionally mature person has capacity to make effective adjustment with himself, members of his family, and his peers in the school, society and culture. When individual has appropriate emotional maturity and stability, they can control the psychological problems with the better trend in their life. If the students become emotionally balanced, they can reduce many psychological problems that are facing in the classroom or

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other circumstances, success in life and actively involved in their studying and learning tasks (Mahmoudi, 2012). Study involvement is more complex and is typically defined in three ways; behavioral involvement (student participation in learning tasks); emotional involvement (student attitudes, interests and values); and cognitive involvement (the willingness to exert the effort that the task requires). Success of the student in education depends on the involvement of their study interests and efforts (Sangtam, 2014). Emotional maturity and study involvement have been considered as important factor in learning process. Emotional maturity is very essential factor for student's better study involvement. Although several studies of emotional maturity and study involvement have been conducted in previous years throughout the world, research related to study involvement and emotional maturity of prospective teachers was relatively rare in Myanmar. This research focused on the relationship between study involvement and emotional maturity of prospective teachers.

Purposes of the Study

The main purpose of the study is to investigate the study involvement and emotional maturity of prospective teachers.

Specific Objectives

1. To examine how study involvement and emotional maturity are modeled.
2. To examine the effect of background variables such as gender, level of education, type of family on study involvement of prospective teachers.
3. To find out the effect of background variables such as gender, level of education, type of family on emotional maturity of prospective teachers.

Definition of Key Terms

Study Involvement is a degree of affect or feeling of being actively involved in one's learning process (Yan Off, 1973).

Maturity also encompasses being aware of the correct time and place to behave and knowing when to react, according to circumstances and the culture of the society one lives in (Asari, 2015).

Emotional Maturity is how well we are able to response to situations, control of our emotions and behaves in an adult manner when dealing with others (Smitson, 1974).

Review of Related Literature

Emotional Maturity

Emotional maturity allows handling life's ups and downs without over reacting. Emotional maturity is a process in which the personality is continuously striving for greater sense of emotional health both intra-physically and intra-personally (Menninger, 1999). Emotional maturity is vital for attaining success and happiness in one's life. Emotional maturity enables adolescents make better decisions; better choices; have more fun and less stress which enables them to have better balance in life. After attaining emotional maturity, he is able to demonstrate a well- balanced emotional behavior in his day-today life. A person may said to be emotionally matures if he has in his possession almost all types of emotions-positive or negative and is able to express them at the appropriate time in an appropriate degree (Singh et al, 2007).

Concept of Study Involvement

Study skills are an important factor that will determine the result of your studies. Some naturally have very good study skills whereas others have a more difficult time doing the same amount of work. Study involvement is a process by which the skills, capacities and competencies of the students are enhanced (Astin, 1984). Study involvement as a degree of affect or feeling of being actively involved in one's own learning process. According to Yan Off (1973), study involvement arises among students on the basis of the following factors; interest, motivation, needs, environment, teacher, curriculum, parents, peer relation, socio-economic status, and academic achievement.

Method

Sample of the Study

A total of 600 prospective teachers from Yangon University of Education (YUOE) and Sagaing University of Education (SUOE) who enrolled in 2017-2018 AY participated in this study. The participants in this study were first year to final year prospective teachers. Female comprised

50% of first year to final year prospective teachers and the rest were male. About 50% of participants were chosen from SUOE and the rest 50% were from YUOE.

Data Analysis and Results

Findings of Prospective Teachers' Study Involvement

Comparison of Prospective Teachers' Study Involvement by Gender

The result of *t*-test confirmed that among the ten sub-scales, there were significant gender differences in five out of ten sub-scales such as abasement, affiliation, achievement, nurturance and succourance. It can reasonably be said that female prospective teachers were likely to be more submitting passively to external force that disturb in their learning and become more success in life. In addition, the female prospective teachers also showed the ability to cooperate with friends in learning activity, reciprocate and the ability to adhere and remain loyal to friends. According to results, female prospective teachers said to be accomplished difficult tasks, overcoming obstacles in learning situation and achieving expertise. According to the nurturance sub-scale, female prospective teachers also described as to give sympathy and gratify the needs of helpless others in their class who were weak in studies. Concerning the succourance sub-scale, female prospective teachers also received the good advices from friends, teachers, parents and others about their learning processes in this study. Moreover, female prospective teachers in this study would be reasonably described as actively involved in one's learning process and using their learning skill, capacities and competencies to succeed in their learning tasks. It can be reasonably said that the female prospective teachers have more study involvement than male prospective teachers in this study.

Table 1. Results of *t*-test for Prospective Teachers' Study Involvement by Gender

Sub-scales	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
Abasement	Male	300	6.87	1.217	-2.84**	.005
	Female	300	7.13	1.019		
Affiliation	Male	300	7.10	1.213	-2.71**	.007
	Female	300	7.34	1.004		
Autonomy	Male	300	5.57	1.303	-.10	.923

Sub-scales	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
	Female	300	5.58	1.220		
Aggression	Male	300	6.79	1.295	-1.71	.088
	Female	300	6.96	1.032		
Deference	Male	300	5.74	1.744	.98	.326
	Female	300	5.60	1.909		
Order	Male	300	6.83	1.330	-1.63	.104
	Female	300	6.99	1.171		
Recognition	Male	300	4.96	1.200	1.37	.173
	Female	300	4.83	1.132		
Achievement	Male	300	3.91	1.913	-3.26***	.001
	Female	300	4.40	1.764		
Nurturance	Male	300	5.09	1.411	-2.74**	.006
	Female	300	5.39	1.262		
Succourance	Male	300	6.91	1.353	-2.09*	.037
	Female	300	7.12	1.142		
The whole test	Male	300	60.07	7.188	-1.85	.064
	Female	300	61.04	5.570		

*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.

The whole test= Study involvement inventory

Comparison of Prospective Teachers' Study Involvement by Type of Family

The *t*- test result revealed that significant differences were not found in the whole test of study involvement inventory and all sub-scales except affiliation sub-scale between prospective teachers from nuclear family and joint family. This finding can be interpreted that the participant prospective teachers from both nuclear family and joint family have the same study involvement (See Table 2). It can reasonably be said that the prospective

teachers from joint family have more enjoyably cooperated with their classmates, shared ideas with one another in learning situation and actively involved in studying than the prospective teachers from nuclear family due to the fact that they lived together with parents and other relatives at home.

Table 2. Results of *t*-test for Prospective Teachers' Study Involvement by Type of Family

Sub-Scales	Family Types	N	Mean	SD	<i>t</i>	<i>p</i>
Abasement	Nuclear	384	6.96	1.159	-1.33	.184
	Joint	215	7.08	1.073		
Affiliation	Nuclear	384	7.10	1.194	-3.60***	.000
	Joint	215	7.42	.943		
Autonomy	Nuclear	384	5.58	1.245	.27	.785
	Joint	215	5.55	1.285		
Aggression	Nuclear	384	6.85	1.176	-.89	.375
	Joint	215	6.93	1.162		
Deference	Nuclear	384	5.68	1.885	.20	.842
	Joint	215	5.65	1.730		
Order	Nuclear	384	6.90	1.274	-.32	.748
	Joint	215	6.93	1.223		
Recognition	Nuclear	384	4.93	1.177	1.19	.234
	Joint	215	4.81	1.149		
Achievement	Nuclear	384	4.10	1.856	-1.10	.273
	Joint	215	4.27	1.855		
Nurturance	Nuclear	384	5.30	1.348	1.41	.158
	Joint	215	5.13	1.341		
Succourance	Nuclear	384	6.98	1.269	-.78	.436
	Joint	215	7.07	1.233		
The whole test	Nuclear	384	60.37	6.696	-.91	.361
	Joint	215	60.86	5.974		

*The mean difference is significant at the 0.001 level.

Comparison of Prospective Teachers' Study Involvement by Education Level

According to the ANOVA results, except the autonomy and recognition sub-scales, significant differences were found on the whole inventory as well as eight sub-scales among five levels of education (See Table 3). Specifically, 1st year prospective teachers' mean score on the abasement sub-scale was significantly higher than that of others level of grades. This may be due to the fact that 1st year prospective teachers were likely to be more submitting passively to external force that disturb in their learning and become more succeed in life. Concerning the aggression sub-scale, the mean score of 1st year prospective teachers was significantly higher than that of other levels of grade. It can reasonably be said that 1st year prospective teachers had more forcefully overcome an opponent, controlling, taking revenge in class than others. Regarding the achievement sub-scale, 1st year prospective teachers' mean score was significantly higher than that of other grade levels. This may be due to the fact that 1st year prospective teachers said to be accomplished difficult tasks, overcoming obstacles in learning situation and achieving expertise. Regarding with the nurturance sub-scale, the mean score of 1st year prospective teachers was significantly higher than that of others year in this study. This may be due to the fact that 1st year prospective teachers could also be described as a kind of person who show sympathy and gratify the needs of others in their class who were weak in their studies. From the point of view of succourance sub-scale, 1st year prospective teachers' mean score was significantly higher than that of other levels of grade. It can reasonably be said that 1st year prospective teachers also received the good advices from friends, teachers, parents and others about their learning processes in this study. Moreover, the mean score of 2nd year prospective teachers were higher in three sub-scales of study involvement inventory such as affiliation, deference and order. From the point of view of affiliation sub-scale, the mean score of 2nd year prospective teachers was significantly higher than that of others in this study. This may be due to the fact that 2nd year prospective teachers also showed the ability to cooperate with friends in learning activity, reciprocate and the ability to adhere and remain loyal to friends.

Concerning the deference sub-scale, 2nd year prospective teachers' mean score was significantly higher than that of others. It can reasonably be said that 2nd year prospective teachers also showed more admiration to superior persons, praised them and followed their rules or disciplines in

class. Relating the order sub-scale, the mean score of 2nd year prospective teachers was significantly higher than that of other level of grade in this study. This may be due to the fact that 2nd year prospective teachers also putted things in order, achieved cleanliness, arranged, organized and neatness in school. In addition, the mean scores of 1st year prospective teachers were significantly higher than that of prospective teachers from 2nd, 3rd, 4th and 5th year in abasement, aggression, achievement, nurturance, succourance sub-scales and the whole test of study involvement inventory. Moreover, the mean scores of 2nd year prospective teachers were significantly higher than that of prospective teachers from other levels of grade on affiliation, deference and order sub-scales.

Table 3. Descriptive Statistics of Prospective Teachers' Study Involvement by Education Level

Sub-scales	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	<i>F</i>	<i>p</i>
Abasement	7.27	7.13	6.86	6.88	6.88	3.28**	.011
Affiliation	7.32	7.42	7.01	7.38	6.98	4.23**	.002
Autonomy	5.71	5.48	5.47	5.71	5.50	1.19	.315
Aggression	7.12	6.94	6.83	6.96	6.53	4.33**	.002
Deference	5.87	5.99	5.68	5.63	5.18	3.47**	.008
Order	7.14	7.20	6.71	6.92	6.58	5.60***	.000
Recognition	5.07	4.79	4.86	4.92	4.82	1.07	.371
Achievement	4.68	4.18	3.97	4.38	3.58	6.36***	.000
Nurturance	5.83	5.42	4.99	5.07	4.89	10.5***	.000
Succourance	7.32	7.14	6.65	7.20	6.76	6.73***	.000
The whole test	66.32	61.69	59.02	61.05	57.69	15.7***	.000

* The mean difference is significant at the 0.01 level.

* The mean difference is significant at the 0.001 level.

The whole test= Study involvement inventory

Comparison of prospective Teachers' Emotional Maturity by Gender

Significant gender differences were found to be on the whole test of emotional maturity scale as well as three sub-scales such as social adjustment, personality integration and independence at the 0.05 level. This may be due to the fact that male and female participant prospective teachers showed the different emotional maturity. It can reasonably be said that participant of male prospective teachers have more emotional maturity than the participant of female prospective teachers. According to social adjustment sub-scales, the male prospective teachers' mean score was significantly higher than that of female prospective teachers in this study. This may be due to the fact that male prospective teachers also showed more adjustment with their peers, do positive interaction with others person and can cope with the demands of the social environment in any given situation than the participant of female prospective teachers. Concerning the personality integration sub-scale, the mean score of male prospective teachers was significantly higher than that of female prospective teachers. It can reasonably be said that the male prospective teachers could maintain and adapt a harmonious relationship with environment. Therefore, male prospective teachers have more harmonious coactions and de-escalation of the inner conflict in the undaunted expression of behaviors than female prospective teachers. Regarding the independence sub-scale, the male prospective teachers' mean score was significantly higher than that of female prospective teachers. This may be due to the fact that the male prospective teachers also showed the capacity of a person's attitudinal tendency to be a self-reliant person who can take their decisions by own judgment based on facts by utilizing their intellectual and creative potentialities in this study. In addition, the male prospective teachers have more independence than female prospective teachers.

Table 4. Results of *t*-test for Prospective Teachers' Emotional Maturity by Gender

Sub-scales	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
Emotional Stability	Male	300	22.73	6.41	.55	.584
	Female	300	22.47	4.96		
Emotional Progression	Male	300	22.52	6.42	.38	.704
	Female	300	22.33	5.35		

Sub-scales	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
Social Adjustment	Male	300	21.83	5.77	2.54*	.011
	Female	300	20.77	4.33		
Personality Integration	Male	300	20.52	5.91	4.60***	.000
	Female	300	18.59	4.21		
Independence	Male	300	17.80	4.57	2.51*	.012
	Female	300	16.94	3.86		
The whole test	Male	300	105.39	24.96	2.44*	.015
	Female	300	101.10	17.47		

*The mean difference is significant at the 0.05 level.

*The mean difference is significant at the 0.001 level.

Comparison of prospective Teachers' Emotional Maturity by Type of Family

The results of *t*-test confirmed that significant differences were not found to be on the whole test of emotional maturity scale and all sub-scales between types of family of prospective teachers. This may be due to the fact that participant of prospective teachers from both nuclear and joint family tend to critically evaluate and select information from the sources around them to construct their emotional maturity. Therefore, emotional maturity did not depend on the type of family of prospective teachers in this study.

Table 5. Results of *t*-test for Prospective Teachers' Emotional Maturity by Type of Family

Sub-scales	Family Type	N	Mean	SD	<i>t</i>	<i>p</i>
Emotional Stability	Nuclear	384	22.71	5.765	.69	.491
	Joint	215	22.37	5.664		
Emotional Progression	Nuclear	384	22.58	6.015	.90	.369
	Joint	215	22.13	5.702		
Social Adjustment	Nuclear	384	21.41	5.257	.69	.494
	Joint	215	21.11	4.894		
Personality Integration	Nuclear	384	19.62	5.300	.39	.694
	Joint	215	19.44	5.086		

Sub-scales	Family Type	N	Mean	SD	<i>t</i>	<i>p</i>
Independence	Nuclear	384	17.47	4.149	.86	.390
	Joint	215	17.16	4.398		
The whole test	Nuclear	384	103.78	22.122	.85	.393
	Joint	215	102.20	20.749		

The whole test=Emotional maturity total

Comparison of Prospective Teachers' Emotional Maturity by Education Level

The result showed that there were mean differences in the whole test as well as five sub-scales such as emotional stability, emotional progression, social adjustment, personality integration and independence. Relating to the social adjustment sub-scale, the mean score of 3rd year prospective teachers was significantly higher than that of other levels of grade. This may be due to the fact that 3rd year prospective teachers could adjust when interacting with another person and demanding of the social environment in any given situation than the other years.

Table 6. Descriptive Statistics of Prospective Teachers' Emotional Maturity by Education Level

Sub-scales	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	<i>F</i>	<i>p</i>
Emotion Stability	21.76	22.48	22.83	22.93	22.99	0.95	.437
Emotional Progression	22.16	23.00	22.25	22.15	22.57	0.45	.770
Social Adjustment	19.43	21.38	22.48	21.53	21.69	6.03***	.000
Personality Integration	18.71	20.08	20.09	18.98	19.93	1.95	.101
Independence	17.17	17.66	17.46	17.58	16.98	0.54	.704
The whole test	99.22	104.59	105.11	103.16	104.17	1.44	.220

*The mean difference is significant at the 0.001 level.

The whole test= Emotional maturity scale

Conclusion

The present study highlights the study involvement and emotional maturity of prospective teachers across gender, type of family, level of education and socioeconomic status. Emotional Maturity helps the prospective teachers to attain the amount of physical and psychological vitality that they commit to the academic experience and active involvement in learning tasks (Mishra, 2016). It is important that contextual factors including demographic data such as type of house, use for electricity and devices, use of vehicles, family life factors, father occupation, mother occupation and income of family factor were used to contribute study involvement and emotional maturity of prospective teachers from different background. The findings of this study would help to teachers, curriculum designers and research followers by highlighting the importance of study involvement and emotional maturity of prospective teachers.

Despite the contribution of the study, there are some limitations that need further examination and investigation. In the case of a study of emotional maturity and study involvement, longitudinal design is more desirable. Due to the scarcity of time and resources, such design is impossible for this study. This study would seem to hold promise for helping to teachers, curriculum designers and research followers by highlighting the importance of study involvement and emotional maturity of prospective teachers for upgrading education standard of Myanmar.

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Gender Differential Item Functioning of Grade 9 Mathematics Achievement

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Abstract

Important consideration of the study is test fairness. A fair test is one that affords all examinees an equal opportunity to demonstrate their skills and knowledge. 1577 students of Grade 9 from three regions participated in this study. After doing item parameters estimation such as item discrimination and difficulty parameters of the test items by two parameter logistic model (2-PLM) of Item Response Theory (IRT), items were selected on the basis of acceptable criteria for item characteristics. When the achievements of gender groups were compared in raw scores and ability scores, it was found that there were achievement differences between gender groups. According to the results, 23 items out of total 50 items showed gender related differences. To identify the presence of potentially biased items, differential item functioning (DIF) analysis was conducted. But they could not be identified as DIF items because the differences were not significant according to their difficulty difference values. Therefore, it could be said that the constructed achievement test in this study had no gender related DIF items for Grade 9 students. And then, this study also examined Mathematics achievement differences between males and females by content areas, cognitive levels and item difficulty levels.

Keywords: achievement test, differential item functioning (DIF), uniform DIF, non-uniform DIF, item characteristics curve (ICC)

Introduction

Since many important decisions based on test results, tests should be designed to provide accurate and valid information about examinees. However, the test results can be occurred with unexpected manners due to the some considerations of factors. When test items affect on the personal attributes such as gender or ethnicity, it may be said that these items function differentially to different groups.

National examination test such as matriculation examination in Myanmar is important partly to give indications of the quality of education,

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as well as for admission into higher institutions. One of the aims of National test is to make the ground for assessment across the country as uniform as possible. Therefore, the tests which are developed for matriculation examination should be free from measurement bias on different student groups of the whole country.

Mathematics is one of academic subjects which are examined at matriculation examination in Myanmar. For people to survive and improve the quality of life, basic learning skills, reading, writing, arithmetic and life skills are necessary and Mathematics education is intended to develop these skills. Needless to say, quality of test items of Mathematics achievement/performance is important for the testing process from basic education level because it can provide the human resources in different groups for all sides of country. Unbiased tests ensure that the scores from assessments are fair to all groups of examinees regardless of gender, ethnicity, etc. For this reason, in this study, it was intended to study how to construct Mathematics achievement test for Grade 9 students and examine their Mathematics achievements regardless of gender related bias items. Although no test can perfectly measure the targeted ability, it was expected that the impact of measurement bias on test scores due to group memberships and other factors were either reduced or equally balanced.

Numerous studies have been investigated gender differences in Mathematics achievement and those studies have been shown that boys perform better than girls in Mathematics (Fennema, 2000; Kamata, and Binici, 2003; MacGregor, 2010). However, an interesting body of international literature suggests that female students can also perform better than male students (Arnot, David & Weiner, 1999). They affirmed that girls were doing better than boys even for tasks that require complex problem solving. Measuring competency in Mathematics was complex because of the wide variety of content included on Mathematics assessment, and many Mathematics skills were foundations for subsequent Mathematics understanding. Therefore, Mathematics differences between gender groups were actually still ambiguous due to variety of test content and test bias.

In the late 1960s and early 1970s, psychometric educators began to respond to test bias issues. They defined the term bias, developed rigorous methods to develop tests that were not biased, and empirically investigated biases in tests. Generally, achievement tests must be of high quality to provide fair and accurate estimate of the ability of all examinees in the

population. In the mid-80s, a more neutral and general term was proposed for detecting potentially biased test items, called Differential Item Functioning, (DIF) (Zhang, 2001). According to Angoff (1993), DIF refers to the simple observation that an item displays different statistical properties in different groups settings after controlling for differences in the abilities intended to be measured.

However, it should be noted that group differences do not often mean DIF of the test. There were several factors which may cause an item to be labeled as revealed DIF when, in fact, no DIF exists. These were 1) non-unidimensional tests, 2) differences in ability distribution of the two groups, 3) differences in item quality, 4) guessing, and 5) nonlinearity of regression. On other hand, if DIF items were proven to be biased after a substantial investigation following the identification of DIF items, test scores should be adjusted to correct for the resulting DIF effect in the test scores. Thus, research aims of most of the DIF studies were identifying potentially biased items, and providing test developers with guidelines for item development intended to create quality test items without bias.

The above reasons became this study to focus on gender effects on differences in Mathematics achievement. Mathematics achievement test of Grade 9 in Myanmar was routinely conducted by school –based test and sometimes in local- based test at the end of an academic year. Since national test or matriculation test was based on the whole country, the gap of testing system between the Grade 9 and Grade 10 was large. So, it may result that the students who passed the Grade 9 test may not enough sufficient to face the national test (i.e., Grade 10 test), and then the extending result of larger fail rates in the national test or Grade 10 test may be occurred. Therefore, if the Grade 9 Mathematics achievement test was conducted as country-based, the researchers or the test developers are necessary to know the testing process with strengths and weakness of the test.

Purposes of the Study

The main purpose of this study was to identify Mathematics achievement items that functionally differentiated between male and female students (gender) and/or to examine a possible interaction Mathematics achievement of gender groups. Specifics objectives were to develop Grade 9 Mathematics achievement test by IRT, to analyze and identify potentially bias items or differential functioning items across gender groups of Grade 9

students, and to analyze whether gender differences were due to content areas, cognitive levels and item-difficulty level of the items of the test.

Method

Research Method

Quantitative survey method was used in this study. Data were mainly analyzed by IRT based DIF method.

Participants

A sample of 1577 Ninth Grade students (males=688 and females=889) participated from 20 high schools and branched high schools in Ayeyarwady Region, Bago Region and Yangon Region. Participants and schools from the nine townships were randomly selected.

Planning the Test

This Mathematics achievement test was designed along two dimensions: (1) a content dimension specifying the knowledge domain or subject matter, and (2) a cognitive dimension specifying the cognitive demands elicited to solve test items. All items were developed based on these two dimensions. There were four content domains used for Grade 9 students; number ($n=13$), algebra ($n=12$), geometry ($n=20$) and statistics ($n=5$).

Each cognitive demand level includes a range of content domain. Items at knowledge level were almost equally distributed in the four content domains because they were distributed nearly with (20%) of the items in each category. The content domain of probability/statistics was significantly fewer than the other content domains because one topic only was included in Grade 9 Mathematics Course.

Items developed in the cognitive demand level of comprehension level tended to be in the content domain of number (54%), algebra (33%), geometry (60%) and those of application level tended to appear in content domains of algebra and geometry was (41%) and (25%) and number was (23%). The item distribution at the four content areas across cognitive demand levels indicated the heterogeneity of items in each cognitive demand levels. In the study, multiple-choice item type was used because the number of items in the test based on the whole content of the Grade 9 Mathematics. Moreover, another reasons for using this item type alone were

that this type may be the source of potential bias of the test according to the literatures (DeMar, 2000; Henderson, 2001; Zhang, 2001, & Yan, 2005) and that there was no enough time periods to develop items with multi-item format.

Procedures for Data Analysis

The test was administered to the participants and it was allowed 90 minutes to complete. When the required datasets were prepared, data analysis was conducted. Then, item parameters (a-, b- and c-parameters) and ability parameters were estimated by using Bilog-MG software. In this study, DIF was investigated by comparing the item characteristic curves (ICCs) of two gender groups and by analyzing the area between the ICCs over some internal on the ability scale as an indicator of DIF.

Findings and Discussion

Gender Related Differences in Mathematics

The descriptive statistics results of the study were shown in the Table 1 in which there were slightly differences of average values of the raw scores and their ability scores between gender groups.

Table 1. Descriptive Statistics for Gender Groups

Gender	N	Raw Score		Ability θ Score		Difficulty Value	
		Mean	SD	Mean	SD	Mean	SD
Male	688	23.37	9.46	0.01	1.10	0.47	0.20
Female	889	25.24	9.76	0.22	1.08	0.50	0.19
Total	1577	24.42	9.63	0.13	1.09	0.49	0.19

In the Table 1, it could be observed that there were differences in mathematics achievement by gender groups. Here, it was focused on gender effects on differences in Mathematics achievement. Item difficulty was considered as the main item characteristics in this study and thus, uniform DIF items were identified. Uniform DIF exists when the differences in the probability of answering an item correctly between the reference and focal groups was the same across all ability levels. Males group was assigned as the references group and females group as focal group.

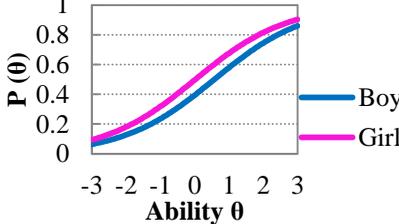
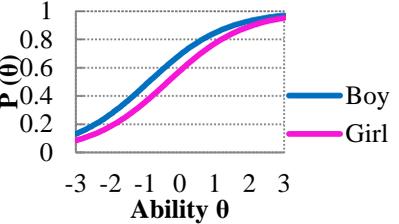
Identifying the DIF Items

First, 23 out of total 50 items showed gender differences in the Mathematics achievement test. Since some items favored male students and some items favored female students, these items were categorized by male-favored items and female-favored items, as shown in Table 2. Male-favored items were items which were easier for males than females even when both groups have same ability. And female-favored items also mean those which were easier items to solve for females than males. If difference value was above 1.00, it was large DIF. According to these criteria, there were no DIF items for gender groups. Therefore, it could be confirmed that the constructed achievement test had no DIF items for Grade 9 students.

In algebra content area, female-favored items were items of 2, 6, 7, 23, 24 and 25. According to the results, most of the differences in achievement items in content area of algebra occurred that these items were in the formed of formulas, computations, principles and simple problems which do not required any creative thinking and higher order thinking to solve the problems. Hence, this result was indicated that females generally performed better than algebraic problems.

For the content of the Number, total numbers of five items were occurred in gender related differences in Mathematics achievement. They were items 13, 14, 15, 27 and 29. Results were showed that there were only female-favored items in content area of Number. Therefore, the present study showed that female students usually performed better on Number and Computation or numerical ability items.

Table 2. Gender related Differences and/or DIF Items in Content Areas

Item	ICCs	Analysis
<p>Item-2</p> <p>Which is the following true?</p> <p>A. $a \in \{b,c,d\}$</p> <p>B. $a \subset \{b,c,d\}$</p> <p>D. $\{b,c,d\}$</p> <p>C. $\{b\} \subset \{b,c,d\}$</p> <p>E. $\emptyset \in \{b,c,d\}$</p>	<p style="text-align: center;">Algebra</p> 	<p>$a = 0.44$</p> <p>$b_1 = 0.57$</p> <p>$b_2 = 0.02$</p> <p>$b_2 - b_1 = -0.55$</p> <p>Differences=Female-favored</p>
<p>Item-50</p> <p>If central angle of a circle of radius 14 cm cut off an arc of length 28 cm, then the radian measure of the angle is</p> <p>A. 2</p> <p>B. $2\sqrt{2}$</p> <p>C. 1 D. 4</p> <p>E. 8π</p>	<p style="text-align: center;">Geometry</p> 	<p>$a = 0.53$</p> <p>$b_1 = -0.90$</p> <p>$b_2 = -0.35$</p> <p>$b_2 - b_1 = 0.55$</p> <p>Differences= Male-favored</p> <p>Sig. DIF = 0.36</p> <p>DIF Item = No .DIF</p>

Note: a = equated discrimination value for both groups, b_1 = difficulty value for males group and b_2 = difficulty value for females group

For the content area of Statistics, three items showed gender related differences in Mathematics achievement. All items of 30, 31 and 32 showed items in Statistics content area specifically favored in female students. In item No.32, it was pointed out that female students were generally performed better than male students in statistics items because these items were especially related in computation of numbers. So, females generally performed in daily usage statistics problems and works of accounted than males as in previous results.

For the Geometry content area, the results showed that only some items favored to female students but most favored to male students. Hence, this result was found that although geometry content of items were almost favored to males but sometimes females have been favored on both word problems and geometry items.

Item No.8 favored to female students because it represents the basic concepts of co-ordinate geometry and taken from the exercise of Grade 9 textbook. So, although this item was geometry content area, female students could be memorized the formats and they could have experience in practicing as in these items or as in similar items. Due to this fact, female students performed better than male students in this type of item in geometry. On the other hand, item No.50 favored to male students because it required both computation of numbers and figure to obtain adequate answer. So, male students who could perform better in such problem that contain measurement, coordinate geometry and non-verbal facts as in many previous studies.

As a conclusion for content areas, the study showed only achievement difference points in content areas but it has no significant DIF items. Therefore, it can be interpreted that the developed Mathematics achievement test was free from potential sources of gender related DIF items.

Gender Differences by Cognitive Levels of the Test Items

Gender differences in Mathematics achievement was analyzed by the cognitive demand levels of the items in the test. Based on the results of the study, it was found that male students outperformed in most of higher order thinking (application level in cognitive domain) based items in the test than female students.

And then, female students performed in lower levels of cognitive demand required items. These levels of items (knowledge and comprehension levels) were generally in demonstrated in memorizing, practicing and these items included in abstract, simple Mathematics items that focused on formula, equation, or theory.

However, both male and female student performed similarly in items of comprehension level of Mathematics achievement test. This means that items in cognitive demand of comprehension level was required fairly mental skills to items right for both groups. These items contain that not

only basis concepts but also difficult distracts to obtain the correct answers. These items pay fairly attentions to examinees. In the study, the results pointed that most of the items of higher level of application level were favored to male students. So, male students performed better than female students in higher cognitive skills level.

Gender Differences by Item Difficulty Levels of the Test Items

In this study, item levels of the test items were grouped into three dimensions such as higher level, moderate level and lower level. In the IRT analysis, the acceptable difficulty parameter ranged from -2 to +2. In this study, high item-level was assigned for difficulty values of above +2, moderate item-level was for difficulty values from -2 to +2, and low item level was for below -2 for both groups. According to the results of the study, low difficulty item-level and moderate difficulty item-level favored to both males and females groups, but high difficulty item-level for only males group. Thus, it was concluded that only difficult items favored to male students.

Conclusion

The purpose of the study was to detect gender related DIF analysis in Grade 9 Mathematics achievement by IRT based analysis method. And this study was explored the gender differences in Mathematics achievement and whether these differences were due to potential sources of bias items or DIF items of the test. The results of the study also showed that, as in other findings of the previous studies, male students performed better in some point, female students performed better in some point and both groups performed equal rates in some areas.

In this study, gender DIF items were mainly analyzed. In fact, other factors such as instructional factors (teacher competency, instructional strategies and techniques) and individual factors (self-direct learning, arithmetic ability and motivation) should be studied in the future.

Moreover, this study showed distinctly effect on most of the Mathematics achievement of routine or textbook based problems differences between gender groups of Grade 9 students. So, it was necessary to focus on other potential differences which effects of the non-routine or real- world related problems, too.

Next, it has been observed the effect of differences of multiple-choice items formats of Mathematics achievement in gender groups. Therefore, it should be analyzed whether males outperform females in other item types and/or whether there were their interaction effects between gender DIF and all item types in the future studies.

In summary, constructed Mathematics achievement test in this study was free from bias items of DIF items, and thus they could be used to obtain valid results. Nonetheless, this study results predictable and pay guidelines for the future researchers and test developers to have fairness in testing and tests construction process.

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The Impact of Middle School Students' Numerical Aptitude and Spatial Aptitude on their Mathematical Achievement

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Abstract

The purpose of this study was to investigate the impact of middle school students' numerical aptitude and spatial aptitude on their mathematics achievement of Grade-8 students from Bago Region. This study also aimed to find out the gender differences in numerical aptitude, spatial aptitude and mathematics achievement of Grade-8 students. Quantitative approach was used in this study. There were altogether six schools in this study. A total number of 600 middle school students from six middle schools in Bago Region participated in this study. An aptitude test questionnaire containing two categories of aptitude, namely, numerical aptitude and spatial aptitude were administered. For mathematics achievement test, first semester mathematics question was used. The results pointed out that these students' mathematics achievement was strongly correlated with their numerical aptitude and spatial aptitude at 0.01 levels. As the result, the female students outperformed male students in their mathematics achievement.

Keywords: Aptitude, numerical aptitude, spatial aptitude.

Introduction

Education plays a vital role in our success in the personal growth. Without education, a person is incomplete so education makes man a right thinker and a correct decision maker. Mathematics is not only critical skill for all but also important for all adults in life because a mathematically well-educated population will contribute to the country's economic prosperity, and it is a core matter for its own sake. Numeracy or mathematical knowledge is crucially important which is increasingly necessary in a range of life-skills. Spatial aptitude or visuo-spatial ability is the capacity to understand, reason and remember the spatial relations among objects and space.

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Significance of the Study

Numerical Aptitude is one of the most basic skill areas, one that exists in small children well before they are taught mathematics in school. Numerical Aptitude includes evaluating situations and drawing conclusions from the data. Spatial aptitude can be best defined as the ability to “generate, retain, retrieve, and transform well-structured visual images.” Spatial aptitude is also important for success in fields such as sports, technical aptitude, mathematics, natural sciences, engineering, economic forecasting, meteorology, chemistry and physics. For above reason, this study was made to investigate the impact of middle school students’ numerical aptitude and spatial aptitude on their mathematics achievement of Grade-8 students from Bago Region.

Purposes of the Study

The main purpose of this study was to know the impact of middle school students’ numerical aptitude and spatial aptitude on their mathematical achievement. The specific purposes of this study were as follow:

1. to determine the group differences among boys and girls in relation to their numerical aptitude and spatial aptitude.
2. to compare the group differences among boys and girls in relation to their achievement in Mathematics.
3. to assess the relationship between numerical aptitude and spatial aptitude on achievement in mathematics of the middle school students.
4. to investigate the impact of middle school students’ numerical aptitude and spatial aptitude on their mathematical achievement.

Scope and Procedure

A study on the impact of middle school students’ numerical aptitude and spatial aptitude on their mathematical achievements was conducted with survey questionnaire. And the analysis was conducted by using Statistical Package for Social Science (SPSS). Descriptive statistics, ANOVA analysis, the independent test, the correlation and regression analysis were computed for each purpose. 600 Grade-8 students from six middle schools in Bago Region were selected for this study.

Definitions of Key Terms

Aptitude. A specific ability (Berk, 2000) such as carrying out arithmetical calculations or recalling facts from information that have been used. It forms as a result of the interaction between individual characteristics and learning opportunities in the environment (Cohen and Swerdlik, 2002).

Numerical Aptitude. The understanding of conceptual knowledge of numbers, rules and procedures of arithmetic operations and application of these rules in logical strategies (algorithmically, logically, inductively) in order to solve problems (Aye Aye Myint, 2000).

Spatial Aptitude. The ability to generate, retain, retrieve, and transform well-structured visual images (Gardner, 1993).

Review of Related Literature

The Importance of Mathematics

Mathematics problem solving is activity such as doing words problems, creating patterns, interpreting figures, developing geometric construction and proving theorems (Willson & Fernandez, 2001). Mallik and Varua (2008) have highlighted that the lower numeracy skills can have a detrimental effect on a country's productivity. Depaolo and McLaren (2006) claim that there are two points of fewer women mathematics ability: gender disparities and genetic bias.

Piaget's Developmental Stages of Cognitive Development in Numerical Ability

The development of cognitive depends on the maturity, experience, culture, and the ability of the child. (Papila & Olds, 1996). Four stages of cognitive development in numerical ability are

1. **Sensorimotor stage** – progressive acquisition of object permanence. Children can link numbers to objects.
2. **Pre-operational stage** – increase language ability, symbolic thought, and egocentric perspective and develop to one aspect or dimension of an object.
3. **Concrete operational stage** – accelerate language and acquisition of basic skills and utilize their sense “to know”. Children can able to hand-on experiences.

4. **Formal operational stage** – Children capable of forming hypothesis and deducing possible consequences and develop abstract thoughts.

Numerical Ability

Numerical ability is the ability to deal with numbers and intended to make a major speed accuracy of numerical operations (Othman, 2006). It is promoted by teaching students to understand these (conceptual and procedure knowledge) and apply them in students' daily life in a flexible way using their independent thinking. Siegler et al. (2005) stated that numerical aptitude students to be flexible in using the calculation instead of the procedures they have learnt in school.

Spatial Aptitude

Spatial Aptitude may be defined as the mental skills concerned with understanding, manipulating, recognizing or interpreting relationships visually (Carroll, 1993). Mathematics is closely related to spatial-visualization is Geometry (Jams & James, 1968) but Smith (1964) pointed out spatial ability may not be related to mathematics ability at beginning stages of mathematics learning; advanced mathematics learning increasingly depends upon spatial ability.

Method

Participants

A total number of 600 students from six middle schools in Bago Region participated in this study.

Method

Descriptive survey research method was used in this study.

Procedure

All the measures used in this study were adapted to Myanmar version. After preparing the measuring scales, expert review was conducted for face validity and content validity by thirteen experts from Department of Educational Psychology, Yangon University of Education. And then, in the second week of December, pilot study was done with a sample of 60 student teachers from BEHS, Kyauk Tan, Bago Township, Bago Region. The Internal Consistency (Cronbach's Alpha) of the Numerical Aptitude Test Questionnaire was 0.863. The Internal Consistency (Cronbach's

Alpha) of the Spatial Aptitude Test Questionnaire was 0.734. Therefore, the computations of Cronbach's alpha showed that all the measures were highly internally consistent.

Data Findings and Analysis

Means and standard deviations of Grade 8 students' numerical aptitude, spatial aptitude and mathematical achievement were analyzed and the results were shown in Table 1.

Table 1. Descriptive Statistics of Numerical Aptitude, Spatial Aptitude and Mathematical Achievement of Grade 8 Students in Bago Region

Variables	N	Mean%	Number of Items	Std. Deviation
Numerical Aptitude	600	14.52	43	3.794
Spatial Aptitude	600	12.54	30	3.219
Mathematical Achievement	600	64.51	30	27.820

Based on the descriptive statistics shown in Table 1, the mean score for mathematical achievement was generally highest of all variable, the mean score for numerical aptitude was the second highest but the mean score for spatial aptitude found to be the lowest of all. Therefore, it could be concluded that most of Grade-8 students were relatively weak in their spatial aptitude.

Table 2. Comparison of Numerical Aptitude, Spatial Aptitude and Mathematics Achievement by Gender

Variables	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Mathematical Achievement	Male	300	62.00	34.10	2.217*	598	0.027
	Female	300	67.02	19.37			
Numerical Aptitude	Male	300	14.30	3.84	1.403	597.584	0.161
	Female	300	14.73	3.74			
Spatial Aptitude	Male	300	12.45	3.33	0.714	598	0.475
	Female	300	12.64	3.10			

In order to examine the gender difference among mathematics achievement and two aptitude measures of students in Bago Region, the independent sample t-test was used and the results were analyzed in Table 2.

According to the results of t-test, it was confirmed that there was a significant difference between male and female students in their mathematical achievement ($p < 0.05$) but not the others variables. So, it could be concluded that female students performed significantly better than male students in their mathematics achievement ($t = 2.217, p < 0.05$).

Correlations Among Numerical Aptitude, Spatial Aptitude and Mathematics Achievement

In order to find out the interrelationship among mathematics achievement, numerical aptitude and spatial aptitude measures of students from selected schools, the correlation analysis was conducted and the results were shown in Table 3.

Table 3. Correlations Among Numerical Aptitude, Spatial Aptitude and Mathematics Achievement of Grade 8 Students.

Variables	NA	SA	MA
NA	1	-	-
SA	.224**	1	-
MA	.449**	.260**	1

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

Note: NA= Numerical Aptitude Test, SA= Spatial Aptitude Test, MA= Mathematical Achievement

Table 3 showed that students' numerical ability was significantly correlated with spatial ability ($r = .224, p < 0.01$), and mathematics achievement ($r = .449, p < 0.01$). Spatial ability was significantly correlated with numerical ability ($r = .224, p < 0.01$) and mathematics achievement ($r = .260, p < 0.01$). Mathematics achievement was significantly correlated with numerical ability ($r = .449, p < 0.01$) and spatial ability ($r = .260, p < 0.01$). Therefore, all variables were significantly correlated with one another. According to the results, it could be interpreted that higher sense of numerical aptitude and spatial aptitude, the higher mathematics achievement scores.

Multiple Regression Analysis for Numerical Aptitude, Spatial Aptitude and Mathematics Achievement of Students

To investigate the best predictors of Grade 8 students' mathematics achievement in Bago Region, multiple regression was conducted and the results were shown in Table 4.

Table 4. Multiple Regression Analysis for Numerical Aptitude, Spatial Aptitude and Mathematics Achievement of Students

Variables	B	β	<i>t</i>	R	R ²	Adjusted R ²	F
Mathematics Achievement	20.123		5.675	.477	.228	.225	88.068***
Predictor Variables							
Spatial Aptitude	1.018	.167***	4.538				
Numerical Aptitude	2.121	.411***	11.17				

Note: R²_{adj} = .225, F(2,597) = 88.068, ***p < .001

The adjusted R square value was .225. This indicated that approximately 23% of variances in mathematics achievement can be predicted from the independent variables. The results revealed that numerical aptitude and spatial aptitude were significantly correlated with their mathematics achievement. Numerical Aptitude appeared to be the strongest predictor of mathematics achievement. Spatial Aptitude appears to be the second strongest predictor of mathematics achievement. Then, the model can be defined by the following equation:

$$\text{MA} = 20.123 + 1.018 \text{ SA} + 2.121 \text{ NA}$$

Note: MA = Mathematical Achievement, SA = Spatial Aptitude, NA = Numerical Aptitude

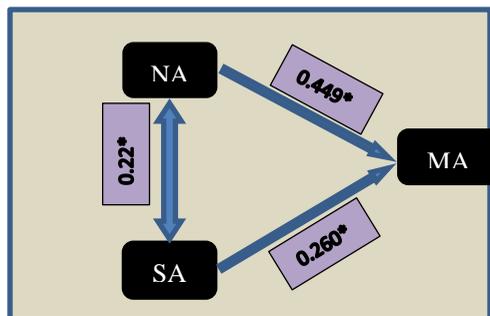


Figure 1. Correlations Among Numerical Aptitude, Spatial Aptitude and Mathematical Achievement

Conclusion

According to the result, female students perform better than male students in terms of their numerical aptitude, spatial aptitude and mathematics achievement. For gender difference, this finding was consistent with previous research conducted by Melecan's (1993) that female students had higher mathematics achievement than male students. This finding pointed out that students' mathematics achievement correlated with their numerical aptitude and spatial aptitude at 0.01 level. So, it could be concluded that students who have higher levels of numerical aptitude and spatial aptitude tend to possess better achievement in mathematics. According to the finding, it was found out that students' spatial and numerical aptitude were the best predicting factors for mathematics achievement. So, it can conclude that Grade 8 students must originally have at high level of spatial aptitude and numerical aptitude if they want to possess better mathematics achievement at high school level.

Suggestions

The following suggestions were given to mathematics teachers.

- The teachers should be aware of the influence of numerical aptitude and spatial aptitude in students' mathematical achievements.
- Teachers should know the fact that spatial aptitude and numerical aptitude are the best predictors of mathematics achievement for students at high school year.

- Teachers should prepare the appropriate teaching-learning activities to improve students' numerical aptitude and spatial aptitude with the use of proper cognitive learning strategies.

Recommendations

It was recommended that this study will be very advantageous to teachers, curriculum developers and teacher. The numerical aptitude exists even in infancy, before children begin to receive explicit instruction in mathematics in school. So curriculum developers should synthesize the numerical aptitude concepts in the elementary and secondary education. Currently, spatial aptitude is neglected during elementary and secondary education in our country. So, teachers should create appropriate teaching-learning activities which can enhance spatial ability. Future researches related to this study recommended to emphasize ways to enhance students' numerical aptitude and spatial aptitude for better results of mathematics learning.

Limitations of the Study

In this study, larger sample size should be more desirable. The research was conducted only in Bago Region. Therefore, for better results, the research should be carried out in all States and Regions in Myanmar. Despite these limitations, the findings from this research will provide directions for future research in developing a comprehensive theoretical model of numerical reasoning ability, spatial aptitude and mathematics achievement of high school students.

Future Research

The future researchers should focus on the research with regard to all-round development of students from high schools. This research should be conducted using a longitudinal design. Moreover, in-depth case study is required to explore to what extent personal factors relate to numerical aptitude, spatial aptitude and mathematics achievement. The effective and efficient intervention plan always needs to be regulated after conducting assessment. Moreover, the research studies with large sample size from different regions would be more desirable so that more reliable, generalized and valid data can be achieved.

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The Most Significant Factors Influencing the Students to be At-risk

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Abstract

The primary purpose of this study was to investigate the most significant factors influencing the students to be at-risk of the selected nine factors: single head of household, low socioeconomic status, low educational attainment of parents, psychosocial factors, low overall academic achievement, teacher-student relationship, parent-student relationship, motivation and peer influence. Data analysis involved the use of descriptive and inferential statistics. Mentor Research Institute's (2006) At Risk Screening Questionnaire was applied to identify at-risk students with the help of classroom teachers and executive classroom teachers. Total 77 Grade 9 at-risk students from sixteen high schools of Eastern Bago Region and Yangon Region participated in this study to respond student survey questionnaire which is comprised of 33 items of Catherine Lynn Worley's Student Survey Questionnaire and 25 items of researcher's self-developed questionnaire. The findings revealed that selected nine factors concerned with and had certain impacts on at-risk students. The numbers of at-risk students were more in Yangon Region than Eastern Bago Region. Male were more at-risk than female. At-risk level of students from Yangon Region approached to nearly high level whereas student from Eastern Bago Region were around low level.

Keyword: At-risk

Introduction

“Education for All”, this motto means that everyone has the right to and can fairly and equally learn, whether rich or poor. According to this, some programs and projects occurred and implemented in Myanmar such as Free Primary Education, Free Secondary Education, Non Formal Primary Education, Mobile Schools, street schools and so on, especially intended for children who struggle to attend school for a variety of difficulties. However, likewise the saying “Nothing is complete,” although the above programs

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and projects are really and advantageously implemented and conducted, there are still many children who are at high potential of dropping out of school and have dropped out of schools. Children who are in great difficulties to learn are called at-risk students. The literature indicates there is a stigma associated with children labeled at-risk.

With this stigma are misconceptions that infer children at-risk as troubled children who cannot learn (Conrath, 1994). Such close mindedness negates what is real, and that is all children want and can learn. Every child has their individual talents and gifts to offer society, many of which go unnoticed or spurned in schools. Research has shown that children at-risk have unique abilities, and all would profit if schools would accommodate the needs of all children. Failure is not a chosen goal of at-risk youth. They just need help in breaking the pattern (Conrath, 1988).

General Colin Powell made the following statement at a Philadelphia convention when George W. Bush was nominated as a candidate for President of the United States. Powell said;

“We either get back to the task of building our children the way we know how, or we’re going to keep building jails in America. And it is time to stop building jails in America and get back to the business of building of our children (Cassel, 2001).

The only one option must be the task of building at-risk children. In fact, teachers, parents, and society, have the inborn responsibility to pass on their life-long experiences and knowledge to younger generation, also future prospective leaders. One fact which has been kept in mind is not all children are in the same situation and background, that is not all are in normal life situations. Some children encounter many adverse circumstances that can’t withstand even an adult. They also are human beings and should have the right to experience the pleasurable experiences that a human being has.

Therefore, researchers have the profound responsibility to explore most significant factors that influence the children to become at-risk. And then, they have to notify these factors of parents and society in order to provide certain intervention programs and bring them to their hopeful future.

Purpose of the Study

The purpose of this study was to explore the most significant factors influencing the students to be at-risk of the selected nine factors such as single head of household, low socioeconomic status, low educational attainment of parents, psychosocial factors, low overall academic achievement, teacher-student relationship, parent or caregiver-student relationship, motivation and peer influence. And then, to notify the result of this study of teachers, principals, parents and the whole society if possible.

Literature Review

The term “at-risk” came into use after the 1983 article “A Nation at Risk”, published by the National Commission of Excellence in Education. The article described United States society as being economically and socially endangered. Education borrowed the term “at-risk” from the field of epidemiology (Richardson, Caranova, Placier, and Guilfoyle, 1989), a branch of medical science that deals with the incidence, distribution and control of disease in a population (Webster, 1975). However, in the educational setting, “at-risk” is most commonly related to dropping out of school. Although the dropout issue and the at-risk issue are practically inseparable, most practitioners use “at-risk” label in a broader context than just dropping out. The Goal 2000; Educate America Act of 1994 identifies an at-risk student as one who, because of limited English Proficiency, poverty, race, geographic location or economic disadvantages, face a greater risk of low educational attainment or reduced academic expectations (U.S. House of Representatives Reports 103-446).“The term at-risk is particularly applied to young people whose prospects for becoming productive members of society look dim” (Hepburn and White, 1990).

According to Boyd (1992), family background, personal characteristics of the child, the school context and the social behavior of children interact to create conditions that place children at-risk of failing to achieve their academic potential, dropping out of school and/or having limits placed on their ability to function as productive adults in society.

Sanders and Sanders (1998) said one way to keep students in school is to keep them feel like they belong and to make school more interesting. But in order for any plan to work will require the combined efforts and talents of students, educators, parents, community members (public and

private), and business leaders coming together to address and meet the needs of their youth at-risk.

Data Analysis and Results

With the use of descriptive statistics and data collected from at-risk students in Eastern Bago Region and Yangon Region, the relationships of selected nine factors and at-risk students can be predicted. Descriptive analysis described the mean and standard deviation for the whole sample as 130.92 and 13.46 (see Table 1).

Table 1. Mean and Standard Deviation of Total Score for Most Significant Factors Influencing the Students to be At-risk

	No. of Sample	Min	Max	Mean	SD
Most Influential Factors to be At-risk	77	89	168	130.92	13.46

SD = Standard Deviation

According to Table 2, low educational attainment of parents had the highest mean value (74.35%) among other factors. It was followed sequentially by psychosocial factors (71.23%), low overall academic achievement (67.02%), low socioeconomic status (59.42%) and peer influence (55.57%). According to the above result, most parents of sample Grade 9 students were completed low level of education. The rest followed factors were also closely in touch with them to a certain extent. It may be assumed that teacher-students relationships and parent-child relationships were also concerned factors of sample students but not as strong as above factors as their mean values were (51.95%) and (50.19%). Single head of household (44.91%) and motivation have the least mean value (44.62%), so it may be interpreted that they did not generally have motivation to do academic subjects enthusiastically and generally they live in formal two-parent families (see Table 2)

SH and PS were positively and strongly correlated. So, the more the students lived in single head of household families, the more they had and felt psychosocial problems. LSES and LEAP were also positively and

fairly correlated. The lower their parents' educational attainment was, the lower their academic achievement.

Parents' socioeconomic status will be positively and strongly correlated LEAP and PSR. So, the lower their parents' educational attainment was, the poorer parent-student relationship will be. PS was positively and strongly correlated with LOAA, this mean that the more they had and felt psychosocial problems, the lower their academic achievement will be. Besides, PS was negatively and strongly correlated with PSR, thus the poorer the parent-student relationship was, the stronger their psychosocial problems will be. LOAA and PI were positively and fairly correlated with each other. Therefore, the greater the peer influence to dropout, the lower their academic achievement will be. PSR and M were also positively and strongly correlated. It means that the better the parent-student relationship was, the stronger the motivation to study will be.

Table 2. Mean Comparisons of the Most Significant Factors Influencing the Students to be At-risk

No.	Factors	Items	Mean %	SD	Min	Max
1.	Single Head of Household	6	44.91	13.06	25	83
2.	Low Socioeconomic Status	3	59.42	18.05	25	100
3.	Low Educational Attainment of Parents	3	74.35	13.90	42	100
4.	Psychosocial Factors	8	71.23	11.76	41	97
5.	Low Overall Academic Achievement	7	67.02	11.74	39	100
6.	Teacher-Student Relationship	8	51.95	7.29	38	69
7.	Parent -Student Relationship	10	50.19	11.02	25	82
8.	Motivation	7	44.62	11.99	25	79
9.	Peer Influence	6	55.57	11.75	25	88

M and PI were also positively and strongly correlated. Thus, the greater the peers influence to dropout, the stronger the motivation to study. It was a strange result and difficult to give an appropriate reason. Nevertheless, possible reason may be due to hidden resilience of some at-risk students.

Correlation between At-risk Situation and Selected Nine Factors

Table 3 described the correlation between students' at-risk situation and selected nine factors. According to this table, low socioeconomic status was negatively and significantly correlated with students' at-risk situation. So, the lower the socioeconomic status was, the more serious the student's at-risk situation will be. And then, psychosocial factors were positively and strongly correlated with students' at-risk situation. This means that the greater their psychosocial problem was, the more serious their at-risk situation will be. Other factors were also fairly correlated with at-risk situation although they didn't significantly correlate with it. SH was positively correlated with AR, so the more the student lived in single head of household families, the more serious their at-risk situation will be.

LEAP was negatively correlated with AR, thus it can be interpreted that the lower their parents' educational attainment was, the more serious their at-risk situation will be. LOAA was also positively correlated with AR, therefore the lower their overall academic achievement was, the more serious their at-risk situation will be. TSR and PSR were negatively correlated with AR. Thereof, the poorer the teacher-student relationship and parent-student relationship was, the more serious their at-risk situation will be. M and AR were positively correlated although this result was not really reasonable. Possible reason may be due to their background supports. Although the students had intrinsic motivation to do study, their family background and other social problems placed them to serious at-risk situation. Thus, the stronger their intrinsic motivation to study was, the more serious their at-risk situation will be.

Table 3. Correlations between At-risk Situation and Selected Nine Factors

	SH	LSES	LEA	PS	LOAA	TSR	PSR	M	PI
AR	0.408	-0.532**	-0.209	0.551**	0.479	-0.455	-0.496	0.350	0.304

Although researcher firstly intended to do multiple regression analysis of each factor to get more valid data, different at-risk level of sample students made it difficult to conduct and didn't show any significant results for each factor. Thus, selected nine factors were grouped into three: parental factor (single head of household, low socio-economic status, low

educational attainment of parents and parent-child relationships), personal factor (psychosocial factors, low overall academic achievement and motivation), and school factor (teacher-students relationships and peer influence) to conduct hierarchical multiple regression. A three step hierarchical multiple regression analysis was used to assess how much additional variance in at-risk situation can be explained by adding predictor variables. Variables that explained at-risk situation were entered in three steps. In step 1, "At-risk situation" was the dependent variable and parental factor was the independent variable. Personal factor was entered into step 2 equation, and then the process was repeated at step 3 with school factors. Before the hierarchical multiple regression analysis was performed, the independent variables were examined for collinearity. Results of the variance inflation factor (all less than 2.0) and collinearity tolerance (range from 0.682 to 1.0) suggested that the estimated β s were well established in the following regression model. Moreover, three independent variables didn't violate the assumption of singularity, an important assumption of hierarchical multiple regression analysis.

The results of the regression analysis revealed that parental factor was able to account for 6% of the variance in at-risk situation when entered at Step 1, since $R^2 = 0.063$. Personal factor was able to account for 34% of variance in at-risk situation at Step 2, $R^2 = 0.340$, $p < 0.05$. Again, school factor was able to account for 39% of variance at Step 3 as $R^2 = 0.391$. To check with adjusted R^2 , parental factor can account for only 1.5% and negatively correlated, personal factor can account for 22% and school factor can predict for 20.8%. Adjusted R^2 was used to avoid overestimation of the result due to small sample size and other related factors. If to study R^2 change value, only personal factor was significantly increased in prediction value and it also made the R-square value increased from 0.063 to 0.391. Moreover, it was positive and significant predictor of at-risk situation, ($\beta = 0.674$, $p < 0.05$). Parental factor and school factor were negative predictors of at-risk situation, but not significant ($\beta = -0.102$ and $\beta = -0.299$).

Table 4. Standardized Beta Coefficients from Hierarchical Multiple Regression Analysis of At-risk Situation

Predictors	Step 1	Step 2	Step 3
1.Parental Factors	.250	-.109	-.102
2.Personal Factors		.638*	.674*
3.School Factors			-.299
4.R Square	.063	.340	.391
5.Adjusted R Square	-.015	.220	.208
6.R Square Change	.063	.277*	.051

*Correlation is significant at the 0.05 level (2-tailed).

At last, based on the findings of regression analyses, a model of hierarchical multiple regression of independent variables' effect on at-risk situation was shown in following figure to see more clearly the results. This model explained that when parental factor was entered into step 1, it can account for at-risk situation for 6.3%. After controlling parental factor and personal factor was entered into step 2, personal factor accounted for 34% of at-risk situation. Again, after controlling the previous two factors and entering school factor into step 3, the school factor accounted for 39.1% of at-risk situation. Finally, all the above results showed that personal factor was key predictor of at-risk situation. The findings of U.S Department of Education made this study's results confirm that a student's socioeconomic status was an important element of his at-risk status.

Moreover, controlling for racial-ethnic group differences, Chen and Kaufman (1997) identified five risk factors. They considered students were at-risk if they had one or more of the these characteristics: low socioeconomic status, single parent family, an older sibling who dropped out of school, the students themselves changed schools two or more times, repeated a grade (U.S Department of Education, 1992). Among these factors, it was significant that low socioeconomic status was more prior than other factors. Besides, Roueche (1993) described at-risk students as who have a weak self-concept.

Earlier research by Seligman (1975) described at-risk students as those with extreme external locus of control and a belief they have no

influence over their own destiny. The result was a lack of confidence and diminished autonomy (Stephanie Bulger and Debraha Watson, 2006). Moreover, Frymier and Robertson (1990) found that family instability, family tragedy, and personal pain were significantly associated with the risk of failing in schools. Thus in conclusion, low socioeconomic status and psychosocial factors were the most significant factors influencing the students to be at-risk.

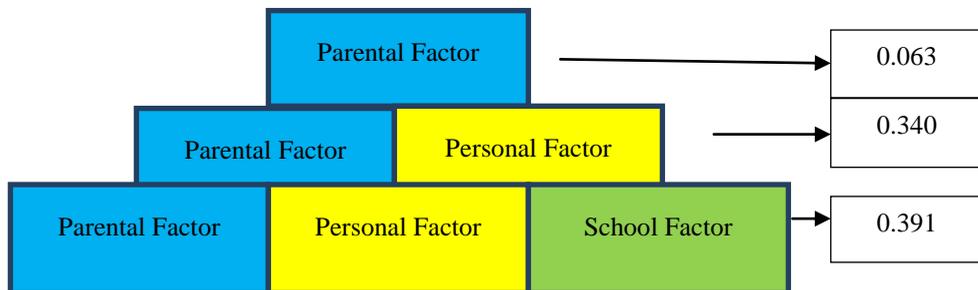


Figure 1. Model of Hierarchical Multiple Regressions of Independent Variables' Predictions on At-risk Situation

Conclusion

The major aim of this study was to discover the most significant factors influencing the students to be at-risk among selected nine factors. Then, to explore whether at-risk level differs on regions, gender and townships. Total 77 Grade 9 students from 16 high schools participated in this study. The mean and standard deviation for the whole sample were 130.92 and 13.46. So, certain factors of the selected nine factors related to some extent to the students' at-risk situation.

To find out the most significant factors influencing the students to be at-risk, inferential analysis was conducted. Significant correlations were found between low socioeconomic status and at-risk situation, and psychosocial factors and at-risk situation. To be able to get more valid information, hierarchical multiple regression was conducted by grouping selected nine factors into three groups (1) parental factors (2) personal factors and (3) school factors.

Results showed that personal factors group was the most significant predictor of at-risk situation and it was followed by parental factors. It can

predict until 34% of at-risk situation and parental factors can predict 6% of at-risk. Although the prediction powers were moderate for personal factors and low for parental factors, standard estimation of error was also low and all the basic assumptions of hierarchical multiple regression analysis were met for this study. Moreover, these results were also consistent with correlation results as psychosocial factors was one factor of personal factors and low socioeconomic status was also one factor of parental factors although correlation results only showed correlations. Therefore, the most significant factors influencing the students to be at-risk were psychosocial factors and low socioeconomic status for this study.

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The Relationship between In-service Teachers' Job Satisfaction and their Teaching Styles

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Abstract

The main purpose of this study was to investigate the relationship between job satisfaction and teaching styles of in-service teachers. A total of 497 teachers from nine Basic Education High Schools and five Basic Education Primary Schools were participated and questionnaire survey method was used in this study. Teacher Job Satisfaction Survey (TJSS) (Nginbudzi, F.W., 2009) Questionnaire was used for identifying job satisfaction among the participating teachers and Teaching Style Survey (TSS) (Grasha-Riechmann, 2007) Questionnaire was developed to identify teachers' various teaching styles. There was significant difference in teachers' job satisfaction by their occupational level. The result showed that P.A.T (Primary Assistant Teachers) were the best in satisfaction upon their job. Teachers' teaching styles by their occupational level revealed that there were significant differences in expert, facilitator and delegator teaching styles but no significant differences in formal authority and personal model teaching styles. Job satisfaction was significantly correlated with the teaching styles. The result of multiple regression analyses revealed that social benefits and meaningfulness of the job appeared to be the predictor of teachers' teaching styles.

Keywords: Job Satisfaction, Teachers' Job Satisfaction.

Introduction

Education is essential to national growth and development. It helps individual to become self-reliant, skillful and good citizens. The future of any nation depends largely on the quality of its educational system. Teachers are instrumental to effective learning and quality education. They guide individual learners towards acquisition of knowledge, skills, abilities, information, ideas and competences needed for purposeful living. Imaobong (2000) saw a teacher as an individual who lays the moral foundation on

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which good citizenship is built (as cited in Osakwe, R.N., 2014). Thus a teacher's job goes beyond teaching. It stretches into moulding and guiding youths, monitoring students and promoting general character training. Teaching is a complex task and multi-dimensional in nature. Therefore, teachers need to be motivated for effective performance, and dedication to their job. Ingwu and Ekefre (2006), Pilot (2007), Aldermon (2004) and Ngada (2003) observed that teacher motivation is a key to quality teaching and high standards of academic performance at all levels of education (as cited in Osakwe, R.N., 2014).

Purpose of the Study

The purpose of this research is to investigate the job satisfaction and teaching styles of in-service teachers from selected townships in Yangon Region and then to examine the relationship, if any, between their job satisfaction and their teaching styles.

Literature Review

Job satisfaction is defined as an attitude that individuals have about their jobs. It is where one feels positively or negatively about the intrinsic and/or extrinsic aspects of own job and the work environment (Bhuiyan and Menguc, 2002; Hoy and Miskel, 1996; Dinham and Scott, 1996; Muchinsky, 1993 cited in Abdullah, Z. & Hui, J., 2014). Job satisfaction is a subjective feeling of an employee at his workplace. These feelings can be favorable or unfavorable towards the organization. In case of favorable conditions, there appears a positive relation between employees' expectations from the job and the benefits that the job offers. It can be said that job satisfaction is connected to privileges and rewards.

The term "teaching style" refers to "a teacher's personal behaviors and media used to transmit data to or receive it from the learner" (Kaplan & Kies, 1995), and involved the implementation of the teacher's philosophy about teaching (Conti, 2004). Heimlich (1990) indicated that the underpinnings of teachers' teaching philosophies may be their values, beliefs, attitudes, aspirations, personal biographies, social identities, cultural background and teaching experiences. According to Grasha (1996), the teaching styles are the pattern of belief, knowledge, performance and behavior of teachers when they are teaching. In this study, according to Grasha (1996), there are five dimensions of teaching styles which are the

expert style, formal authority style, personal model style, facilitator style and delegator style.

Method and Procedure

Participants

The teachers were about 497 teachers selected by random sampling technique from nine Basic Education High Schools and five Basic Education Primary Schools in Yangon Region.

Instrumentation

The teacher job satisfaction survey (TJSS) questionnaire is based on the work of (Ngimbudzi, F. W., 2009). The teaching style survey questionnaire (TSS) is based on the work of (Grasha-Riechmann, 2007). Teaching styles can be classified into five factors such as expert teaching style, formal authority teaching style, personal model teaching style, delegator teaching style, and facilitator teaching style.

Data Analysis and Findings

Teachers' Job Satisfaction from All Selected Schools

To investigate the teachers' job satisfaction, descriptive statistics was carried out and the results were shown in Table 1 and Table 2.

Table 1. Descriptive Statistics for Teachers' Job Satisfaction

Variable	No. of Participants	Mean	SD	Min	Max
Job Satisfaction	497	122.50	12.881	71	160

It was assumed that the teachers from selected schools were satisfied with their work as significant and important and the degree to which an individual perceives their job.

Table 2. Descriptive Statistics for Subscales of Job Satisfaction

Subscales of Teachers Job Satisfaction		Mean	SD	Min	Max
Job Satisfaction	Job Characteristics	43.559	6.209	20	60
	Social Benefits	40.032	3.946	21	50
	Meaningfulness of the Job	16.284	1.867	9	20
	Supportive Administration	11.020	2.150	3	15
	Intention to Remain in the Job	11.608	2.123	3	15

The meaningfulness of the job was the highest and the second highest is social benefits. So, A group of teachers having scores greater than 85 was identified as high group of job satisfaction, a group of teachers having scores between 85 and 69 as middle group of job satisfaction and a group of teachers having scores less than 69 as low group of job satisfaction. It was found that 15% participants had high satisfaction, 73% participants had moderate satisfaction and the remaining 12% had low satisfaction of their job.

Teachers' Job Satisfaction by District

Table 3. Mean Comparison for Teachers' Job Satisfaction by District

Variable	Districts	N	Mean	SD	F	p
Job Satisfaction	East District	135	121.370	12.043	5.222	.001
	West District	115	125.417	13.652		
	South District	117	124.137	11.266		
	North District	130	119.631	13.741		

** The mean difference is significant at the 0.0 level.

It can be interpreted that teachers' job satisfaction from West District was higher than other teachers from the selected schools in Yangon Region. It was evidently found that teachers' job satisfaction from West District was significantly different in their job satisfaction from North District. And then, teachers' job satisfaction from South District was also significantly different in their job satisfaction from North District.

Teachers' Job Satisfaction by Age

Based on the results, the mean score from the age of 31-40 group possessed the highest on the job satisfaction over all ages. The age group of 31-40 teachers satisfied their position and worked actively. This age group of teachers had been seen suitable experience and self-esteem. The age of 20-30 teachers became job anxiety and would not sufficient job training.

Teachers' Job Satisfaction by Teaching Experience

To find out the teachers' job satisfaction by their respective teaching experience, descriptive statistics was made. Based on the results, job satisfaction of teachers from the teaching experience of 31 and above year group was the highest job satisfaction.

Teachers' Job Satisfaction by Occupational Level

Table 4. Descriptive Statistics for Teachers' Job Satisfaction by Occupational Level

Variable	Level	N	Mean	SD	F	p
Job Satisfaction	P.A.T	112	126.17	12.695	6.786	.001
	J.A.T	215	122.16	13.747		
	S.A.T	170	120.51	11.350		

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

Note: P.A.T = Primary Assistant Teacher, J.A.T = Junior Assistant Teacher, S.A.T = Senior Assistant Teacher

For the teachers' job satisfaction according to their teaching experience, it was found that the more teaching experience the teachers have, the higher the degree of satisfaction they have. To find out the differences by occupational level in job satisfaction, descriptive statistics was made. Based on the results of Table 4, It may be assumed that Primary Assistant Teachers (P.A.T) handle children and they are ideal person for their children. Again, post-hoc comparison was computed using Tukey HSD test to find out the difference of job satisfaction among occupational levels of teachers.

Table 5. Results of Tukey HSD Multiple Comparison for Teachers' Job Satisfaction by Occupational Level

Dependent Variable	(I) Occupational Level	(J) Occupational Level	Mean Difference (I-J)	P
Job Satisfaction	P.A.T	J.A.T	2.504283*	.020
		S.A.T	3.532497*	.001

* The mean difference is significant at the 0.05 level.

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

It was evidently found that Primary Assistant Teachers (P.A.T) were significantly different from Junior Assistant Teachers (J.A.T) and Senior Assistant Teachers (S.A.T), respectively.

Teachers' Teaching Styles from All Selected Schools

To investigate the teachers' teaching styles, descriptive statistics was carried out and the results were shown in Table 6.

Table 6. Descriptive Statistics for Subscales of Teachers' Teaching Styles

	Subscales	No. of Item	Mean	SD	Min	Max
Teaching Styles	Expert	8	31.421	2.768	23	40
	Formal Authority	8	30.833	2.988	21	40
	Personal Model	8	32.704	3.356	20	40
	Facilitator	8	31.988	3.318	19	40
	Delegator	7	26.720	3.522	16	35

By using the data obtained from the selected schools, the teachers' teaching styles can be estimated. The mean of personal model was higher than those of other variables. It may be interpreted that the teachers from selected schools teach personal examples in their class to illustrate the material.

Teachers' Teaching Styles by Age

Table 7. Descriptive Statistics for Teachers' Teaching Styles by Age

Variables	Age	N	Mean	SD	Min	Max
Expert	20-30 yrs	17	30.529	3.484	26	38
	31-40 yrs	78	31.654	2.454	27	40
	41-50 yrs	111	31.315	2.615	23	40
	51yrs and above	291	31.450	2.859	23	40
Formal Authority	20-30 yrs	17	29.412	2.959	26	39
	31-40 yrs	78	30.987	2.541	26	40
	41-50 yrs	111	30.622	2.757	21	40
	51 yrs and above	291	30.955	3.168	21	40
Personal Model	20-30 yrs	17	30.706	3.360	26	39
	31-40 yrs	78	32.821	2.882	24	40
	41-50 yrs	111	32.748	3.064	23	40
	51 yrs and above	291	32.773	3.554	20	40
Facilitator	20-30 yrs	17	30.176	2.811	25	37
	31-40 yrs	78	32.026	3.263	25	40
	41-50 yrs	111	32.018	2.982	23	40
	51 yrs and above	291	32.072	3.463	19	40
Delegator	20-30 yrs	17	24.824	3.264	20	30
	31-40 yrs	78	26.359	3.535	19	35
	41-50 yrs	111	26.649	3.221	18	35
	51 yrs and above	291	26.955	3.615	16	35

To find out differences by age in teaching styles, descriptive statistics was made. Table 7 showed that the mean score of the age 31-40 year group was greater than those of the others in formal authority style. They provide the knowledge and expertise required in their class. One of

the main concerns of those teachers is to convey their knowledge to students and to ensure that they are all well prepared. The mean score from the age 51 and above year group was greater than that of the others in facilitator style who focused the students' needs and goals, the willingness to explore options and alternatives courses of action.

Teachers' Teaching Styles by Teaching Experience

To find out the differences by occupational level in teaching styles, descriptive statistics was made. The mean score of delegator teaching style for the group with 21-30 years of teaching experience was greater than that of the others. It was evidently found that teachers with 21-30 years of teaching experience were significantly likely to apply delegator as their teaching styles.

Correlation between Teachers' Teaching Styles and Job Satisfaction

Based on the result, the mean score for expert, personal model and Delegator teaching style of the Primary Assistant Teachers (P.A.T) was the greatest. It may be assumed that Primary Assistant Teachers (P.A.T) are always encouraging their students to excel and teach in detail and depth. They tend to act as a prototype to students on how to think and behave. They tend to direct and guide the students to observe and imitate the method shown after that. Junior Assistant Teachers (J.A.T) were the best in formal authority teaching style and facilitator teaching style. Therefore, they possess status among students because of knowledge and role as a faculty member.

Table 8. Inter-correlations Teaching Styles and Job Satisfaction

Factors	JC	SB	MJ	SA	IR	E	FA	PM	F	D
JC	-	.576**	.384**	.681**	.357**	.219**	.290**	.252**	.287**	.234**
SP		-	.584**	.507**	.419**	.408**	.465**	.515**	.462**	.365**
MJ			-	.394**	.489**	.459**	.479**	.549**	.548**	.440**
SA				-	.349**	.243**	.284**	.222**	.266**	.243**
IR					-	.236**	.257**	.282**	.277**	.223**
E						-	.627**	.701**	.688**	.658**
FA							-	.730**	.688**	.658**

Factors	JC	SB	MJ	SA	IR	E	FA	PM	F	D
PM								-	.800**	.676**
F									-	.745**
D										-

**Correlation is significant at the 0.01 level

To test the predictive contributions of the variables of job satisfaction to aspects of teaching styles, the simultaneous multiple regression analysis was conducted.

Regression Analysis for the Prediction of Teaching Styles

Table 9. Predicting Power of Job Satisfaction on Teaching Styles

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
	B	Std. Error	Beta		
1.(Constant)	33.813	2.722		12.421	.000
SB	0.241	0.039	.268	6.109	.000
MJ	0.315	0.033	.414	9.445	.000

Note: SB = Social Benefits, MJ = Meaningfulness of the Job

The results revealed that social benefits and meaningfulness of the job satisfaction were significantly influence on teaching styles. Meaningfulness of the job was to be the strongest predictor of teaching styles. Then, the model equation can be derived.

$$TS = 33.813 + .241SB + .315MJ$$

Note: TS = Teaching Styles, SB = Social Benefits,

MJ = Meaningfulness of the Job

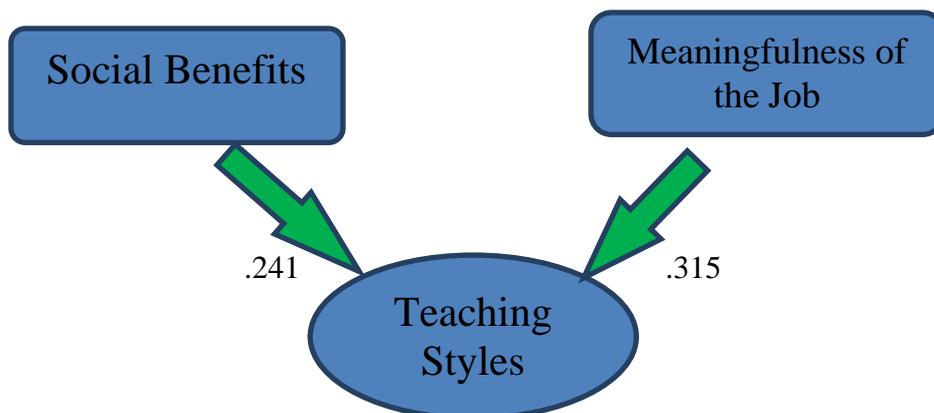


Figure 1. Model for Predicting the Effect of Job Satisfaction on Teaching Styles

Conclusion

In the analysis of teachers' job satisfaction by age, it can be interpreted that the mean score from the age of 31-40 group was the highest on the job satisfaction over all ages but there was no statistically significant difference in the teachers' job satisfaction by age. In the analysis of teachers' job satisfaction by teaching experience, job satisfaction of teachers from the teaching experience of 31 and above year group was the highest job satisfaction. Primary Assistant Teachers (P.A.T) were the best in satisfaction upon their job.

According to their age, it was found that the age of 31-40 group has higher than in expert, formal authority and personal model teaching styles but the age of 51 and above group has high mean score in facilitator and delegator teaching styles. Results related with in-service teachers' teaching styles according to their teaching experience, it was found that the teaching experience the age of 11-20 group has higher mean score in expert, facilitator teaching styles but the teaching experience of 31 and above group has high mean score in formal authority, personal model teaching styles and the teaching experience of 21-30 group has high score in delegator teaching style.

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Organizational Climate and Mental Health of In-service Teachers

Ei Thandar Kyaw¹ & Hla Hla Thi²

Abstract

The main purpose of this study is to investigate the organizational climate and mental health of in-service teachers in Yangon Region. Descriptive survey method was applied and quantitative approach was executed in this study. The participants were 600 in-service teachers who were selected by random sampling method. As research instruments, School Climate Index (SCI) developed by Tschannen-Moran & Dipaola (2006) and Mental Health Inventory (MHI) developed by Jagdish & Srivastava, A.K. (1983) were adapted to use in this study. According to descriptive analysis, organizational climate and mental health of in-service teachers were satisfactory. According to ANOVA results, there were significant differences in organizational climate of in-service teachers by district, age, job experience and designation. ANOVA results also showed that mental health of in-service teachers was independent with regard to district, age and job experience although their mental health was affected by designation. Moreover, organizational climate was positively and significantly correlated to mental health of in-service teachers ($r(598) = .35, p < 0.001$). Since R^2_{adj} value was .14, it indicated that approximately 14% of the variance in organizational climate can be explained for mental health of in-service teachers.

Keywords: Organizational climate, mental health, in-service teachers

Introduction

A positive organizational climate can yield positive educational and psychological outcomes for students and school personnel; similarly, a negative climate can prevent optimal learning and development. For teachers, the organizational climate is a highly influential environment. On the other hand, mental health at the workplace is of growing concern for employers and policy makers as mental health problems are related to job turnover, absenteeism, and rising costs of security services (WHO, 2003). Teachers are thought to have more stress and to be more prone to mental

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health problems when compared to other professions. For the achievement of quality education system, positive and healthy school climate and mentally healthy teachers are essential. Creating positive school climate and providing favorable working conditions for teachers are necessary.

Purpose of the Study

The main purpose of the study is to investigate the organizational climate and mental health of in-service teachers.

Specific objectives of the study are;

1. To examine the differences in organizational climate of in-service teachers by district, age, job experience and designation;
2. To find out the differences in mental health of in-service teachers by district, age, job experience and designation;
3. To investigate the relationship between organizational climate and mental health of in-service teachers;
4. To explore the effect of organizational climate on mental health of in-service teachers;

Definition of Key Terms

Organizational Climate: Organizational climate is defined as the set of internal characteristics that distinguishes one school from another and influences the behavior of its members (Hoy & Hoy, 2009).

Mental Health: Mental health is a state of well-being in which the individual realizes his or her own abilities, copes with the normal stresses of life, works productively and fruitfully and makes a contribution to his or her community (WHO, 2001).

In-service Teacher: An in-service teacher refers to a teacher who has certification or is already teaching in a classroom (Koellner, K., & Greenblatt, D., 2018).

Review of Related Literature

Work environments have many properties that may affect both physical and psychological well-being. The organizational level factors which influence mental health of workers in the workplace include organizational changes, organizational support, recognizing and rewarding

work, organizational justice, organizational climate, psychosocial safety climate, physical environment and stigma in the workplace. Teachers face stressors in school organization. These stressors include student fighting, disruptiveness, unsupportive administrators and overly prescriptive supervisors who limit teacher autonomy. These stressors affect teachers' mental health such as psychological symptoms and mental disorders like major depression (Schonfeld et al., 2017).

The leadership behavior of the principal, the degree of social support teachers get from their colleges, positive interactions between teachers, and positive relationship between teachers and students may have influences on mental health of teachers. The positive and healthy organizational climate is supported by its community and it strives for academic excellence of the school. This kind of school climate is characterized by the fact that it lets the community know its effort to improve the school and also, the community is willing and ready to participate in school activities. The community is responsive to requests of the school and ready to support the school. The community engagement is important for positive school climate and the positive school climate influences the mental health of teachers. Therefore, community engagement may play a role in mental health of teachers.

Method

Participants

Total numbers of 600 in-service teachers were selected as the sample of this study by using random sampling technique. Participants were randomly selected from the four districts of Yangon region.

Instruments

The two instruments "School Climate Index" (SCI) developed by Tschannen-Moran, Parish & Dipaola (2006) and "Mental Health Inventory" (MHI) developed by Jagdish & Srivastava, A.K. (1983) were applied in this study. Each item on both instruments was rated on five-point Likert-scale. SCI consists of 28 items and MHI consists of 56 items.

Pilot study was done with a sample of 30 in-service teachers in order to determine the relevancy, appropriateness and clarity of the items included in the survey questionnaires. The internal consistency of SCI was 0.893 and that of MHI was 0.903.

Data Analysis and Results

Table 1. Descriptive Statistics for each Subscale and Total Organizational Climate of In-service Teachers

Variable	N	Mean	Mean%	SD	Min	Max
Collegial Leadership	600	27.99	79.98	4.36	9	35
Teacher Professionalism	600	33.23	83.08	3.45	18	40
Academic Press	600	23.70	79.01	2.94	13	30
Community Engagement	600	27.57	78.77	3.26	13	35
Organizational Climate	600	112.50	80.35	11.33	73	140

SD = Standard Deviation, Min = Minimum, Max = Maximum

According to the descriptive analysis, the mean score of organizational climate was 112.50 and standard deviation was 11.33. It can be interpreted that the organizational climate of in-service teachers in this study was satisfactory as the mean percentage of organizational climate was 80.35.

Table 2. Comparison of Organizational Climate for In-service Teachers by District

Variable	District	N	Mean	SD	<i>F</i>	<i>p</i>
Organizational Climate	East	150	113.49	10.77	5.905**	.001
	West	150	115.03	11.82		
	North	150	109.98	10.34		
	South	150	111.48	11.77		

Note:** $p < 0.01$

The results of ANOVA indicated that there were significant differences in organizational climate by district. To obtain more detailed information about which district was better, the post hoc analysis was applied.

Table 3. The Result of Tukey HSD Multiple Comparison for In-service Teachers' Organizational Climate by District

Variable	(I) District	(J) District	Mean Difference (I-J)	<i>p</i>
Organizational Climate	East	North	3.513*	.034
	West	South	3.553*	.031
		North	5.053**	.001

Note: * $p < 0.05$ level, ** $p < 0.01$ level

According to the above table, it may be interpreted that in-service teachers from East and West District would be better than those from North and South District in the organizational climate.

Table 4. Comparison of Organizational Climate for In-service Teachers by Age

Variable	Age	N	Mean	SD	<i>F</i>	<i>p</i>
Organizational Climate	21-30	42	111.86	13.86	3.723*	.011
	31-40	135	110.28	10.12		
	41-50	107	111.43	10.05		
	51-60	316	113.89	11.71		

Note: * $p < 0.05$, SD = Standard Deviation

According to the ANOVA results, there were significant differences in the organizational climate by age. To obtain more specific information about which group was better, post hoc analysis was applied.

Table 5. The Result of Tukey HSD Multiple Comparison for In-service Teachers' Organizational Climate by Age

Variable	(I) Age	(J) Age	Mean Difference (I-J)	<i>p</i>
Organizational Climate	51-60	31-40	3.608*	.010

Note: Note: * $p < 0.05$ level, ** $p < 0.01$ level, *** $p < 0.001$ level

According to the above table, it can be interpreted that 51-60 age group teachers would experience better organizational climate than 31-40 age group in-service teachers.

Table 6. Comparison of Organizational Climate for In-service Teachers by Job Experience

Variable	Age	N	Mean	SD	<i>F</i>	<i>p</i>
Organizational Climate	1-10	54	112.96	13.10	5.781**	.001
	11-20	181	109.75	9.93		
	21-30	161	113.00	10.95		
	31-40	204	114.42	11.89		

Note: ** $p < 0.01$, SD = Standard Deviation

From the ANOVA results, there were significant differences in organizational climate of in-service teachers by job experience. To obtain more specific information about which group was better, post hoc analysis was applied.

Table 7. The Result of Tukey HSD Multiple Comparison for In-service Teachers' Organizational Climate by Job Experience

Variable	(I) Job Experience	(J) Job Experience	Mean Difference (I-J)	<i>p</i>
Organizational Climate	21-30	11-20	3.254*	.038
	31-40		4.671***	.000

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

From the above table, it can be said that in-service teachers with 21-30 and 31-40 years of job experience would experience better organizational climate than those with 11-20 years of job experience.

Table 8. Comparison of Organizational Climate for In-service Teachers by Designation

Variable	Designation	N	Mean	SD	F	p
Organizational Climate	SAT	200	110.64	9.74	4.655*	.010
	JAT	200	112.82	11.84		
	PAT	200	114.03	12.07		

Note: * $p < 0.05$, SD = Standard Deviation

PAT= Primary Assistant Teacher, JAT= Junior Assistant Teacher, SAT= Senior Assistant Teacher

The ANOVA results showed that there were significant differences in the organizational climate by designation. Therefore, to obtain more specific information about which designation was better, post hoc test was conducted.

Table 9. The Result of Tukey HSD Multiple Comparison for In-service Teachers' Organizational Climate by Designation

Variable	(I) Designation	(J) Designation	Mean Difference (I-J)	p
Organizational Climate	PAT	SAT	3.390**	.008

Note: ** $p < 0.01$ level

PAT= Primary Assistant Teacher, JAT= Junior Assistant Teacher
SAT= Senior Assistant Teacher

According to the above table, it can be interpreted that primary assistant teachers would experience more favorable organizational climate than senior assistant teachers in this study.

Table 10. Descriptive Statistics for Mental Health of In-service Teachers

Variable	N	Mean	Mean %	SD	Min	Max
Positive Self-evaluation	600	40.40	80.80	4.33	25	50
Perception of Reality	600	32.12	80.29	3.89	19	40
Integration of Personality	600	45.09	75.14	6.71	24	60
Autonomy	600	22.97	76.55	3.06	11	30
Group Oriented Attitude	600	39.70	79.40	4.55	21	50
Environmental Mastery	600	36.72	73.44	3.89	22	50
Mental Health	600	216.99	80.35	20.96	143	276

Note: SD = Standard Deviation, Min = Minimum, Max = Maximum

According to the descriptive analysis, the mean score of total mental health was 216.99 and standard deviation was 20.96. It can be interpreted that mental health of in-service teachers in this study was satisfactory as the mean percentage was 80.35.

Table 11. Comparison of Mental Health for In-service Teachers by District

Variable	District	N	Mean	SD	F	p
Mental Health	East	150	217.75	20.78	.596	.618
	West	150	215.79	21.59		
	North	150	215.97	20.88		
	South	150	218.47	20.66		

Note: SD = Standard Deviation

From the ANOVA results, there was no significant difference at total mental health of in-service teachers by District. Therefore, it can be interpreted that mental health of in-service teachers would not be affected by District.

Table 12 .Comparison of Mental Health for In-service Teachers by Age

Variable	Age	N	Mean	SD	F	p
Mental Health	21-30	42	213.19	23.86	1.858	.136
	31-40	135	215.96	20.06		
	41-50	107	214.49	20.33		
	51-60	316	218.78	21.05		

Note: SD = Standard Deviation

According to the ANOVA results, there was no significant difference in mental health of in-service teachers by age. Therefore, it can be concluded that mental health of in-service teachers would not be affected by age.

Table 13. Comparison of Mental Health for In-service Teachers by Job Experience

Variable	Job Experience	N	Mean	SD	F	p
Mental Health	1-10	54	214.78	21.97	2.384	.068
	11-20	181	214.21	20.16		
	21-30	161	217.53	22.90		
	31-40	204	219.62	19.52		

Note: SD = Standard Deviation

According to the ANOVA results, in-service teachers did not differ significantly in mental health by job experience. Therefore, it can be said that mental health of in-service teachers would not be affected by job experience in this study.

Table 14. Comparison of Mental Health for In-service Teachers by Designation

Variable	Designation	N	Mean	SD	F	p
Mental Health	SAT	200	213.75	19.29	4.673*	.010
	JAT	200	220.12	20.77		
	PAT	200	217.11	22.32		

Note: * $p < 0.05$, SD = Standard Deviation

PAT= Primary Assistant Teacher, JAT= Junior Assistant Teacher

SAT= Senior Assistant Teacher

According to the ANOVA results, there were significant differences in mental health of in-service teachers by designation in this study. Therefore, post hoc analysis was conducted to find out which group was better.

Table 15. The Result of Tukey HSD Multiple Comparison for In-service Teachers' Mental Health by Designation

Variable	(I) Designation	(J) Designation	Mean Difference (I-J)	p
Mental Health	JAT	SAT	6.365**	.007

Note: ** $p < 0.01$ level

PAT= Primary Assistant Teacher, JAT= Junior Assistant Teacher

SAT= Senior Assistant Teacher

From the above table, it can be seen that junior assistant teachers had better mental health than senior assistant in this study.

Table 16. Inter-Correlation for Organizational Climate and Mental Health of In-service Teachers

Variable	PSE	PR	IP	AUTY	GOA	EM	MH
CL	.306***	.172***	.095*	.150***	.184***	.180***	.217***
TP	.285***	.204***	.164***	.203***	.268***	.243***	.278***
AP	.374***	.233***	.212***	.227***	.272***	.300***	.332***
CE	.412***	.274***	.180***	.210***	.286***	.286***	.334***
OC	.420***	.286***	.193***	.239***	.305***	.303***	.351***

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

PSE = Positive Self-evaluation, PR = Perception of Reality,
 IP = Integration of Personality, AUTY = Autonomy,
 GOA = Group Oriented Attitude, EM = Environmental Mastery
 MH = Mental Health, CL = Collegial Leadership,
 TP = Teachers Professionalism, AP = Academic Press,
 CE = Community Engagement, OC = Organizational Climate

Table 17. Multiple Regression Analysis for Determining Predicting Factors of Organizational Climate for Mental Health of In-service Teachers

Variable	B	β	t	p	R	R^2	Adj R^2	F
MH	140.646		16.885***	.000	.375	.141	.135	24.336
CL	.078	.016	.349	.727				
TP	.307	.051	.950	.343				
AP	1.256	.176	3.267**	.001				
CE	1.240	.193	3.846***	.000				

Note; ** $p < 0.01$ level, *** $p < 0.001$ level

MH= Mental Health, CL= Collegial Leadership,
 TP= Teachers Professionalism, AP= Academic Press,
 CE= Community Engagement

The results of multiple regression analysis pointed out that the two variables of organizational climate; academic press and community engagement were significantly related with mental health of in-service teachers. Therefore, academic press and community engagement were significant predictors of mental health of in-service teachers ($t = 16.885$, $p < 0.001$). Since adjusted R square value was .14, it indicated that approximately 14% of the variance in organizational climate can be explained for mental health of in-service teachers. The model equation for predicting mental health of in-service teachers on organizational climate was as follows:

$$\text{MH} = 140.646 + 1.256\text{AP} + 1.24\text{CE}$$

MH= Mental Health, AP= Academic Press, CE= Community Engagement

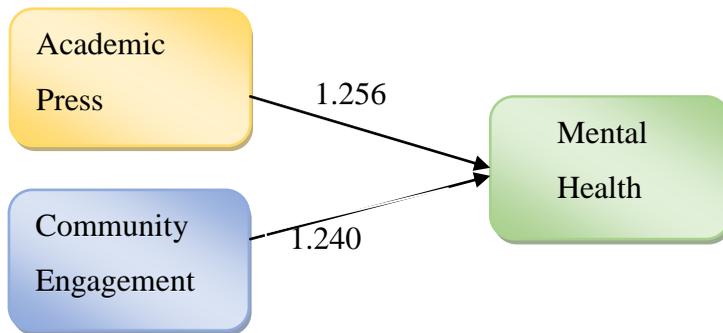


Figure. Summary Model of Mental Health

Conclusion

Organizational climate and mental health of in-service teachers were satisfactory in this study. Organizational climate of in-service teachers was affected by district, age, job experience and designation. Mental health of in-service teachers was not affected by district, age, job experience whereas it was affected by designation. There is a significant positive relationship between organizational climates and mental health of in-service teachers ($r(598) = .35$) at the 0.001 level. The predictors of mental health from factors of organizational climate were academic press and community engagement. Teachers need to be mentally healthy as teaching is the most demanding

and noble profession. Organizational climate plays an important role in determining mental health of teachers. Organizational climate should be kept healthy so that working conditions and well-being of teachers may be improved and maintained.

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Validation of the Profile of Emotional Competence in Myanmar University Students

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Abstract

The primary purpose of this study was to examine the psychometric properties of the Profile of Emotional Competence (PEC) in Myanmar, aimed at measuring intrapersonal and interpersonal emotional competence. We investigated the gender measurement invariance and the criterion validity of the PEC. Moreover, this study explored gender and grade effects of emotional competence in university students. A total of 400 university students was recruited. Results indicated that the two second-order factors model of the PEC fitted well in the total sample. Findings showed that the PEC had adequate criterion validity in Myanmar. At the intrapersonal level, gender differences were found in expression and regulation of own emotions, while grade differences were confirmed in expression of own emotions. At the interpersonal level, gender and grade differences were found in comprehension of, listening to, regulation of, and utilization of others' emotions.

Keywords: emotional competence

Introduction

Individuals markedly differ their emotional competence level while we experience emotions. Even though one may know how to appropriately manage emotions in a stressful situation, he may not be able to actually execute the warranted behavior. Likewise, some individuals may be able to practice the strategies how to handle their emotions, if explicitly asked to do so, while not actually applying these strategies in their daily life. Thus, Mikolajczak (2009) suggested a three-level model of emotional competence (emotion-related knowledge, abilities, and dispositions). Emotional competence (EC) refers to individual differences in the identification, comprehension, expression, regulation, and utilization of own emotions and others' emotions (Brasseur, Grégoire, Bourdu, & Mikolajczak, 2013).

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Emotional competence had been considered as intrapersonal and interpersonal social emotional information (Bar-On, 2006). Recently, Mikolajczak (2009) proposed a tripartite model of EC. The first level focuses on a person's knowledge about own and others' emotions. The emotion-related ability level refers to the ability to apply knowledge in a real-world situation. Finally, the third level refers to emotion-related dispositions. The focus is not on what people know or can do, but on what they are able to do or consistently do.

There have been a myriad of studies dealing with EC as an important predictor both in intrapersonal and interpersonal level. Higher EC is associated with greater happiness (Brasseur et al., 2013; Nozaki & Koyasu, 2016), better mental and physical health, more satisfaction with life (Nozaki & Koyasu, 2016), greater occupational success, and higher leadership performance. At the interpersonal level, higher EC is related with more satisfying social relationships, and is more likely to attempt to regulate the ostracized individuals' sadness (Nozaki, 2015).

Recent studies suggested cultural and gender differences of EC (e.g., Min, Islam, Wang, & Takai, 2018). Women have also been noted to express their emotions more than men (e.g., Fabes & Martin, 1991). Past studies have indicated that EC can be taught and learned (Kotsou, Nelis, Grégoire, & Mikolajczak, 2011).

Profile of Emotional Competence

The Profile of Emotional Competence (PEC; Brasseur et al., 2013) was used to examine the two facets of competence of own emotions and competence of others' emotions. Each facet includes five core competencies: identification, comprehension, expression, regulation, and utilization. The PEC has been validated in Belgium, French, Dutch, and Japanese languages. Nozaki and Koyasu's (2016) study confirmed the two second-order factors structure validating across Belgium and Japanese samples. More Recently, Min et al. (2018) also indicated that the PEC has adequate fit to be used as a measurement of EC in Myanmar, Japan, China, and Bangladesh, paying special attention to factorial invariance. This article extends to do the validation of the PEC in Myanmar population.

The PEC has also been significantly related to Big Five Personality Traits (Nozaki & Koyasu, 2016), Subjective Happiness Scale (e.g., Brasseur et al., 2013), Rosenberg Self-Esteem Scale (Nozaki & Koyasu, 2016),

Satisfaction With Life Scale (Nozaki & Koyasu, 2016), Loneliness Scale (Nozaki & Koyasu, 2016), and TEIQue-SF (e.g., Brasseur et al., 2013).

Purposes of the Study

The main purposes of this study were to investigate whether the PEC can be used as a measurement of both one's own emotions and others' emotions in Myanmar, to assess the psychometric properties of the PEC by confirming the factorial structure and examining gender measurement invariance, and to examine the criterion validity of the PEC in terms of life satisfaction, subjective happiness, depression, anxiety, and stress. In addition, this study sought to answer the following research questions.

Research Question (1): Are there any gender and grade interaction effects of intrapersonal EC and interpersonal EC?

Research Question (2): Do male and female students differ in intrapersonal EC and interpersonal EC?

Research Question (3): Are there any significant differences in intrapersonal EC and interpersonal EC by grade?

Method

Participants

Participants in this study were recruited from two universities in Myanmar: Yangon University of Education and Sagaing University of Education. A total of 400 university students aged from 16 to 24 years ($M_{\text{age}} = 19.54$, $SD_{\text{age}} = 1.60$, 50 % female, $N_{1\text{st year}} = 71$, $N_{2\text{nd year}} = 76$, $N_{3\text{rd year}} = 82$, $N_{4\text{th year}} = 84$, $N_{5\text{th year}} = 87$) participated in this study. All participants were recruited from universities by the researcher, given a thorough explanation about the study, and asked if they wished to participate in the questionnaire response voluntarily with informed consent.

Measures

Profile of Emotional Competence. The Profile of Emotional Competence (PEC) had been originally developed in Belgium by Brasseur et al. (2013), and also validated in French, Dutch, and Japanese (Nozaki & Koyasu, 2016) languages. Recent study also indicated that the PEC has adequate fit to be used as a measurement of EC in Asian countries, paying special attention to factorial invariance (Min et al., 2018). The PEC

comprises a total of 50 items on a five-point scale from 1 (*totally disagree*) to 5 (*totally agree*). Cronbach's alphas of intrapersonal EC and interpersonal EC in this study were .73 and .80, hence having satisfactory reliability.

Satisfaction with Life Scale. Life satisfaction was measured using the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). The SWLS comprises 5 items scored on a 7-point Likert scale.

Subjective Happiness Scale. Happiness was administered by Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). The SHS consists of 4 items answered on a 7-point Likert scale.

Depression Anxiety Stress Scale. Depression, anxiety and stress were assessed by the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995). The DASS includes 21 items rated on a 4-point scale. Cronbach's alpha of SWLS, SHS, and DASS were .73, .74, and .84 that indicated good reliability.

Results

Confirmatory Factor Analysis in the Total Sample

We conducted confirmatory factor analysis using Mplus 8 with the robust maximum likelihood estimator to evaluate whether the two second-order factors model of the PEC fit the data adequately for the sample. Before calculating CFA, the five items of each PEC subscales were converted into two item parcels. Thus, each subscale has two parcels of three items and two items. The PEC consists of two second-order subscales. We analyzed two second-order factors with 10 first-order latent variables and a total of 20 parcels with 50 observed indicators. According to Hu and Bentler's (1999) recommendation, we evaluated overall model fit through the assessment of several fit indices: the standardized root mean square residual (SRMR: $\leq .08$ indicates good fit), the root mean square error of approximation (RMSEA: $\leq .06$ indicates good fit), and the comparative fit index (CFI: $\geq .95$ indicates excellent fit, $\geq .90$ acceptable fit).

Fit indices for the CFA solution of the PEC were $X^2=244.459$, $df=141$, RMSEA (90%CI)=.043(.034-.052), SRMR=.040, CFI=.942. Results showed that the fit of the two second-order factors model was overall adequate.

Gender Measurement Invariance

We examined gender measurement invariance by conducting consequential multigroup CFAs according to a procedure suggested by Chen et al. (2005). This indicates to evaluate for measurement and structural aspects of factorial invariance across gender through multigroup CFA. As the first step, we assessed the *configural invariance* (Model 1), which assumes that the same number of factors and pattern of fixed and freely estimated parameters holds across groups, and can be evaluated running a multigroup CFA without any equality constraints across groups. The second level of measurement equivalence is *metric invariance* in which first-order factor loadings were constrained to be equal across groups (Model 2), and subsequently; both first- and second-order factor loadings were assumed to be equal as well (Model 3). The third level of measurement equivalence is *scalar invariance* in which first- and second-order factor loadings and item intercepts of parcels were constrained to be equal across groups (Model 4).

To assess measurement invariance between different models, we investigated the changes in CFI(Δ CFI) index and the changes in RMSEA(Δ RMSEA). According to Chen's recommendations (2007), Δ CFI \geq -.01 supplemented by Δ RMSEA \geq .015 would indicate a lack of invariance. As shown in Table 1, the configural model (Model 1) had adequate fit indices, suggesting the same two second-order factors best represented the data in both male and female. Constraining first-order factor loadings to be equal across groups (Model 2) (Δ CFI $<$ -.01, Δ RMSEA $<$.015) demonstrated no meaningful decrease in model fit. Moreover, constraining both first- and second-order factor loadings to be equal across groups (Model 3) did not meaningfully decrease model fit (Δ CFI $<$ -.01, Δ RMSEA $<$.015), providing support for metric invariance. However, invariance of intercepts of measured variables (Model 4) showed no meaningful decrease in model fit since Δ CFI and Δ RMSEA was below the cutoff of Chen's (2007) benchmark. This revealed that full scalar invariance was satisfied across gender.

Table 1. Test of PEC Gender Measurement Invariance

	Model fit				Model comparisons		
	X^2	df	RMSEA (90% CI)	CFI	Models	Δ CFI	Δ RMSEA
Configural invariance (M1)	461.095	300	.052 (.042-.061)	.92			
Invariance of first-order factor loadings (M2)	474.746	310	.052 (.042-.061)	.91	M2-M1	-.010	.000
Invariance of first- and second-order factor loadings (M3)	482.727	318	.051 (.041-.060)	.91	M3-M2	.000	-.001
Scalar invariance (M4)	529.431	336	.054 (.045-.062)	.90	M4-M3	-.010	.003

Note. X^2 =chi-square; df =degrees of freedom; RMSEA=root mean square error of approximation; CI=confidence interval; CFI=comparative fit index; Δ =change in the parameter.

Criterion Validity

Criterion validity was investigated by assessing Pearson correlations between EC scores (global EC, intrapersonal EC, and interpersonal EC) and scores with life satisfaction, happiness, depression, anxiety and stress as shown in Table 2.

Table 2. Correlations between EC and Validity Measures

Criterion Validity	Global EC	Intrapersonal EC	Interpersonal EC
Satisfaction with Life Scale	.28**	.29**	.22**
Subjective Happiness Scale	.23**	.22**	.20**
Depression Anxiety Stress Scale			
Depression	-.40**	-.43**	-.30**
Anxiety	-.24**	-.30**	-.15**
Stress	-.31**	-.33**	-.24**

Note. ** $p < .01$

Results revealed that global EC, intrapersonal EC, and interpersonal EC are highly correlated with life satisfaction. The association is stronger with global EC and intrapersonal EC than with interpersonal EC. Moreover, global EC, intrapersonal EC, and interpersonal EC are also highly associated with subjective happiness. Similarly, the correlation is stronger with global EC and intrapersonal EC than with interpersonal EC. As expected, global EC, intrapersonal EC, and interpersonal EC are negatively associated with depression, anxiety and stress. Correlation with depression, anxiety and stress are stronger with global EC and intrapersonal EC than with interpersonal EC.

Research Question (1)

We conducted 2 (gender) by 5 (year of study: first year, second year, third year, fourth year, fifth year) between-groups multivariate analysis of variance (MANOVA), which revealed a significant gender effect, Wilks' Lambda=.91, $F(10, 381)=3.63$, $p<.001$, partial $\eta^2=.09$; a significant year of study effect, Wilks' Lambda=.81, $F(40, 1446.56)=2.08$, $p<.001$, partial $\eta^2=.05$; and a non-significant interaction effect on the combined variables, Wilks' Lambda=.90, $F(40, 1446.56)=.97$, $p=.52$, partial $\eta^2=.03$.

Table 3. Mean Comparisons of Intrapersonal and Interpersonal EC

	Mean (SD)		F	partial η^2
	Male	Female		
Intrapersonal EC				
Identification	3.68 (.05)	3.65 (.05)	.23	.001
Comprehension	3.63 (.05)	3.74 (.05)	2.17	.006
Expression	3.06 (.05)	3.19 (.05)	3.90	.010*
Regulation	3.44 (.06)	3.26 (.06)	5.40	.014*
Utilization	3.50 (.05)	3.43 (.05)	1.19	.003
Interpersonal EC				
Identification	3.50 (.05)	3.53 (.05)	.16	.001
Comprehension	3.30 (.05)	3.15 (.05)	5.07	.013*
Listening	3.63 (.05)	3.79 (.05)	4.85	.012*

	Mean (SD)		F	partial η^2
	Male	Female		
Regulation	2.93 (.05)	2.79 (.05)	4.09	.010*
Utilization	2.78 (.05)	2.55 (.05)	9.87	.025**

Note. * $p < .05$, ** $p < .01$

Research Question (2)

Follow up univariate ANOVAs indicated that there were significant differences for gender effect on expression of own emotions, regulation of own emotions, comprehension of others' emotions, listening to others' emotions, regulation of others' emotions, and utilization of others' emotions (see Table 3). Regarding intrapersonal EC, female students had higher expression of own emotions than male students, while male had higher regulation of own emotions than female. With respect to interpersonal EC, female students had higher scores in listening to others' emotions than male students, whereas males had high scores in comprehension, regulation, and utilization of others' emotions than females.

Research Question (3)

There were significantly differences for grade on expression of own emotions: $F(4, 390)=3.14, p=.012, \text{partial } \eta^2=.03$; comprehension of others' emotions: $F(4, 390)=10.68, p<.001, \text{partial } \eta^2=.06$; listening to others' emotions: $F(4, 390)=9.29, p=.001, \text{partial } \eta^2=.04$; regulation of others' emotions: $F(4, 390)=9.32, p=.001, \text{partial } \eta^2=.05$; and utilization of others' emotions: $F(4, 390)=8.11, p=.005, \text{partial } \eta^2=.04$. Post-hoc comparison using Tukey HSD test was conducted. Regarding intrapersonal EC, first year students had the lowest expression of own emotions. Similarly, they had the lowest comprehension of, listening to, regulation of, and utilization of others' emotions (see Figure 1).

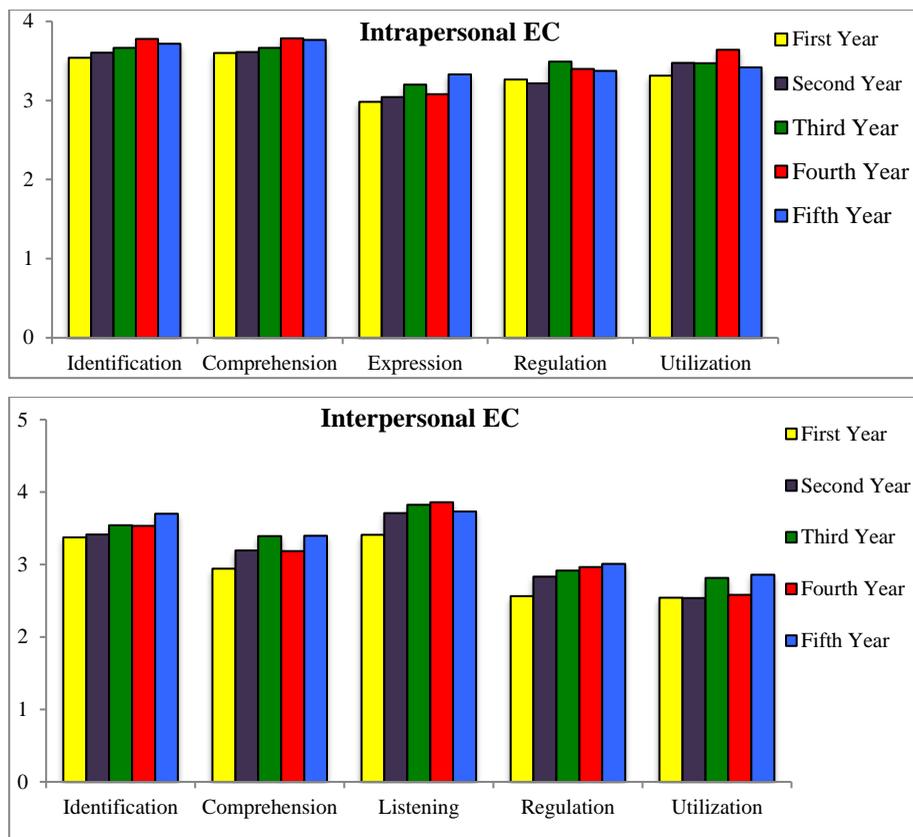


Figure 1. Means of Intrapersonal and Interpersonal EC by Grade

Discussion

First, this study probed as to whether the PEC is viable in examining EC of university students in Myanmar. Findings indicated that the two second-order factors structure of the PEC fit the data adequately in Myanmar. Moreover, internal consistency values were good throughout. Results were consistent with the exploratory factor analysis conducted by Brasseur et al. (2013), along with those indicated by a two-nation (Japan and Belgium) study by Nozaki and Koyasu (2016). Results revealed that criterion validity of the PEC in Myanmar was confirmed. As predicted, EC was positively associated with life satisfaction and subjective happiness, and were negatively related with depression, anxiety, and stress that support the criterion validity of the PEC. Moreover, the results are consistent with past

studies that high EC scores were associated with higher life satisfaction (Brasseur et al., 2013) and greater happiness (Nozaki & Koyasu, 2016).

The second purpose of this study was to test gender measurement invariance to evaluate whether the PEC can be applied equally well for measuring emotional competence in male and female students. Results provided straightforward support to the configural invariance and the invariance of the first- and second-order factor loadings (metric invariance) for all item parcels. Therefore, the two second-order factors model of the PEC applies equally well to male students and female students.

Next, this study indicated that gender differences were found only in expression and regulation of own emotions, and identification of, listening to, regulation of, and utilization of others' emotions. Specifically, female students had higher scores in expression of own emotions and listening to others' emotions than males that are consistent with other EC studies (e.g., Brasseur et al., 2013). This indicated that Myanmar society seems to have the traditional rule that "boys don't cry". These results are in line with existing findings that women are known to be more sensitive to others and possess better decoding skills, so they are better able to interpret others' emotions (Briton & Hall, 1995). In the traditional gender role expectation of being nurturing, females were able to listening more to others' emotions.

Male students had higher emotional regulation of own emotions than females, which is in consistency with previous studies (Brasseur et al., 2013). Moreover, they had higher comprehension, regulation, and better use of others' emotions than female students. The findings provide clear evidence of previous studies that gender affects the extent and the way in which emotions are regulated, and men are able to use their emotions to influence others.

Moreover, grade differences were found in expression of own emotions, comprehension of, listening to, regulation of, and utilization of others' emotions. At the intrapersonal level, first year students had the lowest expression of own emotions. This indicates that first year students are not familiar with university students' life, as well as need to adjust; hence they do not express their own emotions. Myanmar also was high on power distance, suggesting that people accept hierarchical order without questioning it (e.g., senior and junior relationship). Perhaps because of these cultural features, first year students may have exhibited low expression of own emotions. At the interpersonal level, findings revealed that first year

students had the lowest interpersonal EC. This may reflect the nature of university students' life as well as the training effect of university that senior students fare better EC, relative to dealing with them.

Limitations

This study has some limitations. First, since this study recruited participants from two universities, the result may not represent all university students in Myanmar. Participants were asked to respond to measurements not specifying a social context in which they would refer to themselves. The assumption of this study was that EC is a trait of a person, not a situation constrained construct, and hence, people are not affected by context.

Implications and Future Directions

This study has three major implications. First, we provided some evidence that the PEC measure has adequate reliability to be used in the assessment of EC of Myanmar university students. Moreover, the two second-order factors model of the PEC applies equally well to males and females. This study contributes to confirm the criterion validity of the PEC in Myanmar. Second, this study confirmed the gender differences in expression and regulation of own emotions, and comprehension of, listening to, regulation of, and utilization of others' emotions. Gender differences of EC are likely to be linked to the differences in women and men's social roles, to their relative status and power, and to their cultures. Moreover, the current findings shed some light on grade differences in EC, which may be the basis for explaining that EC can be nurtured.

This study suggests some future directives for EC research. While this study focused on the validation of the PEC, the main effects of gender and grade for EC proved to be significant, indicating that EC varies widely with gender and grade, and closer examination of gender and grade differences should contribute greatly to explaining the fact that EC can be nurtured.

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A Study on Self-Compassion of Pre-Service Teachers in Sagaing University of Education

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Abstract

The main purpose of this study is to investigate self-compassion of pre-service teachers. A total of 200 pre-service teachers in Sagaing University of Education participated in this study. Descriptive research design and quantitative survey method were used. The instrument used in this study is Self-Compassion Scale (SCS) developed by Neff in 2003. According to the result of *t* test, there was significant difference in self-compassion by gender at 0.05 level. Moreover, significant difference was found in self-compassion by education level at 0.01 level. Furthermore, there was no significant difference in self-compassion by numbers of siblings. Concerning dimensions of self-compassion, female pre-service teachers were higher than male pre-service teachers in the negative dimensions (self-judgment, isolation and over-identification). According to ANOVA results, there was no significant difference in self-compassion by parents' education level.

Keywords: self-compassion, self-kindness, common humanity, mindfulness

Introduction

University students experience higher levels of psychological distress such as depression, anxiety and stress than the general population, which consequently identifies this population as high-risk for mental health problems (Stallman, 2010, cited in Keel & Pidgeon, 2017). Stressors which increase psychological distress among university students include demands to academic examination performance, financial strain, and anxiety regarding future employment (Bayram & Bilgel, 2008; Al-Hroub & Ycaza, 2017, cited in Keel & Pidgeon, 2017).

Adolescents believe that their experiences are unique and that others can't possibly understand what they're going through. If adolescents don't succeed in evaluating themselves positively, the inadvertent result may be an increase in negative evaluations of the self (Neff, 2003). Unfortunately,

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negative self-judgments are strongly implicated in the high incidence of depression found among adolescents, and in severe cases have also been linked to attempted suicide (Harter & Marold, 1994, cited in Neff, 2003).

The construct of self-compassion has emerged in Western psychological and health literatures over the last fifteen years. The roots of this construct lie in Buddhist psychology and philosophy. Self-compassion has been defined as “being touched by and open to one’s own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one’s suffering and to heal oneself with kindness”(Neff, 2003, cited in Garcia-Campayo et al., 2014).

Self-compassion is quite distinct from self-pity (Goldstein & Kornfield, 1987, cited in Neff, 2003). While experiencing self-pity, individuals typically become carried away with, wrapped up in, completely absorbed by their own feelings. In contrast, self-compassion requires that individuals do not over-identify with their emotions, so that there is “mental space” in which to extend oneself kindness and recognize the broader human context of one’s experience (Goldstein & Michaels, 1985; Scheff, 1981, cited in Neff, 2003).

Nowadays, self-compassion is a useful alternative to the more ubiquitous global construct. Self-compassion is an important source of optimism extolled by some theorists. Recognizing the essential of self-compassion and the lack of studies in universities, this exploratory study is an attempt to aid those who suffer from negative self-attitudes. Moreover, self-compassion is an essential component in helping university students to reduce their psychological distress. So, it is an urgent need to study self-compassion of pre-service teachers who will become leaders of society.

Purposes of the Study

The main purpose of this study is to investigate self-compassion of pre-service teachers. The specific objectives are;

- To examine self-compassion of pre-service teachers by gender;
- To examine self-compassion of pre-service teachers by education level;
- To investigate self-compassion of pre-service teachers by number of siblings;

- To study self-compassion of pre-service teachers by father's education level;
- To study self-compassion of pre-service teachers by mother's education level.

Scope and Procedure

In this study, self-compassion of pre-service teachers in Sagaing University of Education was investigated. The stratified random sampling technique was used for selecting participants in Sagaing University of Education. The total number of the participants was 200 (100 males and 100 females) from third year and fifth year students in Sagaing University of Education. Self-compassion Scale developed by Neff (2003) was used to collect the data in this study.

Definitions of the Key Terms

Self-compassion : It has been defined as “being touched by and open to one’s own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one’s suffering and to heal oneself with kindness (Neff, 2003, cited in Garcia-Campayo, 2014).

Review of Related Literature

Origin of Self-compassion

The definition of self-compassion is derived from Buddhist psychology (Neff, 2011). The definition of “self-compassion” is related to the more general definition of “compassion.” Generally, compassion involves witnessing the experience of suffering, and a wish to alleviate that suffering (Germer & Siegel, 2012, cited in Bakker, 2017). Compassion involves being touched by the suffering of others, opening one’s awareness to others’ pain and not avoiding or disconnecting from it, so that feelings of kindness toward others and the desire to alleviate their suffering emerge (Wispe, 1991, cited in Neff, 2003).

Neff (2011) has defined self-compassion as ‘treating oneself with kindness, recognizing one’s shared humanity, and being mindful when

considering negative aspects of oneself. Self-compassion (Neff, 2003) involves being touched by and open to one's own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one's suffering and to heal oneself with kindness. It is associated with many indices of psychological well-being (Neff, 2009, cited in Terry & Leary, 2011). Moreover, self-compassionate participants took more personal responsibility for negative events and showed greater internal attribution when confronted with a mediocre evaluation. In this situation, self-compassionate people also tended to ruminate less about their results, or to be emotionally affected by them. Apparently, self-compassion has a protective function, acting as mediator when it comes to negative experiences.

The Three Faces of Self-compassion

Neff (2003) has operationalized this definition into three main components: 'self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification.

Self-kindness involves showing kindness and having an understanding attitude about one's negatives, while its conceptual opposite self-judgment involves being critical and coldly judgmental. Common humanity necessitates seeing the experiences one has a component of the overall human experience, while its conceptual opposite, isolation, involves feeling like one is isolated due to one's experiences. Finally, mindfulness involves demonstrating a balanced awareness of one's negative thoughts and feelings, while over-identification involves being consumed by them (Neff, 2003, cited in Feher, 2016).

Method and Procedure

Firstly, the necessary literature was searched in many sources such as library, journals, magazines, theses, and internet. After these literatures were reviewed, the Self-compassion Scale developed by Neff (2003) was adapted and modified. Then, pilot study was conducted with a sample of 75 third year BEd students in Sagaing University of Education. The field study was carried out with 100 third year students and 100 fifth year students in the first week of July. Afterwards, the data were collected, scored, and

analyzed by using SPSS (20.00 Version). Finally, interpretations and conclusions were drawn according to the results of SPSS.

Participants

Participants in this study were selected from Sagaing University of Education by using stratified random sampling technique. The total number of participants was 200 pre-service teachers during the academic year of 2018-2019. A total of 100 students from third year and 100 students from fifth year participated in this study.

Instrumentation

In this study, Self-compassion Scale (SCS) developed by Neff (2003) was adapted and used to examine self-compassion of pre-service teachers. Self-compassion originally included 26 items and three subcomponents: self-kindness (five items), common humanity (four items) and mindfulness (four items). Furthermore, the respective counterparts of these subcomponents are measured, namely self-judgment (five items), isolation (four items) and over-identification (four items). Among them, 13 items were negatively worded items. The instrument is a 4-point Likert scale ranging from strongly disagree =1 to strongly agree =4 for positive items and vice versa for negative items.

Firstly, Self-compassion Scale (SCS) was translated from English version to Myanmar version. After preparing the measuring instrument, expert review was conducted for face validity and content validity by five experts from Department of Educational Psychology in Sagaing University of Education. For field study, as internal consistency, Cronbach's alpha of the whole scale was 0.71. Thus, it is acceptable to use this questionnaire in order to assess self-compassion of pre-service teachers.

Findings

By gender difference, descriptive statistics revealed that the mean scores of males were slightly higher than female. To know more clearly, the independent sample *t*-test was conducted. According to the result, there was significant difference in self-compassion of pre-service teachers by gender at 0.01 level ($t = 2.932$, $p = 0.004$). It can be interpreted that male pre-service teachers had higher self-compassion than female pre-service teachers. It may be due to the fact that females emphasize on aspects of

self-criticism and they are competitive in many classworks. So, they tend to be isolated and work separately.

Mean and Standard deviation for self-compassion dimensions of pre-service teachers by gender were reported in Table 1. Descriptive statistics revealed that the mean scores were slightly different between males and females.

Table 1. Descriptive Statistics for Dimensions of Self-compassion of Pre-service Teachers by Gender

Dimensions of Self-compassion	Gender	N	Mean %	SD
Self-kindness	Male	100	73.35	8.17
	Female	100	72.15	8.86
Self-judgment	Male	100	64.85	9.17
	Female	100	66.20	11.53
Common humanity	Male	100	71.96	10.89
	Female	100	70.74	9.98
Isolation	Male	100	61.15	12.09
	Female	100	67.22	12.58
Mindfulness	Male	100	75.69	8.38
	Female	100	74.88	10.17
Over-identification	Male	100	63.37	12.68
	Female	100	67.93	10.57

According to the mean scores, concerning dimensions of self-compassion, it was found that female pre-service teachers were also higher than male pre-service teachers in the negative dimensions. Moreover, males were better in positive dimensions than females. To get more detailed information, the independent sample *t* test was computed. Among six dimensions, there were significant differences in only two dimensions of isolation and over-identification of pre-service teachers by gender at the

0.01 level. So, it can be interpreted that female pre-service teachers were higher in isolation and over-identification than male pre-service teachers (see table 2). It can be said that innately, females often feel what they had experienced and they tend to obsess and fixate on everything that was going wrong. So, they became isolated when they feel that what they had experienced was much worse than what others had experienced.

Table 2. The Result of Independent Sample *t*-test for Dimensions of Self-compassion for Pre-service Teachers by Gender

Dimensions of Self-compassion	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Isolation	-3.147**	198	.001	-6.07
Over-identification	-2.763**	198	.006	-4.56

Note: ** $p < 0.01$

By education level, self-compassion of the fifth year students was higher than those of third year students with respect to mean scores.

To get more detailed information, the independent sample *t* test was computed. According to the result, there was significant difference in self-compassion of pre-service teachers by education level at 0.05 level. It can be interpreted that fifth year students were higher in self-compassion than third year students in Sagaing University of Education ($t = -1.968$, $p = 0.05$). The older group presents more concurrent challenges and so previous experiences can prove useful both for the approach of new issues as well as for becoming self-compassionate in dealing with failures, sufferings and faults.

Mean and Standard deviation for self-compassion dimensions of pre-service teachers by education level were reported in table 3. Descriptive statistics revealed that the mean scores were slightly different between third year students and fifth year students.

Table 3. Descriptive Statistics for Dimensions of Self-compassion for Pre-service Teachers by Education Level

Dimensions of Self-compassion	Education Level	N	Mean %	SD
Self-kindness	Third Year	100	72.55	9.57
	Fifth Year	100	72.95	7.35
Self-judgment	Third Year	100	67.10	9.05
	Fifth Year	100	63.95	11.44
Common humanity	Third Year	100	70.73	10.61
	Fifth Year	100	71.97	10.28
Isolation	Third Year	100	64.36	12.30
	Fifth Year	100	64.01	13.11
Mindfulness	Third Year	100	74.19	9.35
	Fifth Year	100	76.38	9.17
Over-identification	Third Year	100	66.78	11.18
	Fifth Year	100	64.52	12.46

To obtain more detailed information, the independent sample *t* test was computed. Among six dimensions, there was significant difference in only self-judgment of pre-service teachers by education level at the 0.05 level ($t = 2.172$, $p = .031$).

Mean and Standard deviation for self-compassion of pre-service teachers by number of siblings were reported in table 4. According to the mean scores, self-compassion of students who have 4 siblings and above was higher than that of students who have less than 4 siblings.

Table 4. Descriptive Statistics for Self-compassion of Pre-service Teachers by Number of Siblings

Variable	Sibling Group	N	Mean	SD
Self-compassion	Less than 4 siblings	123	68.81	7.52
	4 siblings and above	77	69.45	5.26

To get more detail information, the independent sample *t* test was computed. According to the result, there was no significant difference in self-compassion of pre-service teachers with respect to number of siblings ($t = -0.709$, $p = 0.479$). Therefore, number of siblings does not influence on self-compassion.

Afterwards, fathers' education levels were grouped into four levels; primary, middle, high and graduate. The following table showed that the mean values of pre-service teachers' self-compassion among fathers' education levels were slightly different (see table 5).

Table 5. Descriptive Statistics for Self-comparison for Pre-service Teachers by Father's Education Level

Variable	Father's Education Level	N	Mean	SD
Self-compassion	Primary	76	69.30	6.02
	Middle	58	68.41	6.58
	High	38	68.92	8.91
	Graduate	28	69.93	5.59

To obtain more detailed information on father's education level, one way analysis of variance (ANOVA) was conducted. ANOVA result showed that there was no significant difference in pre-service teachers' self-compassion among father's education levels ($F = 0.368$, $p = .776$).

Descriptive statistics revealed differences in mean and standard deviation of self-compassion by mother's education level in table 6. As a result, the mean scores for self-compassion of pre-service teachers were slightly different.

Table 6. Descriptive Statistics for Self-compassion of Pre-service Teachers by Mother's Education Level

Variable	Mother's Education Level	N	Mean	SD
Self-compassion	Primary	97	69.36	6.15
	Middle	53	68.60	8.09

Variable	Mother's Education Level	N	Mean	SD
	High	22	70.27	6.19
	Graduate	28	67.93	6.35

Next, to obtain more detail information for self-compassion by mother's education level, one way analysis of variance (ANOVA) was conducted. The result indicated that there was no significant difference in self-compassion by mother's education level ($F= 0.664$, $p = 0.588$). Therefore, it can be said that mother's education level did not effect on pre-service teachers' self-compassion.

Conclusion

Self-compassionate people are less depressed and anxious, and less afraid of failure, but they are more intrinsically motivated to learn and grow, are happier, more curious and wise, and feel more connected to others (Neff, 2009). When students face more concurrent challenges in life, they may look to parents, peers, and teachers as a source of support (Vedder et al., 2005, cited in Neely et al., 2009). Neff (2003) have suggested that a culture shift which recognized the value of self-compassion could also benefit the society, as it would encourage a kinder, less self-absorbed, less isolated and more emotionally functional populace.

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A Study of Motivational Strategies and School Satisfaction of Grade 10 Students

May Wah Linn¹ & Lwin Moe Hlaing²

Abstract

The purpose of this study was to investigate the differences in motivational strategies and school satisfaction of Grade 10 students. Descriptive survey method and quantitative research design were used in this study. A total of 660 Grade 10 students were randomly selected from six schools in Yangon Region and Bago Region as participants of this study. Based on the result of descriptive analysis of motivational strategies, it can be said that Grade 10 students received motivational strategies properly. According to the result of independent sample t-test, it was revealed that there were significant differences in motivational strategies of Grade 10 students by gender and locality. Then, descriptive analysis of school satisfaction pointed out that Grade 10 students' school satisfaction was moderate level. Moreover, significant differences were found in students' school satisfaction by gender and locality. Pearson correlation revealed that students' motivational strategies was positively correlated with students' school satisfaction ($r=0.676$, $p<0.001$). It can be concluded that the better the motivational strategies, the higher the school satisfaction. Multiple regression results revealed that forty five percentage of the variance in school satisfaction was explained by three motivational strategies such as make learning tasks stimulation, promote group cohesiveness and group norms and promote learner autonomy.

Keywords: motivational strategies, school satisfaction

Introduction

Importance of the Study

Students' satisfaction is a short-term attitude which results from an evaluation of students' educational experience, services and facilities. In considering students' satisfaction in school, one of the most important aspects that should not leave behind is teachers' aspects. Teachers generally use various kinds of teaching methods to make their learning effective. One of the most difficult aspects of becoming a good teacher is knowing how to motivate the students. Students without motivation in classroom will not learn effectively. They won't retain information, and not participate and some of them may even become disruptive.

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To motivate learners, teachers should use a variety of motivational strategies (cited in Sugita, 2010). This present study will support the information regarding students' perceived motivational strategies from teachers in order to fulfil the needs of the students and to obtain a better comprehension of which motivational strategies are more effective for students' satisfaction.

Purpose of the Study

The main purpose of this study was to study the motivational strategies and school satisfaction of high school students. The specific objectives of this study are:

- to investigate the motivational strategies and school satisfaction of high school students by gender and locality
- to investigate the relationship between motivational strategies and school satisfaction of high school students

Definition of Key Terms

Motivational Strategies: Motivational Strategies are tactics, techniques, or approaches to encourage learners or students to participate in the teaching and learning process.

School Satisfaction: School satisfaction refers to a student's subjective cognitive appraisal of the quality of his or her school life (Baker & Maupin, 2009).

Motivation in Students' Learning

Motivation is defined as the process that initiates, guides and maintains goal-oriented behaviors. Motivation is what causes us to act, to try to read a book to gain knowledge and it is like getting a glass of water to reduce thirst. The motivation function is as supporter or stimulus for students in their learning, so the goal of learning can be reached easily. High or low motivation which is had by students influences the process and the success of learning process. Different types of motivation are intrinsic motivation and extrinsic motivation (as cited in Vansteenkiste, Lens & Deci, 2006).

Creating the Basic Motivational Conditions

Motivational strategies cannot be employed successfully in a 'motivational vacuum' certain preconditions must be in place before any further attempts to generate motivation to be effective. The following three motivational conditions in particular are indispensable: (1) Appropriate teacher behaviors and a good relationship with the students (2) A pleasant and supportive classroom atmosphere (3) A cohesive learner group with appropriate group norms.

School Satisfaction

One of the major aspects of children's quality of life is school satisfaction. It is crucial for every child and children also have a right to feel good about themselves and the institutions in which they function. Schools should care and support the settings that children value and enjoy. Furthermore, the level of school satisfaction affects psychological well-being, as well as school engagement, absentee rate, dropout and behavioral problems of children (Ainley, 1991).

Methodology

Subjects of the Study

By using random sampling method, the sample of this study consisted of 660 Grade 10 students from the six selected schools in Yangon Region and Bago Region.

Table 1. Characteristic of the Chosen Number of Participants

Region	Name of School	Grade 10		Total
		Male	Female	
Yangon	Practising High School Yangon, University of Education (TTC)	55	55	110
	No.17 (B.E.M.S) (Branch) Hlaingthayar	55	55	110
	No.1 (B.E.H.S) Hmawbi	55	55	110
Bago	No.3 (B.E.H.S) Bago	55	55	110
	No.1 (B.E.H.S) Nyaunglaypin	55	55	110
	No.1 (B.E.H.S) Shwekyin	55	55	110
	Total	330	330	660

Items	Factor								
	1	2	3	4	5	6	7	8	9
Motivational Strategies 39	.49								
Motivational Strategies 29	.44								
Motivational Strategies 50	.35								
Motivational Strategies 8		.59							
Motivational Strategies 7		.56							
Motivational Strategies 22		.37							
Motivational Strategies 49			.58						
Motivational Strategies 48			.43						
Motivational Strategies 42			.33						
Motivational Strategies 33				.52					
Motivational Strategies 5				.52					
Motivational Strategies 12				.51					
Motivational Strategies 54					.73				
Motivational Strategies 11						.45			
Motivational Strategies 6						.35			
Motivational Strategies 24							.46		
Motivational Strategies 15							.36		
Motivational Strategies 19								.49	
Motivational Strategies 4									.52

According to the Table (3), motivational strategies items were sorted into nine overlapping groups of items, each has a loading of .30 or higher without considering the sign. The items were from the highest factor weight of loading for one factor to the lowest loading on that factor.

Based on the results shown in Table (4), the mean percentage scores of proper teacher behaviour and promote learner self-confidence were the highest among motivational strategies subscales. Then, the mean

percentage score of promote group cohesiveness and group norms was the lowest.

Table 4. Descriptive Statistics for Motivational Strategies of Grade 10 Students

Variables	Mean %	SD	Mini.	Maxi.
Proper teacher behaviour	83.32	9.73	25	100
Recognize student's effort	72.77	12.8	20	100
Promote learner self-confidence	83.33	12.5	33	100
Create a pleasant classroom	75.24	13.2	20	100
Present task properly	81.51	11.7	35	100
Increase teachers' goal-orientedness	71.76	13.9	24	100
Make learning tasks stimulating	71.68	12.4	20	100
Promote group cohesiveness and group norms	69.29	13.7	20	100
Promote learner autonomy	76.83	15.0	20	100

Table 5. The Results of Independent Sample *t*-test for Motivational Strategies of Grade 10 Students by Gender

Variables	Gender	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
Proper teacher behaviour	Male	32.96	-2.409*	658	.016	-.727
	Female	33.69				
Recognize student's effort	Male	14.48	-.684	658	.494	-.136
	Female	14.62				
Promote learner self-confidence	Male	12.33	-2.282*	658	.023	-.333
	Female	12.67				
Create a pleasant classroom	Male	18.66	-1.152	658	.250	-.297
	Female	18.96				

Variables	Gender	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
Present task properly	Male	16.09	-2.302*	658	.022	-.421
	Female	16.51				
Increase teachers' goal orientedness	Male	31.96	-1.130	658	.259	-.606
	Female	32.57				
Make learning tasks stimulating	Male	28.80	.678	658	.498	.264
	Female	28.54				
Promote group cohesiveness and group norms	Male	30.83	-1.442	658	.150	-.694
	Female	31.53				
Promote learner autonomy	Male	15.15	-1.886	658	.060	-.442
	Female	15.59				

Note: * Mean difference is significant at the 0.05 level

The results revealed that the mean scores of females were higher than that of males in eight subscales of motivational strategies. In contrast, the mean score of males was higher than that of females in make learning tasks stimulating subscale. According to the results of Independent Sample *t*-test, there were significant differences between males and females in the subscales of proper teacher behaviour, promote learner self-confidence and present task properly of motivational strategies at the 0.05 level.

Table 6. Mean Comparison for Motivational Strategies by Locality

Variables	Location	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
Proper teacher behaviour	Yangon	32.96	-2.45*	658	.015	-.739
	Bago	33.70				
Recognize student's effort	Yangon	14.41	-1.445	658	.149	-.288
	Bago	14.70				
Promote learner self-confidence	Yangon	12.21	-4.0***	658	.000	-.582
	Bago	12.79				

Variables	Location	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
Create a pleasant classroom	Yangon	18.61	-1.55	658	.121	-.400
	Bago	19.01				
Present task properly	Yangon	16.12	-2.00	658	.046	-.367
	Bago	16.48				
Increase teachers' goal-orientedness	Yangon	31.30	-4.1***	658	.000	-1.93
	Bago	33.23				
Make learning tasks stimulating	Yangon	28.06	-3.14**	658	.002	-1.21
	Bago	29.28				
Promote group cohesiveness and group norms	Yangon	30.53	-2.70**	658	.007	-1.29
	Bago	31.83				
Promote learner autonomy	Yangon	15.03	-2.87**	658	.004	-.673
	Bago	15.70				

Note: *** Mean difference is significant at the 0.001 level

According to the Table (6), the results revealed that the mean scores of Bago students were higher than that of Yangon students in all nine subscales. The result of independent sample *t*-test revealed that there were significant differences between Yangon and Bago students in the subscales of promote learner self-confidence and increase teachers' goal orientedness at the 0.001 level. In other subscales, no significant difference was found.

Table 7. Descriptive Statistics for School Satisfaction of Grade 10 Students

Variables	Mean %	SD	Mini.	Maxi.
Educational Guidance	73.39	14.86	20	100
Study Organization	73.24	13.42	20	100
Student Assessment	72.13	12.42	27	100
School Support	73.13	15.47	20	100
Teaching Learning Autonomy	74.21	11.50	31	100

Based on the results shown in Table (7), the mean percentage score of teaching learning autonomy was the highest in all school satisfaction subscales. Higher mean percentage scores represented the perception of high level of school satisfaction. According to Table (8), the results showed that the mean scores of female students were higher than that of male students in all subscales of school satisfaction.

Table 8. The Results of Independent Sample *t*-test for School Satisfaction of Grade 10 Students by Gender

Variables	Gender	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
Educational Guidance	Male	10.94	-.768	658	.443	-.133
	Female	11.08				
Study Organization	Male	21.87	-.647	658	.518	-.203
	Female	22.07				
Student Assessment	Male	21.55	-.616	658	.538	-.179
	Female	21.73				
School Support	Male	18.19	-.593	658	.553	-.179
	Female	18.37				
Teaching Learning Autonomy	Male	40.73	-.344	658	.731	-.170
	Female	40.90				

* Mean difference is significant at the 0.05 level

The results of independent sample *t*-test revealed that there was no significant difference between males and females in all subscales of school satisfaction. It can be said that the school satisfaction of Grade 10 students was not influenced by gender. According to the Table (9), the results revealed that the mean scores of students from Bago were higher than that of students from Yangon in four subscales except student assessment. According to the result of *t*-test, there were significant differences between Yangon and Bago students in study organization, school support and teaching learning at the 0.001 level.

Table 9. The Results of Independent Sample *t*-test for School Satisfaction of Grade 10 Students by Locality

Variables	Location	Mean	<i>t</i>	<i>df</i>	<i>p</i>	MD
Educational Guidance	Yangon	10.98	-.384	658	.701	-.067
	Bago	11.04				
Study Organization	Yangon	21.33	-4.11***	658	.000	-1.276
	Bago	22.61				
Student Assessment	Yangon	21.70	.449	658	.654	.130
	Bago	21.57				
School Support	Yangon	17.53	-5.11***	658	.000	-1.512
	Bago	19.04				
Teaching Learning Autonomy	Yangon	39.83	-4.05***	658	.000	-1.976
	Bago	41.81				

Note: *** Mean difference is significant at the 0.001 level

Table 10. Correlations Between Motivational Strategies and School Satisfaction of Grade 10 Students

Variable	School Satisfaction
Motivational Strategies	.676***

According to the results in Table (10), it was found that there was a positive relationship between motivational strategies and school satisfaction ($r=0.676$, $p<0.001$). The correlation is significant at 0.001 level. It can be concluded that, the better the motivational strategies, the higher the school satisfaction.

Table 11. Multiple Regression Analysis Summary for Students' Motivational Strategies and School Satisfaction

Variable	B	β	t	R	R ²	Adjusted R ²	F
(Constant)P	38.17		8.78	.67	0.45	0.450	60.85
MLTS	.290	.091*	1.95	R² =45% SS = 38.175 + 0.290MLTS + 0.763PGC + 0.682PLA			
PGC	.763	.297***	5.80				
PLA	.682	.130**	3.18				

According to the Table (11), regression analysis pointed out that three subscales of motivational strategies made a significant predictive contribution to school satisfaction, $F= 60.857$, $p < 0.05$, $p < 0.01$, $p < 0.000$ and 45% (adjusted R^2) of the variance in school satisfaction was explained by three motivational strategies. Then, the resultant model can be defined as in the following equation:

$$SS = 38.175 + 0.290MLTS + 0.763PGC + 0.682PLA$$

Where, SS=School Satisfaction, MLTS= Make Learning Tasks Stimulating, PGC= Promote Group Cohesiveness, PLA= Promote Learner Autonomy

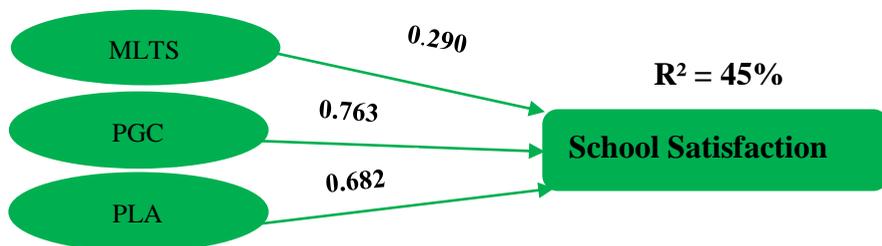


Figure 1. Effect of Motivational Strategies on School Satisfaction

In fact, it can be interpreted that teacher should make the learning tasks stimulating, promote group cohesiveness and group norms and promote learner autonomy to increase grade ten students' school satisfaction.

Conclusion

As expected, students with higher level of perceived motivational strategies had higher level of school satisfaction. This finding supports the notion that the higher the amount of motivational strategies the students possess, the greater the amount of school satisfaction they have. In 1986, Schunk and Cox conveyed that providing students with feedback concerning their efforts has been found to increase intrinsic motivation. As such, teachers should encourage and help students to trust in their own efforts for successful outcomes (Dev, 1997).

Teachers should be on the right track to motivate students by using suitable motivational strategies even though students and teachers had a diversity of experiences concerning these strategies when used in class. Moreover, the students' level of satisfaction was influenced by five core domains: family, friendships, living environment, self and school. If a student possess good school environment, he became a positive learner, have good relationship with teachers and administrator, and may have a view to set high achievable goals and striving to achieve them. Teachers also should give educational guidance, organize the study-plan appropriately, give suitable school support, and let them involve and give some autonomy in teaching and learning and give proper assessment in order to improve the satisfaction of schools.

Discussion and Recommendation

It is important for teachers to acquire knowledge about motivational strategies and school satisfaction because these two factors can influence the teachers' ability to teach effectively in the classroom. The finding of the study supports the view that the teachers' motivational strategies positively correlates with school satisfaction of students. Students need not only education or training on the part of their teacher but also they expect much, love, care, affection, friendly behaviour, a good counsellor and a real guide. Thus, the teacher who possess many motivational strategies and love for his job can provide them all that are required by them. These studies suggest that motivational strategies indeed can depend on teachers' perceptions of the whole classroom.

The result of the study revealed that the students from Bago, had higher school satisfaction than students from Yangon. This may be because

students live in different location and demographical background. Furthermore, students in Yangon were more satisfied with outside facilities such as modernize devices, electronic devices like mobile, computer game and movie. Most of the schools in Bago area are clean and have wide playground for students, the laboratories are well-equipped, and the classrooms are well-facilitated. Therefore, students enjoy and pleased to study in their school.

Limitations of the Study and Future Research

Despite the contribution of this study, there are some limitations that need further examination and investigation. Due to the time limitation, this study is restricted to participants from selected schools within Yangon Region and Bago Region. The major limitation is that Yangon region and Bago Region is actually not very different in living standard. If the sample is from other region that is far from the town, the results will be more valid. Furthermore, a large and more representative sample would be more preferable.

Future research should investigate motivational strategies and school satisfaction between government schools and private schools, between rural and urban area, between middle schools and high schools. There are many factors that influence the motivational strategies and school satisfaction. Therefore, other related factors should be investigated in future study.

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An Investigation into Emotional Maturity and Job Satisfaction of Teacher from Patheingyi Township

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Abstract

The main purpose of this study is to investigate emotional maturity and job satisfaction of teachers from Patheingyi Township. Quantitative approach was used in this study and the required sample was selected by using random sampling technique. The paper consists of 240 samples. For the collection of data Teachers' Emotional Maturity by Dr. Yashvir Singh and Dr. Mahesh Bhargava (2010) and Job Satisfaction Scale by Dr. (Mrs.) Meera Dixit (1993) was used as instruments in this study. The result of descriptive showed that the sample teachers possessed high emotional maturity and job satisfaction. According to the independent sample t test, there were significant difference in emotional maturity by gender and teaching experience. The main finding of this study showed that emotional maturity and job satisfaction were positively and significantly correlated to each other. Thus, it may be assumed that the higher emotional maturity, the better job satisfaction they would have.

Keywords: Emotional Maturity, Job Satisfaction

Introduction

Education is the key to success because it opens doors for people of all logs and it expands the human mind with knowledge. Therefore, nations worldwide are implementing plans designed to provide education development. As education is the foundation of a country, teachers are the builders who make the foundation concrete and shape the country future. If he is satisfied with his profession and emotionally mature then the future nation will be bright if not the whole system will be collapse. So all depends upon the teacher his intelligence, satisfaction, competency, emotional maturity and dedication.

Job satisfaction is of great significance for efficient functioning of any organization. Satisfied workers are the great asset of any organization

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and satisfaction leads their attitudes towards profession. The more the degree of satisfaction, more the attitude will be. Thus no organization/institute/ school can successfully achieve its goal unless and until those who constitute the organization are not satisfied in their job. It is believed that workers are the greatest asset of any organization and dissatisfaction is the biggest liability.

Job satisfaction is the most crucial part in any work. Satisfaction from the job is necessary for full devotion and commitment of teacher towards their schools. Even the best education system is bound to fail in the absence of competent, emotionally mature and satisfied teachers. Unless the teacher is satisfied with his job and not emotionally mature, he cannot deliver the lesson properly. All the variables i.e. emotional maturity and job satisfaction are contributing directly or indirectly in the personal and psychological well-being of the teachers and thus are important in helping them to remain happy in their working environment that will increase their happiness index at workplace which has been the recent emerging issue of great concern contributing in improving the productivity.

The result may be helpful in providing the link between emotional maturity and job satisfaction. Further it may also help the schools in realizing the importance of job satisfaction thereby providing directions for providing a congenial working atmosphere for teachers. The researcher felt necessary to study the relationship between teacher's job satisfaction and emotional maturity among school teachers in the contemporary society is the need of the hour.

Aims of the Study

The main aim of the study is to find out the emotional maturity and job satisfaction of teachers from Patheingyi Township. The specific aims of this research are as follows:

1. To study the emotional maturity of teachers from Patheingyi Township
2. To investigate the job satisfaction of teachers from Patheingyi Township
3. To explore the relationship between emotional maturity and job satisfaction
4. To study how teachers' emotional maturity effect their job satisfaction

Definitions of Key Terms

Emotional Maturity: Emotional maturity is the emotional pattern of an adult who has progressed through the inferior stages characteristics of infancy, childhood, adolescence and participate in adult love relationships without undue emotional strain (Good, 1973).

Job satisfaction: Job satisfaction is a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience (Anderson, 2001).

Review of Related Literature

Nature of Emotional Maturity

Emotional maturity includes the ability to deal constructively with reality (Menninger, 1999). Chamberlain (1960) said that an emotionally matured person is one whose emotional life is well under control. On the other hand, the emotionally immature usually are moody and have not learned to control the emotional moods, the first cousin of emotions. The concept of mature emotional behaviour of any level is that which reflects the fruits of normal emotional development.

Emotional maturity is a requirement for starting and maintaining relationship. It is a prerequisite for long term happiness. Emotional immaturity on the other hand is associated with entanglements, transferences and unsatisfying shallow relationships. Emotional maturity like personality maturity in general, has often been investigated by referring to individuals' self-conceptions (Campbell, Assanand & Di Paula, 2003). Brad Hambrick (2013) recently proposes another definition of emotional maturity in terms of two features; according to him, emotional maturity is (a) the ability to differentiate and properly identify one's emotions while (b) granting yourself the freedom to experience whatever emotion is appropriate to a given situation.

Different Views of Job Satisfaction

Anderson (2001) defines job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience. Anderson (2001) notes that the definition incorporates both cognition (appraisal) and affects (emotional state) thus, Anderson assumes that job satisfaction results from interplay of cognition, and affect, or put

differently; thoughts and feelings. Robbins (2005) conforms to Anderson (2001) by defining job satisfaction as a collection of feelings an individual holds towards his or her job. A person with a high level of job satisfaction holds positive feelings towards the job while a person who is dissatisfied with his or her job holds negative feelings towards it. Thus job satisfaction is a result of the overall reaction towards a job.

Teachers' job satisfaction has perhaps been investigated more and more, often in relationship to teacher stress, job commitment, professional autonomy, school climate and so on. Job satisfaction as "any combination of psychological, physiological and environmental circumstances that cause a person truthfully to say, I am happy with my job". In 1978 Holdaway found that overall satisfaction was closely related to "working with students, societal attitudes, and status of teachers, recognition, and achievement" (cited in Ngimbudzi, 2009).

Teachers' job satisfaction was found to be an integral indicator leading to effectiveness in schools, which is considered as the product and work quality was found to be an important indicator of effectiveness of a school. It is also said that employees become satisfied and develop their positive feelings when they reach the ideals in their profession. The level of job satisfaction increases, performance and organizational commitment improve, absenteeism and turnover decrease, when employees are given proper participation in decision-making in any organization. In this way, employees can gain freedom regarding, how to go about their daily activities and they can also acquire empowerment. There is a positive and significant relationship between employees' job satisfaction and empowerment (Bordin, Bartram & Gian, 2007).

Method

Sample

By using random sampling technique, the sample for this study was chosen from ten Basic Education High Schools located in Patheingyi Township. A total of 408 teachers (77 primary assistant teachers, 261 junior assistant teachers and 70 senior assistant teachers) in selected schools participated.

Research Instruments

In this research, teachers' job satisfaction questionnaire was used to investigate the job satisfaction of school teachers. Therefore, test items were received from Dr. (Mrs.) Meera Dixit (1993), 'Job Satisfaction Questionnaire' for teacher's job satisfaction scale has 52 items; each item has Five Point Likert Scale (5= Strongly Agree, 4= Agree, 3=Undecided, 2=Disagree and 1= Strongly Disagree). Pilot study was done with a sample of 100 teachers (PAT, JAT and SAT). Cronbach's alpha for job satisfaction scale was 0.92.

To measure emotional maturity, Emotional Maturity Scale (EMS) was used in this study. This questionnaire was developed by Dr. Yashvir Singh and Dr. Mahesh Bhargava (2010). Emotional Maturity Scale consists of 48 items with five dimensions; emotional stability with 10 items , emotional progression with 10 items , social adjustment with 10 items , personality integration with 10 items and independence with 8 items . Each item has Five Point Likert Scale. Cronbach's alpha for emotional maturity scale was 0.91.

Data Analysis and Results

The descriptive results for all 408 respondents from Patheingyi Township were presented in Table 4.1.

Table 1. Descriptive Statistics of Emotional Maturity for Teachers

Variables	N	Mean%	SD
Emotional Stability	408	68.57	10.345
Emotional Progression	408	77.23	11.528
Social Adjustment	408	81.75	10.512
Personality Integration	408	79.81	10.733
Independence	408	78.64	12.175
Total Emotional Maturity	408	77.14	8.814

Since the number of items included in each subscale of emotional maturity questionnaire were not the same, the mean scores were transformed to the corresponding mean percentages. According to Table 1, the mean percentage of the Social Adjustment was the highest among the

mean percentage of five dimensions. But the mean percentage of Emotional Stability was the lowest among the mean percentage of five dimensions.

Table 2. Descriptive Statistics of Emotional Maturity for Teachers by Gender

Variables	Gender	N	Mean %	SD	<i>t</i>	<i>df</i>	<i>P</i>
Emotional Stability	Male	32	65.38	11.51	-1.827	406	.068
	Female	376	68.85	10.20			
Emotional Progression	Male	32	71.50	11.27	-2.95**	406	.003
	Female	376	77.72	11.20			
Social Adjustment	Male	32	79.13	11.48	-1.47	406	.141
	Female	376	81.97	10.50			
Personality Integration	Male	32	73.06	11.85	-3.76***	406	.000
	Female	376	80.39	10.49			
Independence	Male	32	73.13	10.49	-2.6**	406	.007
	Female	376	79.11	12.01			
Total Emotional Maturity	Male	32	72.41	9.98	-3.20**	406	.001
	Female	376	77.54	8.607			

According to Table 2, the mean percentage of female teachers was higher than that of male teachers in all subscale and in the whole scale of emotional maturity. Moreover, teachers' emotional maturity was influenced by gender. It meant that females were better in emotional maturity than males.

According to Table 3, the mean score of teachers' emotional maturity were found differences according to their experiences. Thus in order to examine these differences were statistically significant or not, one way analysis of variance (ANOVA) was conducted (See Table 4).

Table 3. Descriptive Statistics of Emotional Maturity for Teachers by Experience

Variables	Experience	N	Mean %	SD
Emotional Stability	Under 10	107	65.51	10.457
	10-25	189	69.16	10.162
	Over 25	112	70.50	9.986
Emotional Progression	Under 10	107	76.26	12.138
	10-25	189	76.80	10.679
	Over 25	112	78.88	12.228
Social Adjustment	Under 10	107	80.45	10.559
	10-25	189	81.93	10.317
	Over 25	112	82.70	10.761
Personality Integration	Under 10	107	77.85	11.386
	10-25	189	79.19	10.285
	Over 25	112	82.75	10.311
Independence	Under 10	107	77.06	13.232
	10-25	189	77.75	11.406
	Over 25	112	81.65	11.962
Total Emotional Maturity	Under 10	107	75.36	9.646
	10-25	189	76.93	8.169
	Over 25	112	79.20	8.694

Table 4. ANOVA Results for Emotional Maturity by Experience

Variables		Sum of Squares	df	Mean Square	F	P
Emotional Stability	Between Groups	1483.150	2	741.575	7.138**	.001
	Within Groups	42074.644	405	103.888		
	Total	43557.794	407			
Emotional Progression	Between Groups	437.664	2	218.832	1.652	.193
	Within Groups	53652.680	405	132.476		
	Total	54090.343	407			
Social Adjustment	Between Groups	287.391	2	143.696	1.302	.273
	Within Groups	44683.109	405	110.329		
	Total	44970.500	407			
Personality Integration	Between Groups	1452.717	2	726.359	6.475**	.002
	Within Groups	45429.126	405	112.171		
	Total	46881.843	407			
Independence	Between Groups	1433.641	2	716.821	4.929**	.008
	Within Groups	58898.895	405	145.429		
	Total	60332.537	407			
Total Emotional Maturity	Between Groups	821.385	2	410.692	5.400**	.005
	Within Groups	30799.281	405	76.048		
	Total	31620.666	407			

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

Then, Post Hoc test was computed by Tukey method to be specific about the significant difference in emotional maturity by experience.

Table 5. Result of Post Hoc Test for Emotional Maturity by Experience

Variables	(I) Experience	(J) Experience	Mean Difference (I-J)	P
Emotional Stability	Under 10	10-25	-3.650**	.009
		Over 25	-4.986**	.001
Personality Integration	Over 25	Under 10	4.900**	.002
		10-25	3.565*	.014
Independence	Over 25	Under 10	4.596*	.014
		10-25	3.900*	.019
Total Emotional Maturity	Over 25	Under 10	3.838*	.004
		10-25	2.263	.077

Note:*p<0.05, **p<0.01

Post Hoc test revealed that there was significant difference in Emotional Stability, Personality Integration, and Independence by teaching experiences at 0.05 and 0.01 level. It can be said that teachers who had experiences from under 10 is lower than the mean scores in Emotional Stability of teachers who had teaching experiences from 10 to 25 and over 25 years. Next, teachers who had experiences from over 25 are higher than the mean scores in Personality Integration and Independence than under 10 and 10-25 years.

Table 6. Descriptive Statistics of Job Satisfaction for Teachers

	N	Mean	SD
Job Satisfaction	408	198.17	19.255

According to Table 6, The mean and standard deviation of teachers' job satisfaction was 198.17 and 19.255.

Table 7. Results of Independent Sample *t* test for Job Satisfaction by Gender

	Gender	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Job Satisfaction	Male	192.34	-1.789	406	.074
	Female	198.67			

In Table 7, the means of male and female were slightly different. The result mentioned that there was no difference in job satisfaction of teacher by gender.

Table 8. Results of Independent Sample *t* test for Job Satisfaction by Educational Level

	Degree	Mean	<i>t</i>	<i>df</i>	<i>P</i>
Job Satisfaction	Graduate	197.88	-1.000	406	.318
	Post Graduate	201.29			

The result showed that the mean of job satisfaction was slightly difference. According to Table 8, there was no significant difference teachers' job satisfaction by educational level.

Table 9. Descriptive Statistics of Teachers' Job Satisfaction by Experience

	Experience	N	Mean	SD
Job Satisfaction	Under 10	107	197.84	22.903
	10-25	189	197.24	17.143
	Over 25	112	200.06	18.855

Thus, in order to examine these differences were statistically significant or not, one way analysis of variance (ANOVA) was conducted.

Table 10. ANOVA Results for Job Satisfaction by Experience

		Sum of Square	<i>df</i>	Mean Square	F	P
Job Satisfaction	Between Groups	574.979	2	287.489	.77	.46
	Within Groups	150315.666	405	371.150		
	Total	150890.645	407			

The result from Table 10 described that there was no significant difference in teachers job satisfaction according to their teaching experiences.

Table 11. Pearson correlation for Emotional Maturity and Job Satisfaction of Teachers

	Job Satisfaction	Emotional Maturity
Job Satisfaction	1	.34**
Emotional Maturity	.34**	1

Note: Correlation is significant at 0.01 level.

According to Table 11 result, it can be clearly seen that teachers' emotional maturity was positively correlated with their job satisfaction ($r = .341^*$, $p < 0.01$). The two variables were positively correlated. This means that the teachers who had strong emotional maturity had high job satisfaction. The inter-correlation among sub-scales of teachers' emotional maturity and job satisfaction was investigated by Pearson Product Moment Correlation (See Table 12).

Table 12. Inter-correlation among Sub-scales of Emotional Maturity and Job Satisfaction

	Job Satisfaction	ES	EP	SA	PI	I
Job Satisfaction	1	.243**	.281**	.244**	.284**	.316**

	Job Satisfaction	ES	EP	SA	PI	I
ES	-	1	.627**	.412**	.453**	.368**
EP	-	-	1	.640**	.648**	.547**
SA	-	-	-	1	.601**	.540**
PI	-	-	-	-	1	.628**
I	-	-	-	-	-	1

Note: Correlation is significant at 0.01 level.

This result showed that there was significantly correlated with each other. It could be interpreted that the higher emotional maturity, the better job satisfaction they would have. Furthermore, subscales of emotional maturity were significantly correlated with job satisfaction.

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A Study of Adolescents' Anxiety Prevalence

Soe Pyae Mon¹ & Yin Mon Aung²

Abstract

The primary objective of this study is to study o adolescents' anxiety prevalence, specifically on Grade 5 to Grade 8 students in No (1), Basic Education High School, Hmawbi. It is very important for teaching-learning activities. The total of 160 students from Grade 5 to Grade 8 students (80 males and 80 females) were selected from No (1), Basic Education High School Hmawbi, Yangon Division during 2017-2018 Academic Year as participants of this study. The design of this study is a quantitative design. Screen for Childhood Anxiety Related Emotional Disorders (SCARED) was used in this study. This questionnaire was developed by Birmaher et al., 1999. It includes five factors; panic disorders, generalized anxiety, separation anxiety, social phobia and school avoidance or school phobia. There are altogether 41 items in this questionnaire. Each item had a three-point Likert scale. (not true, sometimes true and very true) The scoring key for each item was in the order of 0, 1 and 2. The Cronbach's alpha for this questionnaire was 0.877. Descriptive statistics, independent samples t test and ANOVA test were used to analyze data in this study. Overall mean score of adolescents' anxiety prevalence was 32.23. According to this study, the mean values of male and female students are not the same. The t test result showed that there was a significant difference between male and female students for anxiety prevalence. It can be concluded that female students have more anxiety than male students. The mean value of 14 years old students is highest and the mean value of 15 years and above old students is lowest. The ANOVA test result showed that there was a significant difference among different ages. The mean value of Grade 8 students got highest and so, the anxiety of Grade 8 students has highest anxiety level than other Grades. The ANOVA test result showed that there was a significant difference among four Grades for anxiety prevalence. Based on the result of the anxiety prevalence, suggestions and discussion were given in this study.

Keywords: Adolescents' Anxiety, Anxiety

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Introduction

A wide range of individuals experience some form of anxiety. Anxiety is one of the most prevalent mental health concerns for children and adolescents (Essau, 2003; Moksnes, & Espnes, 2012; Muris et al., 2010). Anxiety can be extremely impactful for adolescents, given the importance of wellbeing during times of transition (Costello et al., 2011). Sources of anxiety can vary greatly. Children and adolescents often experience anxiety when they have other psychological disorders (Essau, 2003), if they are raised with anxious parents (Bogels, van Dongen, & Muris, 2003; Pereira, Barrors, Mendonca, & Muris, 2014).

There is no denying to the fact that anxiety has increased in the society it not only affects education but also student's personalities which linger throughout their lives. Today, anxiety is a common phenomenon of every day's life. It plays an important role in human life because all of us are the victims of anxiety in different ways. Some people believe that anxiety is most often present as a self-protection mechanism that surfaces in response to threatening situations. In this study, the anxiety prevalence among high school students was studied. It includes what the prevalence of anxiety among high school students is, what the most frequent subcategories of anxiety are, and what the differences are between grade level and gender.

Purpose of the Study

The purpose of the study is to investigate adolescents' anxiety prevalence, specifically on Grade 5 to Grade 8 students in No (1), Basic Education High School, Hmawbi.

Research Questions

1. Is there any difference in anxiety prevalence according to gender?
2. Is there any difference in anxiety prevalence according to schools?
3. Is there any difference in anxiety prevalence according to age level?
4. Is there any difference in anxiety prevalence according to grades?

Scope and Procedure

The total of 160 students from Grade 5 to Grade 8 students (80 males and 80 females) were selected from No (1), Basic Education High School Hmawbi, Yangon Division during 2017-2018 Academic Year as

participants of this study. Screen for Childhood Anxiety Related Emotional Disorders (SCARED) was used in this study. This questionnaire was developed by Birmaher et al., 1999. It includes five factors; panic disorders, generalized anxiety, separation anxiety, social phobia and school avoidance or school phobia. Panic disorders factor has 13 items, generalized anxiety factor has 9 items, separation anxiety factor has 8 items, social phobia factor has 7 items and school avoidance factor has 4 items. There are altogether 41 items in this questionnaire. Each item had a three-point Likert scale. (not true, sometimes true and very true) The scoring key for each item was in the order of 0, 1 and 2.

Definition of the Key Terms

Anxiety: Anxiety can be defined as “subjective feelings and thoughts and observable fight-flight-freeze behavior, but also in physical symptoms such as palpitations, trembling, and shortness of breath.” (Muris, Mayer, Freher, Duncan, & van den Hout, 2010).

Adolescents’ Anxiety: Adolescent anxiety is defined as reported experiences of worry, poor concentration, physiological reaction such as sweating or breathing problems, negative social-evaluative fears, and sensitivity about failure (Hodges, 1990).

Review of Related Literature

Anxiety

At different times in our lives we will all worry about things like our health, finances, or family concerns. However, unlike the mild anxiety that is caused by a specific event and goes away after a short period of time (e.g., giving a public speech or a job interview), more intense anxiety can last at least 6 months and can worsen if it is not treated.

It is common to feel stressed and even normal to experience mild to moderate levels of anxiety from time to time, especially if you are engaged in many activities that place multiple demands on you (e.g., academics, work, family responsibilities, etc.). However, if you are experiencing an ongoing feeling of anxiety that is interfering with your ability to enjoy life, your relationships, or is making it difficult to complete daily activities/responsibilities, then you may be experiencing a more problematic level of anxiety. When anxiety reaches such a level, we may need to take steps to address it head on rather than wishing or hoping that it will pass on its own.

Anxiety is an emotion caused by a perceived or experienced threat, which often leads to an avoidance or evasion. Anxiety thus is a reaction on something that scares us which leads to evasive behavior or intense emotions in case the fear has to be confronted. Specific types of anxiety are social phobia, separation anxiety, panic disorders and school avoidance or school phobia.

Method

Sample of the Study

The total of 160 students from Grade 5 to Grade 8 students (80 males and 80 females) were selected from No (1), Basic Education High School Hmawbi, Yangon Division during 2017-2018 Academic Year as participants of this study. Participants ranged in age between 11 to 15 years and above.

Instrumentation

Screen for Childhood Anxiety Related Emotional Disorders (SCARED) was used in this study. This questionnaire was developed by Birmaher et al., 1999. It includes five factors; panic disorders, generalized anxiety, separation anxiety, social phobia and school avoidance or school phobia. Panic disorders factor has 13 items, generalized anxiety factor has 9 items, separation anxiety factor has 8 items, social phobia factor has 7 items and school avoidance factor has 4 items. There are altogether 41 items in this questionnaire. Each item had a three-point Likert scale. (not true, sometimes true and very true) The scoring key for each item was in the order of 0, 1 and 2.

Data Analysis and Results

After data collecting, data were analyzed by using a statistical package for the Social Science (SPSS). Descriptive statistics and inferential statistics were applied to the data set to analyze.

Analysis of the Results According to Five Factors

The total numbers of 160 students were administered to analyze the results of anxiety prevalence according to five factors. These five factors are panic disorders, generalized anxiety, separation anxiety, social phobia and school avoidance or school phobia.

Table 1. Mean and Standard Deviation of five Factors of Anxiety Prevalence

Five Factors of Anxiety Prevalence	Items	Mean	Std. Deviation	Mean Percentage
Panic	13	6.74	11.10	26%
Generalized	9	8.63	3.56	48%
Separation	8	7.99	3.56	50%
Social	7	7.54	3.27	54%
School avoid	4	1.32	3.02	17%
Total	41	32.23	11.10	

Table 1 showed that the total mean of anxiety prevalence is 32.23. The mean percentage of social phobia factor has the highest value among five factors and the mean percentage of school avoidance factor has the lowest value. The result showed that the means of generalized anxiety and separation anxiety factors are almost the same and the mean of school avoidance factor is lower than other factors. According to the results, the social phobia of students is needed to reduce during these ages and they are found that they appear to have less trouble with school avoidance.

Analysis of the Results According to Students' Gender

The total number of students is 160. The number of male students is 80 and the number of female students is 80. In order to make specific analysis, the independent sample *t* –test was used to examined whether there is significant different or not.

Table 2. Mean Comparison of Anxiety Prevalence according to Students' Gender

Gender	N	Mean	Std. Deviation	t	Sig
Male	80	29.45	10.721	-3.256***	.001
Female	80	35.00	10.841		

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

The above table showed the mean scores of male and female students. The mean values of male and female students are not the same. The mean values of female students are greatly higher than the male students. The t test result showed that there was a significant difference between male and female students for anxiety prevalence. It can be concluded that female students have more anxiety than male students. This may be because female students are in the ages of starting menstrual cycle and feeling insecurity for their body changes and parents and teachers are more concentrating on the female students for their changes and security. Therefore, they have more anxiety when they grow old or when they become adolescents.

Analysis of the Results according to Students' Age

The total number of students is 160. The number of 11 year old students is 33, the number of 12 year old students is 40, the number of 13 year old students is 39, the number of 14 year old students is 30, and the number of 15 year and above old students is 18. In order to make specific analysis, the ANOVA-test was used to examined whether there is a significant different or not.

Table 3. Mean Comparison of Anxiety Prevalence according to Students' Ages

Age	N	Mean	Std. Deviation	F	Sig.
11yr	33	28.82	11.26	2.408**	.023
12yr	40	32.20	10.05		
13yr	39	33.95	9.91		
14yr	30	35.93	12.01		
15yr and above	18	28.61	12.22		
Total	160	32.23	11.10		

Note: ** The mean different is significant at the 0.05 level.

The above table showed the mean of different ages. The mean values of different ages are different. The mean value of 14 years old students is highest and the mean value of 15 years and above old students is lowest. The ANOVA test result showed that there was a significant

difference among different ages. It can be concluded that in the range of 11 to 14 years old students have more anxiety as they have to face challenges socially, academically and emotionally. But when they become 15 years old and above, their anxiety become less and less.

Analysis of the Results according to Grades

The total number of grades is 4. They are grade 5, grade 6, grade 7 and grade 8. In order to make specific analysis, the ANOVA–test was used to examined whether there is a significant different or not.

Table 4. Mean Comparison of Anxiety Prevalence according to Grades

	N	Mean	Std. Deviation	F	Sig.
Grade 5	40	29.65	10.674	2.934**	.035
Grade 6	40	31.95	9.987		
Grade 7	40	30.88	12.758		
Grade 8	40	36.43	9.959		
Total	160	32.23	11.102		

Note: ** The mean different is significant at the 0.05 level.

The above table showed the mean scores of anxiety prevalence according to grades. The mean values of four grades are a little different from each other. The mean value of Grade 8 students got highest. It means that the anxiety of Grade 8 students has highest anxiety level than other Grades. This may be because the Grade 8 students have to learn more difficult courses than other grades and they have to sit the government examination. The ANOVA test result showed that there was a significant difference among four Grades for anxiety prevalence.

Conclusion

The primary purpose of this study is to study adolescents' anxiety prevalence, specifically on Grade 5 to Grade 8 students in No (1), Basic Education High School, Hmawbi. The study was conducted in 2017-2018

academic year with quantitative design. A total of 160 students from Grade 5 to Grade 8 students (80 males and 80 females) were participated in this study. In this study, Screen for Childhood Anxiety Related Emotional Disorders (SCARED) was used. This questionnaire includes 41 items. The major findings of the study and discussions are illustrated below.

The total mean of anxiety prevalence is 32.23. The mean percentage of social phobia factor has the highest value among five factors and the mean percentage of school avoidance factor has the lowest value. The result showed that the means of generalized anxiety and separation anxiety factors are almost the same and the mean of school avoidance factor is lower than other factors. According to the results, the social phobia of students is needed to reduce during these ages and they are found that they appear to have less trouble with school avoidance.

The mean values of male and female students are not the same. The mean values of female students are greatly higher than the male students. The t test result showed that there was a significant difference between male and female students for anxiety prevalence. It can be concluded that female students have more anxiety than male students. This may be because female students are in the ages of starting menstrual cycle and feeling insecurity for their body changes and parents and teachers are more concentrating on the females for their changes and security. Therefore, they have more anxiety when they grow old or when they become adolescents.

The mean values of different ages are different. The mean value of 14 years old students is highest and the mean value of 15 years and above old students is lowest. The ANOVA test result showed that there was a significant difference among different ages. It can be concluded that in the range of 11 to 14 years old students have more anxiety as they have to face challenges socially, academically and emotionally. But when they become 15 years old and above, their anxiety become less and less.

The mean values of four grades are a little different from each other. The mean value of Grade 8 students got highest. It means that the anxiety of Grade 8 students has highest anxiety level than other Grades. This may be because the Grade 8 students have to learn more difficult courses than other grades and they have to sit the government examination. The ANOVA test result showed that there was a significant difference among four Grades for anxiety prevalence.

Limitations of the Study

In case of a study of anxiety prevalence of adolescents, longitudinal design is more desirable. Due to scarcity of time and resources, such design was impossible for this study and the sample size was not sufficient to represent the whole students as there were many school students in the whole of Myanmar. Moreover, the sample used in this study was only students for the two selected schools in Yangon Region. So, it may not be a representative for the whole students. The sample size was relatively enough but it would be better to study all students.

Suggestions and Recommendation

Anxiety can be defined as “subjective feelings and thoughts and observable fight-flight-freeze behavior, but also in physical symptoms such as palpitations, trembling, and shortness of breath.” (Muris, Mayer, Freher, Duncan, & van den Hout, 2010).

According to the research, it was found that parents, teachers and students should take care of the students’ anxiety, especially on panic disorders, generalized anxiety, separation anxiety, social phobia and school avoidance or school phobia.

Based on the findings of the study, the following recommendations were made:

- to educate students about anxiety
- to provide an open-communication classroom
- to teach and discuss positive coping skills with students
- to allow students opportunities to participate and apply coping strategies
- to teach students to focus their attention on a specific object.

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A Study of Peer Pressure among Students in Schools

Soe Pyae Mon¹ & Khin Win Maw²

Abstract

The main purpose of the study was to study of peer pressure among students in schools. Quantitative research method was used in this study. Students 400 of Grade 6 (5th Standard), Grade 7 (6th Standard), Grade 8 (7th Standard) and Grade 9 (8th Standard) (AC 2018-2019) students are randomly selected from No. (5) Basic Education High School, Insein and No.(4) Basic Education High School, Kamayut Township. As the research instruments, Exposure to Peer Pressure Questionnaires (EPPQ) questionnaire that adapted by Allen Yen at 2002 was translated into Myanmar version and used in this study. There are 36 items for students and 3-point Likert scales for students to investigate peer pressure. The Cronbach's alpha for this questionnaire was 0.829. Descriptive statistics, independent samples t-test and analysis of one-way (ANOVA) were used. The mean value of female students was higher than mean value of male students. The peer pressure of male students was higher than female students. The higher the mean values the lower the peer pressure. So, the lower the mean values the higher the peer pressure. As a result of descriptive statistics, it was that the mean value of the peer pressure between male and female students. According to this study, the t-test result showed that there was significant difference between peer pressure of male and female students ($t = -5.217, p < 0.0001$). It can be concluded that students from both schools have low peer pressure. According to t-test result, there is no significant difference between peer pressure of students from B.E.H.S (5) Insein Township and students from B.E.H.S (4) Kamaryut Township. According to the mean, mean values of scores, mean values among the different ages were almost the same. The mean values of peer pressure that had 11 years were higher than the others. Moreover, mean values among the different grades was almost the same. The mean score of peer pressure who had Grade 9 were higher than the others.

Keywords: Peer pressure, Peer

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Introduction

The process of socialization of individuals in society as they grow determines the extent to which they will be able to handle the issue of peer pressure whether as youth or when they finally become adults. This is attributed to the fact that most individuals relate the issue of peer pressure to the youth ignoring the fact that it could be carried on to adulthood. Some adults carry around their experiences with peer pressure from their youths into adulthood.

The study sought to provide vital insights and widening our understanding on the influence of peer pressure in advantage and disadvantages at school. The findings of this study will strongly enlighten various stakeholders in education and thus stimulate them to provide good learning environments and install good social attitudes to learners. The study is very significant as it will motivate stakeholders in education to improve school environments in such a way as to promote good behavior and also offer possible interventions. This study will become a new referral point for further research on the influence of peer pressure among students at schools.

Purpose of the Study

The main purpose of this study is to study peer pressure among students in schools

Research Questions

1. Is there any difference in peer pressure among students according to gender, schools, age level and grades?
2. Is there any difference in peer pressure among students according items?

Scope and Procedure

In this study, students 400 of Grade 6,7,8 and 9 (AC 2018-2019) are randomly selected from No. (5) Basic Education High School, Insein Township and No.(4) Basic Education High School, Kamayut Township, Yangon Region. Exposure to Peer Pressure Questionnaire (EPPQ) is one of the instruments created by Allen & Yen at 2002. EPPQ consists of 36 items. Participants will be asked to respond to each item on a 3-point Likert scales which ranged from 1 = “always”, 2 = “sometimes” and 3 = “never”.

Definition of the Key Terms

Peer: Peer is people of the same age group, like classmates, or workmates are called peers. (Steinberg & Monahan, 2007).

Peer Pressure: Peer Pressure is the influence exerted by a peer group or an individual encouraging other individuals to change their attitudes, values or behaviors in order to conform to group norms (Treynor, 2009).

Review of Related Literature

Peer Pressure

As people grow older, they are faced with some challenging decisions (Steinberg & Monahan, 2007). People of the same age group, like classmates, or workmates are called peers. Our peers are the people with whom we identify and spend time with. In students, peers may be determined less by age and more by shared interests or professions.

Peer pressure can be either expressed or implied. In expressed peer pressure, an individual is challenged directly to comply with existing norms. Studies show that both peers are inclined to take risks they do not want to take because they believe the risky behavior will increase their standing in the eyes of their peers and assure their acceptance in the group (Cotterell, 2007).

School students' peer pressure can be challenging when an individual is trying to fit in a certain group given the fact that resources are a key factor here. By the time a person reaches the age of forty in a professional or managerial career, it is clear whether he or she will make it to the top of the field. If individuals have not reached their goals by this time, most adjust their level of aspirations and in some cases start over in a new career. Many however are unable to recognize that they have unrealistic aspirations and thus suffer from considerable stress.

Effects of Peer Pressure

Peer pressure kills individuality and gives rise to a set of people who are merely clones of each other. Often what people do not realize is that although there exists the grab of a similar fashion or a similar trend that masks these clones, the actual faces behind these facades are unique (Clause, 1968).

In the study of Merroir Chimwamurombe (August 2011), results showed a significant positive relationship between peer pressure and adolescent misbehavior in schools. In addition, misbehavior was also positively predicted in both advantaged and disadvantaged schools, with disadvantaged schools being significantly more influential. When comparing peer pressure and adolescent misbehaviors in both advantaged and disadvantaged schools, adolescents in disadvantaged schools engaged significantly more in misbehavior activities and also responded positively more to peer pressure than their counterparts in advantaged schools.

Method

Sample of the Study

By using stratified random sampling technique, the sample consists of 400 students (200 Males and 200 Females) from Grade 6, 7, 8 and 9 (AC 2018 – 2019) from No. (5) B.E.H.S Insein and No.(4) B.E.H.S Kamayut from Yangon Division. Their ages range from 10-15 years.

Instrumentation

Exposure to Peer Pressure Questionnaire (EPPQ) is one of the instruments in this study. This questionnaire was created by Allen & Yen at 2002 and the purpose of it used is to measure peer pressure among school students at any age. EPPQ consists of 36 items. Participants will be asked to respond to each item on a 3-point Likert scales which ranged from 1 = “always”, 2 = “sometimes” and 3 = “never”.

Pilot study was conducted with 20 students of Grade 6, 7, 8 and 9 from No. (4) B.E.H.S, Kamaryut Township, Yangon in October, 2018. Based on the research of the pilot study, question which were inappropriate and vague and those which could get incomplete answers were revised and changed. After the pilot testing, this questionnaire was administered to 400 students in the academic year of 2018-2019 were selected from two selected schools in the second and third week of November, 2018 to get necessary data. Firstly, a short consent explanation will be attached with questionnaire for participants to understand the topic of this study. For them who agreed with the term, they were asked to complete the questionnaire and any questions can be asked if they are not understood. All questionnaires will be given to participants and collected personally in the classroom. Testing time will be approximately 30 minutes. After the completion of the

questionnaire, the participants were thanked by the researcher for their cooperation.

Data Analysis and Results

After the required instrument has been developed for the research and conducted data collection, the peer pressure among students in schools was examined. In addition, peer pressure of students according to gender, school, age and Grade were investigated.

Analysis of Peer Pressure Between Male and Female Students

In sample 400 students, in order to find out the differences in peer pressure among students in schools by gender, the independent sample t-test was made.

Table 1. Analysis of Peer Pressure Between Male and Female Students

Gender	N	Mean	SD	t	Sig
Male	200	101.61	5.057	-5.217	.000
Female	200	104.06	4.284		

*Mean difference is significant at 0.001 levels.

According to table, the mean value of female students was **higher** than the mean value of male students. It can be concluded that male students have more peer pressure than female students. This may be that male students enjoy communicating with their peer. So, male students are more needed to adjust their peer pressure that influence on them. The t-test result showed that there was significant difference between peer pressure of male and female students. The peer pressure of male students is higher than female students because they still want to feel like they fit in or belong to a group.

Analysis of Peer Pressure Among Students by Schools

To find out the differences in peer pressure among students by schools, the mean values of students from B.E.H.S (5) Insein Township and students from B.E.H.S (4) Kamayut Township were reported in table 2.

Table 2. Analysis of Peer Pressure among Students by Schools

School	N	Mean	SD	t	Sig
B.E.H.S (5) Insein	200	102.97	4.853	.547	.585
B.E.H.S (4) Kamayut	200	102.70	4.832		

It can be concluded that students from both schools have same peer pressure. There is no significant difference between peer pressure of students from B.E.H.S (5) Insein Township and students from B.E.H.S (4) Kamayut Township at 0.05 level. Since a peer is a social and primary group of people with similar interest, age educational background and social status, they can also be very diverse with people from different social and economic background. It can be concluded that their parents may be care more about their children. They may be helpful to their children and they may be talk to them as friends not as authoritative parents.

Analysis of Peer Pressure of Students According to Different Age Groups

The data collected were analyzed according to different age groups.

Table 3. Analysis of Peer Pressure of Students According to Different Age Groups

Age	N	Mean	SD	Minimum	Maximum	F	Sig
10 years	101	102.84	4.843	86	108	4.008	0.003
11 years	12	106.08	1.505	103	108		
12 years	106	101.57	5.241	86	108		
13 years	84	103.01	4.740	86	108		
14 years	97	103.01	4.397	84	108		

*Mean difference is significant at 0.001 levels.

According to the values of mean scores, mean values among the difference ages were almost the same. The mean values of peer pressure that had 11 years were higher than the others. The mean value of peer pressure that had 12 years was lower than the others. According to t-test result, there is significant difference between peer pressure of students ($F=4.008$, $p < 0.001$). So they have different peer pressure.

Analysis of Peer Pressure of Students According to Different Grades

The data collected were analyzed according to different Grades.

Table 4. Analysis of Peer Pressure of Students According to Grades

Grade	N	Mean	SD	F	Sig
Grade 6	100	102.91	4.818	2.006	.113
Grade 7	100	101.90	5.082		
Grade 8	100	102.98	4.920		
Grade 9	100	103.54	4.437		

According to the values of mean values, mean values among the difference grades was almost the same. The mean score of peer pressure who had Grade 7 value were lower than the others. According to t-test result, there is **no significant peer pressure** of students. It may be that in Grade 7, most of the students may face hormonal changes than others.

Analysis of the Mean Values of Peer Pressure of Students According to items

The mean values of peer pressure of students according to items were presented in table 5.

Table 5. Analysis of Peer Pressure of Students According to Items

Item No.	N	Minimum	Maximum	Mean	SD
P1	400	1	3	2.97	.204
P2	400	1	3	2.86	.380
<i>P3</i>	<i>400</i>	<i>2</i>	<i>3</i>	<i>2.95</i>	<i>.213</i>
P4	400	1	3	2.96	.220
<i>P5</i>	<i>400</i>	<i>2</i>	<i>3</i>	<i>2.96</i>	<i>.190</i>
P6	400	1	3	2.99	.150
P7	400	1	3	2.96	.220
P8	400	1	3	2.89	.333
P9	400	1	3	2.91	.300
P10	400	1	3	2.78	.437

Item No.	N	Minimum	Maximum	Mean	SD
<i>P11</i>	400	2	3	2.97	.164
P12	400	1	3	2.94	.289
P13	400	1	3	2.75	.542
P14	400	1	3	2.19	.705
P15	400	1	3	2.44	.630
P16	400	1	3	2.90	.320
P17	400	1	3	2.96	.225
P18	400	1	3	2.94	.248
P19	400	1	3	2.85	.366
P20	400	1	3	2.84	.396
P21	400	1	3	2.84	.398
P22	400	1	3	2.83	.391
P23	400	1	3	2.80	.427
P24	400	1	3	2.84	.385
P25	400	1	3	2.87	.361
P26	400	1	3	2.96	.219
P27	400	1	3	2.98	.157
P28	400	1	3	2.96	.225
P29	400	1	3	2.75	.463
P30	400	1	3	2.95	.245
P31	400	1	3	2.93	.278
P32	400	1	3	2.55	.559
<i>P33</i>	400	2	3	2.97	.171
P34	400	1	3	2.77	.430
P35	400	1	3	2.97	.178
P36	400	1	3	2.86	.386
Total	400				

The higher the mean values, the lower the peer pressure. The highest mean values of item 6 and item 27 were 2.99 and 2.98. So it can be concluded that students felt **no peer pressure** in these items. This means that in Myanmar, students using drugs were restricted in schools and students were not encouraged fight physically with a teacher. The mean values of item 14 and 15 were 2.19 and 2.44. It can be concluded that students felt **sometimes peer pressure** in these items. It can be said that students were sometimes encouraged to offer bribes to other students and prefect students by their peers. According to mean value, it can be interpreted that none of the students always feels peer pressure.

Table 6. Analysis of Peer Pressure of Students According to Items in Term of Mean

No	Item No	Item	Mean	Degree of Feeling
1	P6	သူငယ်ချင်းများသည် ကျွန်ုပ်အား မူးယစ်ဆေးဝါး သုံးစွဲရန် တွန်းအားပေးပါသည်။	2.99	Never
2	P27	သူငယ်ချင်းများသည် ကျွန်ုပ်အား ဆရာ၊ ဆရာမ များကို ကိုယ်ထိလက်ရောက် တုံ့ပြန်ရန် တွန်းအားပေးပါသည်။	2.98	Never
3	P14	သူငယ်ချင်းများသည် ကျွန်ုပ်အား အခြားသော စာသင်သားများနှင့် ဆက်ဆံရေးကောင်းဖို့ လက်ဆောင် ပေးရန် တိုက်တွန်းဖူးပါသည်။	2.19	Sometimes
4	P15	သူငယ်ချင်းများသည် ကျွန်ုပ်အား စာတော်သော ကျောင်းသားများကို လက်ဆောင်ပစ္စည်းပေး၍ အကူအညီ တောင်းရန် တွန်းအားပေးပါသည်။	2.44	Sometimes

. According to the results, participants showed that they sometimes and never felt peer pressure in item 3, 5, 11 and 33. It means that no one

always felt peer pressure in these cases in Myanmar. Items can be clearly described as following.

Table 7. Analysis of Peer Pressure of Students According to Items in Term of Maximum and Minimum Values

No	Item No	Item	Min	Max	Degree of Feeling
1	P3	သူငယ်ချင်းများသည် ကျွန်ုပ်အား အခြားသော စာသင်သားမားကို ရိုက်နှက်ရန် တွန်းအားပေးပါသည်။	2	3	Sometimes, Never
2	P5	သူငယ်ချင်းများသည် ကျွန်ုပ်အား ဆေးလိပ်သောက်ရန် တွန်းအားပေးပါသည်။	2	3	Sometimes, Never
3	P11	သူငယ်ချင်းများသည် ကျွန်ုပ်အား အိမ်မှပစ္စည်းများကို ခိုးယူရန် တွန်းအားပေးပါသည်။	2	3	Sometimes, Never
4	P33	သူငယ်ချင်းများသည် ကျွန်ုပ်အား ဆရာ၊ ဆရာမများအပေါ် ရိုင်းပျံ့စွာ ဆက်ဆံရန် တိုက်တွန်းပါသည်။	2	3	Sometimes, Never

Conclusion

The mean value of female students was little higher than the mean value of male students. It can be concluded that male students have more peer pressure than female students. So, male students are more needed to adjust their peer pressure that influence on them.

The mean values of the peer pressure of schools were the same in both schools. According to t-test result, there is no significant difference between peer pressure of students from B.E.H.S (5) Insein Township and students from B.E.H.S (4) Kamayut Township. It can be concluded that students from both schools have same peer pressure. Their parents may be

care more about their children. They may be helpful to their children and they may be talk to them as friends not as authoritative parents.

The mean values among the difference ages were almost the same. The mean score of peer pressure who had 12 years were lower than the others. As the *t*-test result, there is significant difference between peer pressure of students. So they have more peer pressure than other age groups.

The mean values among the difference grades was almost the same. The mean score of peer pressure who had Grade-7 were higher than the others. As the *t*-test result, there is no significant peer pressure of students. It may be that in Grade 7, most of the students may face hormonal changes than others.

The peer pressure of male students was higher than female students. So, the lower the mean values, the higher the peer pressure. The highest mean values of item 6 and item 27 were 2.99 and 2.98. So it can be concluded that students felt no peer pressure in these items. This means that in Myanmar, students using drugs were restricted in schools and students were not encouraged fight physically with a teacher. The mean values of item 14 and 15 were 2.19 and 2.44. It can be concluded that students felt sometimes peer pressure in these items. It can be said that students were sometimes encouraged to offer bribes to other students and prefect students by their peers. It can be interpreted that none of the students always feels peer pressure.

Limitations of the Study

In case of a study of peer pressure among students in schools, longitudinal design is more desirable. Due to scarcity of time and resources, such design was impossible for this study and the sample size was not sufficient to represent the whole students as there were many school students in the whole of Myanmar. Moreover, the sample used in this study was only students for the two selected schools in Yangon Region. So, it may not be a representative for the whole students. The sample size was relatively enough but it would be better to study all students.

Suggestion and Recommendations

Peers play a very important role in a student's life. The effect of peer pressure depends on the peer group we have (good or bad). A good peer group will surely play a vital role in shaping our personality but a bad peer group will give an opposite impact on us. It is beneficial as long as we know our limits.

Peer pressure of the students should be given a careful awareness. Therefore, the peer pressure of children from different schools and universities should be explored in order to create positive environment. Besides, the results and findings of the further study should also be applied for the social and emotional development of the students. The more research findings and results can support the development of Myanmar children.

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Case Studies Application in Mathematics Learning

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Abstract

The purpose of this study was to investigate the factors influencing Mathematics learning. The study involved a small number of students, parents, and teachers. Descriptive qualitative research methods were used. Multiple sources of data were used through case studies; classroom observations and clinical, unstructured, and informal interviews. In this research the form of case study was clinical study. All available data about the selected students were surveyed, and the significant items were assembled, organized, and studied in order that the nature and the causes of difficulties could be discovered and that treatment designed to remove the difficulties could be planned and carried out. The researcher engaged in the case studies of the selected sample students with problems in an attempt to discover the root causes of the students' problems. An attempt was also made to figure out what makes the difference between successful and unsuccessful students. The researcher gathered much of the information by four methods: long-term participant observation, diagnostic testing, home visit and focused interview. When tentative findings were substantiated, revised, and reconfigured three categories were constructed and named as cognitive, motivational and affective factors.

Keywords: Case Study, Learning, Cognitive, Motivational, Affective

Introduction

Teachers need to find out if factors other than chosen objectives and instructional procedures need attention. These factors may include the physical and psychological well-being of the student. In order to get the necessary information about each student, the teachers need to select or create procedures for assessing. It is both practically and theoretically important that the teachers develop a comprehensive understanding of how various cognitive, motivational, and affective factors interact when students decide why, how and how hard to work on their learning. This study attempted to address these questions empirically and in ecologically valid context.

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Definitions of Key Terms

Case Study: Case study research is a qualitative research approach in which researchers focus on a unit of study known as a bounded system (Mills & Gay, 2016).

Learning: Learning is an active process in which learners construct new ideas or concepts based on their current/past knowledge (Bruner, 1960).

Methodology

Descriptive qualitative research method was used.

Purpose of the Study

The purpose of the present study is to investigate the factors influencing Mathematics learning.

Research Instrumentation

Before making the case studies, the researcher prepared the outline for making a case study. It includes ten parts; identification of pupil (name, address, age, sex, school, grade), statement of the problem (an account of why the pupil is being studied, what appears to be his or her trouble, is he or she a deficient in Mathematics, or what?), diagnostic test data, interview with the pupil, the pupil's physical condition, social and emotional adjustment, educational record, home condition, diagnosis of the case and recommendation.

Procedure

Case studies were done to explore the factors causing the difficulties for selected students who need remedial instruction. The sample students were studied during the 2014-2015, 2015-2016 and 2016-2017 academic year. The researcher met each sample two or three days per week along the case studies. The data were gathered from four means; long-term participant observation, diagnostic testing, home visit and focused interview. In open ended focused interview, the researcher was interested in learning about predetermined outlines for case study. No uniform set of questions was prepared, but try to limit the interview to certain predetermined outlines. The questions were phrased ordered and varied among the interviewees.

Sample

In the case studies, purposive sampling method was used. Five students (3 males and 2 females) were chosen.

Analysis of Data as Summaries for Case Studies

Five case studies were summarized to illustrate each factor and related variables.

Student A (from 1.10.14 to 15.3.16)

1. *Identification of pupil:* Name- Student A; Address- Kyimyindine; Age- 15; Sex- male; School- BEHS(2) Kyimyindine; Grade- 10
2. *Statement of the problem:* He failed both formal tests in school and tutorials in tuition. He never got 40% marks in all subjects. He was a deficient in Mathematics and other subjects. He was chronic failure.
3. *Diagnostic test data:* He was weak in the following abilities: (a) Recognition of the meanings of Mathematical terms, (b) Mastery of the basic Mathematics skills, (c) Acquiring the new concepts, (d) Clarity of handwriting, (e) Reading and understanding the test items in English, and (f) Recognition the learnt concepts
4. *Interview with pupil:* He had positive attitude to the school subjects. He showed negative attitude to teachers (both school teachers and tuition teachers except Myanmar subject teacher in tuition). He was interested in History, Politic and law whereas he was a science student of specialization 7 (physics, chemistry, biology). He wanted to become a politician. If not, he tended to be a lawyer. When he got time he went and played TV games and Computer games.
5. *Student's physical condition:* He had visual defects. His glasses were for short-sightedness and long-sightedness and with cylinder. He had diseased teeth. He was frequently ill.
6. *Social and Emotional Adjustment:* He got along well with his classmates and also teachers. He did not seem shy. He did not exhibit aggressive behavior. He had not been involved in any disciplinary episodes in schools.
7. *Educational Records:* He was transferred to four different schools during the remainder of his school career. He missed an average of 20

days (4 weeks) of each school year. He got the first prize in grade three. From grade five he gradually became a slow learner.

8. *Home conditions*: The socioeconomic level of the home was median status. His father is a manager of a company. His mother could give enough care to her sons as she was not a working mother. She possesses an eleventh-grade educational background. He has a younger brother (age 12 years old) who is superior to him in academic achievement. In many cases his mother showed preferential affection for younger son. Her preferential treatment of the younger son over the other predicted competitiveness was observed in their interaction. The home is a happy place in which to live for him although there is a certain amount of conflict.
9. *Diagnosis of the case*: Taking all the facts into consideration, his health condition, not enough mastery of basic Mathematics skills, language difficulty, social and emotional adjustment to the blames of his teachers and his mother, and his attitude to Mathematics seem to be the chief obstacles to his normal progress.
10. *Recommendation*: The individualized remediation should be given. His mother should be advised not to give preferential treatment of the younger brother.

Student B (from 3.7.14 to 15.3.16)

1. *Identification of pupil*: Name- student B; Address- Kamayut; Age- 15; Sex- female; School- BEHS (5) Kamayut; Grade- 10
2. *Statement of the problem*: There was a difference between what was expected of Student B and what she achieved in chapter-end tests.
3. *Diagnostic test data*: She made the following error patterns in diagnostic tests:(a) careless mistakes in computation,(b) misconception, and (c) lack of recognition of theorems, corollaries, and definitions.
4. *Interview with pupil*: She seemed to be motivated intrinsically to learn Mathematics as she found Mathematics learning interesting and enjoyable. Student B showed enjoyment and interest in learning Mathematics. She had positive attitude to all her teachers (except Myanmar teacher). She expressed positive attitudes toward Mathematics. When confused or faced with learning difficulties, she

asked the teacher for clarification or assistance. She tended to become an engineer.

5. *Pupil's physical condition*: She suffered from speech difficulties (stuttering, stammering). When exciting she lost her voice.
6. *Social and Emotional adjustment*: She did along well with peers, teachers. She did not have disciplinary episodes in school.
7. *Educational record*: She stood at first position from kindergarten to grade 10. Her class teacher said she was industrious and ambitious.
8. *Home conditions*: She lived with her parents in her native town still grade 7. From grade 8 to 10 she lived with her aunt (her father's younger sister) in another town. At grade 11 she lived with her uncle's family in Yangon. She never had her breakfast and lunch in home. She seldom heard the words to come and have dinner. She felt lonely and rejected.
9. *Diagnosis of the case*: Environmental factors such as the living system and the need for love and affection affect her learning.
10. *Recommendations*: It is needed someone to be emphatic to fulfill her need for love and affection. At least her class teacher or Mathematics teacher should give individual attention to her.

Student C (3.1.2014-3.3.2016)

1. *Identification of pupil*: Name- student C; Address- Kamayut; Age- 15; Sex- male; School- Practicing High School, Yangon University of Education; Grade- 10
2. *Statement of the problem*: Student C was inferred by his parents and class teacher.
3. *Diagnostic Test Data*: He consistently failed to understand Mathematics knowledge. When diagnostic test was completed he demonstrated overall failure including lack of Mathematics conception, mixed responses, and computational skill.
4. *Interview with the student*: He reported positive attitudes on the questionnaires. His attitudes fluctuated depending on contexts. He liked some aspects of Mathematics, but he did not like the Mathematics class because of his personal conflicts with the teacher. He said that he didn't

like the Mathematics teacher and didn't really like Mathematics class. He expressed negative attitudes as saying Mathematics was boring.

5. *Student's physical condition*: He has a good health. He did not have any visual or auditory defects. There was no evidence of abnormal glandular conditions or nervous disorders. He was seldom ill.
6. *Social and Emotional Adjustment*: Student C was not engaged in classroom activities and tasks either behaviorally or cognitively. Instead, he actively resisted engaging in classroom tasks. Further, he often displayed disruptive behavior and disciplinary problems in class. He often resisted participating in class activities. He made noise by yawning or coughing loudly, read his answers in class loudly and quickly, and made faces at the teacher and other students. On several occasions, he was told by the teacher to change his seat during class or punished in the class because of his misconduct.
7. *Educational Record*: From kindergarten to grade nine he was neither a bright learner nor a slow learner.
8. *Home conditions*: His father is a lecturer of an Institute. His mother is a primary teacher. He is third child of four. He has two elder sisters who are superior to him in academic achievement. The home is a happy place in which to live and there is a little conflict.
9. *Diagnosis of the case*: His negative attitude to the Mathematics teacher, emotional adjustment, and language difficulties caused his academic failure.
10. *Recommendations*: His low score on the Mathematics test (an environmental factor or feedback factor) may influence his belief (a personal factor or affective factor) about his ability to do Mathematics. He should adapt his study habits or learning style. He should attend tuition; go to his friend's home to study and discuss.

Student D (6.6.2015-2.3.2017)

1. *Identification of pupil*: Name- student D; Address- Hlaing; Age- 15; Sex- female; School- BEHS (2), Sanchaung; Grade- 10
2. *Statement of the problem*: She was referred to researcher because her parents thought she had a deficient in Mathematics.

3. *Diagnostic Test Data:* She didn't know the basic concepts. She could not recognize new concepts in new lesson. Her class teacher said that she didn't have enough basic Mathematics skills. Most notable about her performance on Mathematics test was her difficulty in quickly remembering basic facts (multiplication tables, etc.) and working problems involving fractions.
4. *Interview with the student:* This learning disabled student was no less proud of her nor excited about Mathematics than any other student in the classroom. Her belief was that if the teacher asked her to solve a problem or to answer a question, she could do it.
5. *Student's physical condition:* She had good health. She didn't have any visual and auditory defects. She was not frequently ill.
6. *Social and Emotional Adjustment:* She got along well with her classmates and her teachers. At home she exhibited aggressive behaviors. Her class teacher said that she was not so bad in school.
7. *Educational Record:* In the primary level she got prizes for academic achievement and school sport. From grade six she stood below twentieth position.
8. *Home conditions:* The socioeconomic level was high. She is an only child. Her father was a sailor. Her mother was not a working mother. Every night she studied with her mother till midnight. Her parents didn't have consistency in her conducts. They thought that she had to be cultivated using very strict discipline and punishment at least scolding. Her mother frequently used beatings in disciplining her. She felt that the home was not a happy place because there was a great amount of conflict among three members of family.
9. *Diagnosis of the case:* She had negative attitude to her learning style or studying with her mother. She made study hours useless.
10. *Recommendations:* An attempt should be made to alter her home conditions. Because of her continued inadequacy in the Mathematics skill area, Student D needed intensive intervention in Mathematics in the context of a warm and care environment that could boost her confidence and highlight her strengths in other areas.

Student E (5.6.2015-1.3.2017)

1. *Identification of pupil:* Name- student E, Address- Sanchaung; Age- 15; Sex- male; School- Practicing High School, Yangon University of Education; Grade- 10
2. *Statement of the problem:* He was often inattentive or uninvolved in Mathematics class activities. He generally failed to achieve Mathematics understanding along the course of instruction.
3. *Diagnostic Test Data:* He maintained many of his misconceptions and failed to give Mathematics explanations.
4. *Interview with the student:* He revealed that he was constantly confused, even though he daily received one-to-one instruction at home. He thought that his teachers were not qualified in teaching methods because he could not understand. He showed negative attitude to all school subjects. He was interested in computer and internet.
5. *Student's physical condition:* At grade two he had a serious accident. According to his history, student E had missed an inordinate amount of school due to a variety of illness. He had visual defects. His glasses were for short-sightedness and long-sightedness and with cylinder.
6. *Social and Emotional Adjustment:* He was a quiet and reserved student; he used various strategies to minimize his effort in completing classroom work. He was generally unengaged academically and socially. When he occasionally interacted with his peers, these interactions involved social matters rather than academic issues. His participation in class activities was minimal, even when he was urged by the teacher and by his peers. His class teacher said he was shy, dependent, passive, and anxious.
7. *Educational Record:* He avoided thinking about Mathematics, copying another student's answer, instead of trying to make sense of what was being taught. He was passive; he did not seek help or even avoided help from the teacher and his peers. During teacher presentation, he often had an empty gaze, looked around the room, focused outside the window, or played with things. He also left some questions, notes, and homework in his exercise book unanswered, undone. He had a history of school academic failure.

8. *Home conditions*: His home had high socioeconomic level. He was the eldest of four children. His father was a businessman. His younger siblings were superior to him in academic achievement. His parents said that he needed close supervision in order to get anything done.
9. *Diagnosis of the case*: His overall performance was typical of a student in grade five. His failure was because of the lack of the basic Mathematics skills, language difficulties, and his negative attitude.
10. *Recommendations*: He needed remediation of basic academic skill deficits. His attitude had to be changed.

When tentative findings were substantiated, revised, and reconfigured three categories were constructed and named as cognitive, motivational and affective factors. These categories were abstractions derived from the data, not the data themselves. In this study, triangulation (using discussion with the parents, class teachers, and deans of the school subjects), long-term observation and clarifying researcher biases and assumptions were used to establish and increase reliability as well as internal validity of the findings.

Conclusion

It was attempted to build a general explanation that fits each of the individual cases, even though the cases varied in their details; to see processes and outcomes that occurred across many cases, to understand how they were qualified by settings conditions, and develop more sophisticated descriptions and more powerful explanations. There was to look carefully at the complex configuration of processes within each case, understand the setting dynamics, to see patterning of variables that transcends particular cases. To address the question of what factors influence the Mathematical competence of students, the researcher could identify three categories of factors the cognitive, motivational and affective factors. The most potent variable related to achievement and consequently having the greatest promise for remediation was the cognitive style of the students. The variables such as attitude, expectation, aspiration, self-confidence pointed out the importance of the affective factor. Positive feelings towards school, other students, and Mathematics can be developed if the teachers plan the right kinds of experiences for each individual. A student who enjoys success with Mathematics activities he/she understands and finds interesting will develop a positive attitude. He/she will come to value Mathematics if it

can be used to solve relevant, everyday problems. The perceived utility of Mathematics had been studied also. The perceived usefulness of Mathematics had been identified as a variable influencing the students' Mathematics learning. Students who had deficits in Mathematics failed to understand how Mathematics is useful in everyday life. And they tend to think of Mathematics as something done only in the classroom. Students appear to be influenced by significant others. Teachers, parents and peers have strong positive effects on students' attitudes toward Mathematics. It is important to examine the factor of motivation when discussing failure to persist in the study of Mathematics. The indicators for motivation in this study were students' high occupational aspirations, parents' value the importance of Mathematics learning for their children, positive attitude to Mathematics, encouraging the students, and enhancing the students' attention, relevance, confidence, and satisfaction. Thorough case studies should provide the teacher with pertinent information about the students, which will make the teacher presentation much more effective than it otherwise would be. The good results that can be secured from careful individual study of the students will, in most cases, outweigh any attendant evils.

Appendix

Outline for making a case study

Teacher making study ----- Date of investigation -----

1. Identification of pupil

Name -----

Address -----

Age -----

Sex-----

School-----

Grade-----

2. Statement of the problem

(Include an account of why the pupil is being studied)

What appears to be his or her trouble?

Is he or she a deficient in Mathematics, or what?

3. Diagnostic test data

What are his or her particular strengths and weaknesses?

If he or she is deficient in Mathematics, the tests should answer such questions as: what fundamental operations cause him or her most trouble? Does he or she know the basic concepts and acquire new concepts? What are his or her specific errors?

4. Interview with pupil

(Give significant information which the pupil has contributed about him or herself)

What does he or she think about his or her difficulty?

What are his or her attitude, outlooks, interests, plans?

What outstanding things have he/she ever done?

What does he or she do when school is out?

5. Pupil's physical condition

Has he or she any visual or auditory defects?

Is he or she malnourished?

Does he or she have adenoids or diseased teeth?

Are there evidences of abnormal glandular conditions or nervous disorders?

Is he or she frequently ill?

6. Social and emotional adjustment

Does he or she get along well with other pupils?

Does he or she get along well with his or her teachers?

Is he or she shy and retiring?

Does he or she exhibit aggressive behavior?

Has he or she been involved in any disciplinary episodes in school?

(Information can be secured from actual observation of the pupil's behavior, and by consulting with other teachers)

7. Educational record

(This should include not only his or her present scholastic attainments, but should also trace his or her academic successes and failures as far back as KG)

8. Home conditions

What is the socioeconomic level of the home?

How many siblings does he or she have?

Are they superior or inferior to him or her in academic achievement?

Is the home a happy place in which to live or is there a great amount of conflict?

What is the father's occupation?

Does the mother work?

What is the attitude of the parents towards the pupil and his or her problem?

9. Diagnosis of the case

Taking all the facts into consideration, what seem to be the chief obstacles to the pupil's normal progress?

10. Recommendations

What should be done in the light of the evidence which has been gathered?

Should he or she be given remedial instruction?

Should an attempt be made to alter certain home conditions?

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A Study on Creative Self-Efficacy of Student-Teachers from Sagaing University of Education

Wai Wai Than *

Abstract

The aim of this paper was to study the creative self-efficacy of student-teachers from Sagaing University of Education (SUOE). A quantitative descriptive survey design was used. A total of 200 student-teachers from SUOE (100 Final Year (Senior) and 100 M.Ed. students) (71 Males and 129 Females) participated in the study. Abbott (2010)'s Creative Self-Efficacy Inventory was used to investigate the participants' creative self-efficacy. The inventory includes seven sub-scales (fluency, flexibility, elaboration, originality, domain, field and personality). According to the results, student-teachers from SUOE are above average creative self-efficacy level, and among the seven sub-scales, the student gets the highest mean score in domain and the lowest mean score in originality. There is a high significant positive relationship between Creative Thinking Self-Efficacy and Creative Performance Self Efficacy. In terms of gender differences, male student-teachers were significantly higher than females in fluency, flexibility, elaboration, originality, field, personality and domain. In terms of the types of teachers, pre-service teachers were significantly higher than in-service teachers in fluency, flexibility, elaboration, originality, domain, field and personality.

Keywords: Creativity, Self-efficacy, Creative Self-efficacy

Introduction

As we all know, we are living in an ever-changing world. More and more new things and ideas are developing each day and knowledge is now something that is not just memorized. In such an age, creativity becomes the most important type of human capital. Creative person can have fun, explore and even learn a lot from his/her personal mental laboratory by taking the visualizations to the extent of reality. For this very reason, creative people are also usually good at practical humour and make a great company. Creativity also makes a larger playground for the thoughts and possibilities that can be used to carry out while executing tasks.

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Therefore, fostering creativity is one of the more intriguing education related research topics in the world. Creativity is defined as the tendency to generate or recognize ideas, alternatives or possibilities that may be useful in solving problems, communicating with others and entertaining ourselves and others (Franken, 1994).

Bandura (1995, cited in Bandura, 2006) said that there is a correlation between self-efficacy and creative performance, noting self-efficacy as an essential element to successful creative output. Self-efficacy is an individual's belief in his or her capabilities to accomplish a given task or goal. So, in 2002, Tierney and Farmer defined creative self-efficacy as "the belief one has the ability to produce creative outcomes." Therefore, creative self-efficacy has a direct effect on human creative performance. So, study creative self-efficacy becomes also important.

To be able to foster and develop creativity in children, the responsibility of teachers to possess creative self-efficacy has become more and more important. Thus, it becomes more and more interesting to know whether there is any potential that can generate children's creativity. One of the facts about this is to study the creative self-efficacy of student-teachers. So, the researcher selected student-teachers from SUOE as participants in our research as it is one of the universities which produces many teachers every year. Student-teachers who do not teach creatively to students will not make any effort in teaching which can ruin our children's creative thinking. Therefore, it becomes the most important thing for us to know whether these student-teachers from SUOE possess creative thinking self-efficacy (CTSE) and creative performance self-efficacy (CPSE) to apply in their teaching.

Creative self-efficacy was not a unidimensional construct but consisted of two factors labeled "creative thinking self-efficacy" and "creative performance self-efficacy". CTSE is an individual's belief in his or her own ability to express creative thinking. CTSE was earlier studied under the label of self-efficacy for idea-generating tasks (Gist, 1989). CPSE is an individual's belief in his or her own ability to express creative performance. It is studied in social situations (Tierney & Farmer, 2002) and associated with creativity situated in authentic contexts (Csikszentmihalyi, 1994; cited in Csikszentmihalyi, 1996). Individuals who have good creative thinking self-efficacy may or may not possess good creative performance self-efficacy and vice versa. Therefore, this study will also focus on whether

there is a relationship between the two CTSE and CPSE of the student-teachers from SUOE.

As another purpose, creative thinking is generally viewed as composed of elaboration, flexibility, fluency and originality (Torrance, 2008). Creative performance, in contrast, is generally viewed as dependent on the domain an individual works in, the field an individual works with, and that individual's personality (Csikszentmihalyi, 1996). An individual could possess all of these seven variables of CTSE and CPSE. However, in some situations, there may be individuals who are brilliant at one variable but not all; for example, an individual who is smart in fluency may not handle well in flexibility or originality or the rest of the variables. So, it becomes an important thing to consider about this fact. Student-teachers may possess the ability of one variable but they may lack the ability in another variable. Once we've found out which variable is the strongest one for student-teachers or which variable is the weakest one for them, we can guide them or give training for their needs at a later time. Therefore, this study will also focus on finding out the level in seven variables of CTSE and CPSE.

Undeniably, it is crucial for teachers to be creative and think creatively in order to develop creativity in students. Different results were obtained in studies that focus on teacher candidates' creativity levels based on gender. Duman, Gocen and Yakar (2014) and Isleyen and Kucuk (2013) found that creativity levels of teacher candidates did not show meaningful differences according to gender whereas Gok and Erdogan (2011, cited in Ulger, 2016) determined that creativity of female teacher candidates were higher. So, this study will also explore whether gender has influenced or not on creative self-efficacy of the student-teachers in SUOE.

Moreover, this study will also focus on whether teaching experience affects student-teachers' creative self-efficacy. As the participants of this study are Final Year (Senior) students and MEd students, they have already possessed teaching experiences to some extent. Therefore, the researcher would like to know whether their different teaching experiences affect their creative self-efficacy.

In conclusion, this research aimed to study the creative self-efficacy of student-teachers with the above four objectives in order to contribute to fostering creativity in teacher education to some extent.

Aims of the Study

The main aim of this study was to study the creative self-efficacy of student-teachers from SUOE.

The specific objectives can be expressed in detail as follows:

- ❖ To investigate seven variables of creative self-efficacy of student-teachers from SUOE,
- ❖ To find out the relationship between creative thinking self-efficacy (CTSE) and creative performance self-efficacy (CPSE) of the student-teachers from SUOE, and
- ❖ To compare the creative self-efficacy of student-teachers by gender and the type of teachers.

Definitions of the Key Terms

Creativity is expressed through the state-like constructs of creative performance (Csikszentmalyi, 1996) and creative thinking (Torrance, 2008).

Self-efficacy refers to a person's state-like belief in his or her own ability to actually perform specific tasks to achieve some objective given whatever obstacles may exist (Bandura, 2006).

Creative self-efficacy is a motivational state that is an individual's self-efficacy for expressing creativity (Abbott, 2010).

Method

A quantitative approach was used to implement the research objectives and a descriptive survey design was used.

Participants

This study selected 200 student-teachers from SUOE (100 Final Year (Senior) and 100 M.Ed students) (71 Males and 129 Females).

Instrumentation

Abbott (2010)'s Creative Self-Efficacy Inventory was used to investigate the participants' creative self-efficacy. The internal consistency value for creative self-efficacy inventory is 0.9.

Data Analysis and Findings

Analyzing the Creative Self-Efficacy of Student-teachers from SUOE

Table 1. Descriptive Statistics for Creative Self-Efficacy Variables of Student-teachers

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Fluency	200	6	20	13.08	2.638
Flexibility	200	4	20	13.00	2.753
Elaboration	200	7	20	13.41	2.716
Originality	200	4	20	11.15	3.063
Domain	200	8	20	14.04	2.512
Field	200	4	19	12.52	3.065
Personality	200	5	20	12.51	2.818
CTSE	200	27	73	50.64	9.638
CPSE	200	19	55	39.07	7.143
Creativity	200	51	127	89.71	16.167

As shown in Table 1, the total score for overall creativity level of student-teachers (89.71) is greater than the middle score (84) (the 50% level). Thus, student-teachers from SUOE are above average creativity level (50% level). And also, the mean score for the CTSE and CPSE of student-teachers from SUOE exceeds a little above their respective middle scores (50% level) of creativity. Therefore, it can be predicted that student-teachers from SUOE can think creatively and perform their tasks creatively.

Among the seven sub-scales, the student gets the highest mean score in domain and the lowest mean score in originality. Moreover, the mean scores for sub-scales of creative self-efficacy of student-teachers, except originality, are above their respective middle scores. Therefore, it can be assumed that student-teachers from SUOE believe they can generate adaptive ideas fluently and flexibly, and can perform creative tasks, but rarely new ideas can be generated.

The Relationship between CTSE and CPSE of Student-teachers

Table 2. Correlation Analysis for the CTSE and CPSE

	CTSE	CPSE
CTSE	1	0.853***
CTSE	0.853***	1

Note: ***Correlation is significant at the 0.001 level.

According to the results, it was found that there is a high significant positive relationship between CTSE and CPSE. So, the higher the one can think creatively, the better creative performance he can do.

Finding the Gender Differences in Creative Self-Efficacy

Table 3. Result of Independent Samples *t* test for Gender Difference in Creative Self-Efficacy

Variables	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Fluency	Male	71	14.31	5.202	198	.000
	Female	129	12.40			
Flexibility	Male	71	14.15	4.621	198	.000
	Female	129	12.36			
Elaboration	Male	71	14.25	3.338	198	.000
	Female	129	12.95			
Originality	Male	71	12.41	4.536	198	.000
	Female	129	10.45			
Domain	Male	71	14.66	2.636	198	.009
	Female	129	13.70			
Field	Male	71	13.97	5.296	198	.000
	Female	129	11.72			
Personality	Male	71	13.42	3.472	198	.001
	Female	129	12.02			

Variables	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
CTSE	Male	71	55.13	5.200	198	.000
	Female	129	48.16			
CPSE	Male	71	42.06	4.595	198	.000
	Female	129	37.43			
Creativity	Male	71	97.18	5.152	198	.000
	Female	129	85.60			

According to the results of independent samples *t* test, the male students' mean score was significantly higher than female students in CTSE, CPSE and creativity total at the 0.001 level. Moreover, male students are significantly higher than female students in fluency, flexibility, elaboration, originality, field and personality at the 0.001 level and in domain at the 0.01 level. Therefore, it can be predicted that male students perceived they were more competent in creative abilities than female students.

Finding the Differences in Creative Self-Efficacy of Student-teachers according to the Type of Teachers

Table 4. Result of Independent Samples *t* test for Difference in Creative Self-Efficacy according to Type of Teachers

Variables	Teachers	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Fluency	Pre-service	100	13.72	3.528	198	.001
	In-service	100	12.44			
Flexibility	Pre-service	100	13.73	3.880	198	.000
	In-service	100	12.27			
Elaboration	Pre-service	100	13.97	2.970	198	.003
	In-service	100	12.85			
Originality	Pre-service	100	11.70	2.599	198	.010
	In-service	100	10.59			

Variables	Teachers	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Domain	Pre-service	100	14.47	2.451	198	.015
	In-service	100	13.61			
Field	Pre-service	100	13.47	4.599	198	.000
	In-service	100	11.57			
Personality	Pre-service	100	12.96	2.256	198	.025
	In-service	100	12.07			
CTSE	Pre-service	100	53.12	3.765	198	.000
	In-service	100	48.15			
CPSE	Pre-service	100	40.90	3.728	198	.000
	In-service	100	37.25			
Creativity	Pre-service	100	94.02	3.903	198	.000
	In-service	100	85.40			

According to the results of independent samples *t* test, the pre-service teachers' mean score was significantly higher than in-service teachers in CTSE, CPSE and creativity total at the 0.001 level. Moreover, pre-service teachers are significantly higher than in-service teachers in fluency, flexibility and field at the 0.001 level and in elaboration and originality at the 0.01 level, and in domain and personality at the 0.05 level. Therefore, it can be predicted that pre-service teachers are more competent in creative abilities than in-service teachers.

Conclusions and Suggestions

This study was taken with the aim of investigating the creative self-efficacy of pre-service teachers from SUOE, finding the relationship between CTSE and CPSE of participants, and comparing their creative self-efficacy by gender and then by the type of teachers.

Firstly, among the seven sub-scales, the student gets the highest mean score in domain and the lowest mean score in originality. Moreover, the mean scores for sub-scales of creative self-efficacy of student-teachers, except originality, are above their respective middle scores. Therefore, it

can be assumed that student-teachers from SUOE believe they can generate adaptive ideas fluently and flexibly, and can perform creative tasks, but rarely new ideas can be generated.

Related with originality, it means generating novel ideas before others. It is the most difficult task among creative thinking activities. That may be the cause why student-teachers from SUOE are the weakest in originality among the seven sub-scales of creative self-efficacy. In order to improve their originality, teachers from SUOE should create the environment in which the students can engage in brainstorming ideas and opportunities to test one's ideas for demonstrating originality. Students should also not fear failure and must always notice their creative work.

Secondly, there is a high significant positive relationship between CTSE and CPSE. So, it was assumed that the higher the one can think creatively, the better creative performance he can do.

According to the literature, the one with high CPSE can show innovative performance, tackle challenging tasks creatively and will contribute to their environment with these skills. In order to improve CPSE, teachers should create more idea-generating tasks which challenge the students' mind to apply creative thinking.

As the third objective, the male students' mean score was significantly higher than female students in CTSE, CPSE and overall creativity at the 0.001 level. Moreover, male students are significantly higher than female students in fluency, flexibility, elaboration, originality, field and personality at the 0.001 level and in domain at the 0.01 level. Therefore, it can be predicted that male students believe more in their creative abilities than female students.

According to the literature, exchange of ideas with others, divergent thinking and extraversion are positive indicators of creativity and fear, stereotyping and introversion are negative indicators of creativity. The reason why males are more dominant than females in creative self-efficacy may be because of the fact that girls are more likely to show more fear, stereotype and introvert behavior than males, and also boys are more active in flexible exchange of ideas, divergent thinking and showing extrovert behavior than females. By considering this difference, teachers from SUOE should provide more support, encouragement, activities requiring exchange of ideas, divergent thinking to all students.

Finally, the pre-service teachers' mean score was significantly higher than in-service teachers in CTSE, CPSE and creativity total at the 0.001 level. Moreover, pre-service teachers are significantly higher than in-service teachers in fluency, flexibility and field at the 0.001 level and in elaboration and originality at the 0.01 level, and in domain and personality at the 0.05 level. Therefore, it can be predicted that pre-service teachers believe more in their creative abilities than in-service teachers.

From the literature, exchange of ideas with others, support and encouragement are positive indicators of creativity and lack of time, fear and stereotyping are negative indicators of creativity. It also shows that self-efficacy decreases with increasing age for adults and with introducing newly real work experience. Thus, the reason why pre-service teachers are more dominant than in-service teachers in creative self-efficacy may be in-service teachers' lack of time to exchange ideas, less support & encouragement than pre-service teachers. Moreover, in-service teachers are older adults than pre-services and most of them are newly appointed teachers. In order to handle this decline of creative self-efficacy, schools and administrators should provide more support, encouragement, activities requiring creative talents concerned with their respective subjects.

In conclusion, it is hoped that the results of this study may be useful for teachers and students in creating creativity-fostering learning environment for teacher education to some extent.

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Attitude towards Mathematics and Mathematics Anxiety of Grade 10 Students

May Me Htain Win¹ & Tin Mar Naing²

Abstract

The main purpose of this study was to investigate the attitude towards Mathematics and Mathematics anxiety of Grade 10 students. A total of 844 Grade 10 students (male = 393, female = 451) who were randomly chosen from selected schools in Meiktila Township, Mandalay Region participated. Mathematics Attitude Questionnaire developed by Fennema and Sherman (1976) was used and Cronbach's alpha was .852. Revised Mathematics Anxiety Rating Scales (RMARS) developed by Baloglu and Zelhart (2007) was used and Cronbach's alpha was .917. In the analysis of data, descriptive statistics and independent sample *t* test were used in this study. According to the descriptive statistics most of the students in Meiktila Township have high Mathematics attitude and moderate Mathematics anxiety. The independent sample *t* test showed that Mathematics attitude and Mathematics anxiety of female students was higher than that of male students. Mathematics attitude of combination 7 students was higher than that of combination 1 students and Mathematics anxiety of combination 1 students was higher than that of combination 7 students. Mathematics attitude of urban students was higher than that of rural students and Mathematics anxiety of rural students was higher than that of urban students.

Keywords: attitude, mathematics, attitude towards mathematics, mathematics anxiety

Introduction

Proficiency in languages, science, and mathematics is seen as an essential precursor to success in modern society. Mathematical thinking is important for all members of a modern society as a habit of mind for its use in the work place, business and finance; and for personal decisions making. Today's world is the science oriented world and, therefore, foundation of this world is mathematics (Mata, Monteiro & Peixoto, 2012).

The knowledge of mathematics is an essential tool in our society (Baroody, 1987). It is a tool that can be used in our society (Baroody, 1987). Due to this, mathematics has been considered as one of the most important core subject in a school curriculum. More mathematics lessons

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are likely to be taught in school and colleges throughout the world than any other subject (Orton, Orton & Frobisher, 2004).

Attitude is based on value and belief, as well as varying degree of factual knowledge (Mullis et al., 2001). Interest and attitude in the subject are the special predictors for the students' participation and success in the subject. Students' success in mathematics depends upon attitude towards Mathematics. Positive attitude towards mathematics leads students towards success in mathematics. Attempt to improve attitude towards mathematics at lower level provides base for higher studies in Mathematics (Ma & Xu, 2004).

Ainley and Fordham (1991) contributed for the excellence of school life and its relationship with other features. Teachers of Mathematics tried to find out relationship of attitude with student's performance in Mathematics during the last decade. They came to know that teaching learning process of Mathematics depends upon the positive attitude towards Mathematics.

One of the most interesting aspects of mathematics anxiety is the range of people it affects. Mathematics anxiety is an important educational issue. Students that have high mathematics anxiety also have negative attitudes toward their potential success in mathematics. Many adults capable of learning mathematics are blocked from growth and opportunity because of their fear of mathematics. Tobias would argue that it is a fear of nerve not intellect that causes the problem. Some people believe they need a "mathematical mind" to do mathematics. If they believed they could do it, had some success, their attitude would change (Biller, 1996).

Students with high anxiety did better when less mathematical approaches and more visual approaches to problem solving were taught (Gabel, 1983; cited in Biller, 1996). The highly anxious student performs poorer on mathematics performance measures and is the least confident in mathematics skills. Results show that high test anxiety in mathematics is experienced by both men and women. It has been found that students with negative attitudes exhibit a high degree of mathematics anxiety. They need to change their attitude toward mathematics (Biller, 1996).

Some students do not like mathematics simply for the reason that they are scared of it and do not feel like they are able to understand the concepts. The same students who have this fear of mathematics do not try

as hard to understand and finish their homework as students who do not have this fear. The students who have a fear of mathematics assume that if they do not understand the homework the first time, they will never understand it. They set themselves up for failure before they even attempt to succeed (Smith, 2004).

Today, the needs of society require a greater need for mathematics. Mathematics must be looked upon in a positive light in order to reduce Mathematics anxiety. Therefore, teachers must re-examine traditional teaching methods which often do not match the students' learning styles and skills needed to be productive in society. Lessons must be presented in a variety of ways. Parents should also maintain an active role when encouraging their children to incorporate Mathematics into their daily routine. It is essential that educators and parents work together to assure that every child is learning that Mathematics is important, relevant, and fun so that they can learn the Mathematics skills that they need to succeed (Rossnan, 2006).

Changing attitudes about mathematics will require support from parents, teachers and society. If negative attitudes are not changed, students' performance, college and career choices will be limited (Shields, 2006). Mathematics anxiety is a reality for many students. Educators should be knowledgeable about its causes and provide supportive learning communities that assist students in overcoming it (Barnes, 2006). Parents and teachers can use to encourage positive attitude towards mathematics and reduce mathematics anxiety among struggling mathematics learners (Kiss & Vulovic, 2017).

Thus, studying mathematics attitude of students is essential in the Educational research field. Since mathematics attitude of students' influences on their mathematics anxiety and performance, investigating the relationship between attitude towards mathematics and mathematics anxiety of students is an inevitable now.

Aims of the Study

The main aim of this study is to investigate the attitude towards Mathematics and Mathematics anxiety of Grade 10 students. The specific objectives of this study are as follows;

1. To compare attitude towards Mathematics of Grade 10 students by gender, subject combination and school location
2. To compare Mathematics anxiety of Grade 10 students by gender, subject combination and school location
3. To find out the relationship between attitude towards Mathematics and Mathematics anxiety of Grade 10 students
4. To investigate whether attitude towards Mathematics can predict Mathematics anxiety of Grade 10 students

Definitions of Key Terms

Attitude - Attitude is the positive or negative degree of affect associated with a certain subject (McLeod, 1992).

Mathematics – Mathematics is the study of basic number operations and its relationships (Siebers, 2015).

Attitude towards Mathematics - Attitude towards Mathematics is a positive or negative feeling towards Mathematics (McLeod, 1994).

Mathematics anxiety - Mathematics anxiety is the feeling of tension and anxiety that impair the ability to manipulate numbers and solve mathematical problems in a wide variety of ordinary life and academic situations (Richardson & Suinn, 1972).

Materials and Method

Participants

Table 1. Number of Grade 10 Students from Each Selected Schools in Terms of Gender

No.	Schools	Number of selected students		
		Male	Female	Total
1	B.E.H.S (1)	50	56	106
2	B.E.H.S (2)	52	54	106
3	B.E.H.S (3)	50	60	110
4	B.E.H.S (4)	48	52	100
5	B.E.H.S (5)	49	70	119
6	B.E.H.S (6)	41	41	82
7	B.E.H.S (7)	51	56	107
8	B.E.H.S, Tawma	52	62	114
Total		393	451	844

Method

The quantitative research design and the descriptive survey method were used in the present study.

Instrumentation

Attitude towards Mathematics: The Mathematics Attitude Questionnaire was developed by Fennema and Sherman (1976). The scale consists of four subscales: a confidence scale, the Mathematics usefulness scale, a scale that measures mathematics as a male domain and a teacher perception scale. Six of them measure a positive attitude and six measure a negative attitude. This is 4-point Likert scale questionnaire consisting of 47 items.

Mathematics Anxiety: Revised Mathematics Anxiety Rating Scales (RMARS) developed by Baloglu and Zelhart (2007) was used. It has 25-items, has three subscales: Mathematics Test Anxiety (15 items), Numerical Task Anxiety (5 items), and Mathematics Course Anxiety (5 items). This

Questionnaire was examined four-point Likert Scale, strongly disagree, disagree, agree and strongly agree.

Findings

Attitude towards Mathematics in Grade 10 Students

Descriptive Statistics of Attitude towards Mathematics

Table 2. Descriptive Statistics for Mathematics Attitude Scores

Variable	<i>N</i>	Min	Max	Mean	<i>SD</i>
Mathematics Attitude	844	94	180	147.97	12.938

According to Table 2, sample mean 147.97 is greater than theoretical mean 117.5. Therefore, participants' Mathematics attitude was satisfactory.

Comparison of Mathematics Attitude of Students by Gender

Table 3. Result of Independent Samples *t* test for Mathematics Attitude by Gender

Variable	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
MA	Male	393	144.75	13.078	-6.927***	842	.000
	Female	451	150.77	12.153			

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

As mentioned in Table 3, the independent samples *t* test was statistically significant in Mathematic attitude and then the effect size ($d = 0.5$) was medium or typical effect size. Therefore, Mathematics attitude of female students was better than that of male students.

Comparison of Mathematics Attitude of Students by Subject Combination

Table 4. Result of Independent Samples *t* test for Mathematics Attitude of Students by Subject Combination

Variable	Subject	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
MA	Combination 7	402	150.33	13.355	5.144***	842	.000
	Combination 1	442	145.81	12.169			

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

As mentioned in Table 4, the result of independent samples *t* test indicated that there was significant difference between combination 7 and combination 1 students in Mathematics attitude (MA). Therefore it can be said that the Mathematics attitude of students who took the combination 7 were significantly higher than that of students who took the combination 1. The effect size ($d = 0.4$) was small or smaller than typical effect size.

Comparison of Mathematics Attitude of Students by School Location

Table 5. Result of Independent Samples *t* test for Mathematics Attitude of Students by School Location

Variable	Locality	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
MA	Urban	422	150.09	12.882	4.836***	842	.000
	Rural	422	145.84	12.657			

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

As mentioned in Table 5, there was significant difference in Mathematics attitude between students from urban and rural schools. The effect size ($d = 0.17$) was small or smaller than typical effect size.

Mathematics Anxiety in Grade 10 Students

Descriptive Statistics of Mathematics Anxiety

Table 6. Descriptive Statistics for Mathematics Anxiety Scores

Variable	<i>N</i>	Min	Max	Mean	<i>SD</i>
Mathematics Anxiety	844	28	95	61.15	12.776

As shown in Table 6, the maximum score of students in Mathematics anxiety was 95, minimum score was 28 and standard deviation was 12.776. The mean score was 61.15. Therefore it can be said that the students was suffered Mathematics anxiety.

Comparison of Mathematics Anxiety by Gender

Table 7. Result of Independent Samples *t* test for Mathematics Anxiety by Gender

Variable	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
MA	Male	393	59.31	13.098	-3.942***	842	.000
	Female	451	62.76	12.280			

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

As mentioned in Table 7, there was a significant difference between male and female students in Mathematics anxiety at 0.001 level. Therefore, female students were higher than that of male students in Mathematics anxiety. The effect size ($d = 0.27$) was medium or typical effect size. The effect size ($d = 0.11$) was small or smaller than typical effect size.

Comparison of Mathematics Anxiety of Students by Subject Combination

Table 8. Result of Independent Samples *t* test for Mathematics Anxiety of Students by Subject Combination

Variable	Subject	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
MA	Combination 7	402	59.63	13.480	-3.302***	842	.001
	Combination 1	442	62.54	11.948			

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

As mentioned in Table 8, the result of independent samples t test indicated that there was significant difference between combination 7 students and combination 1 students with respect to their Mathematics anxiety at the 0.001 level. The Mathematics anxiety of students who took the combination 1 was higher than that of students who took the combination 7 with a mean difference of 2.907. Therefore, combination 1 students were suffered Mathematics anxiety than combination 7 students. The effect size ($d = 0.11$) was small or smaller than typical effect size.

Comparison of Mathematics Anxiety of Students by School Location

Table 9. Result of Independent Samples t test for Mathematics Anxiety of Students by School Location

Variable	Locality	N	Mean	SD	t	df	p	MD
MA	Urban	422	61.03	13.789	-.275	842	.784	-0.24
	Rural	422	61.27	11.691				

As mentioned in Table 9, the result of independent samples t test indicated that, there was no significant difference in Mathematics anxiety between students from urban and rural schools.

Conclusion and Discussion

According to the result of descriptive analysis for Mathematics attitude, the total mean score for attitude towards Mathematics was 147.97 and it was more than the theoretical mean score (117.5). It can be said that most of the students in Meiktila Township had high Mathematics attitude.

Then, the result of descriptive analysis for Mathematics anxiety described that the mean score for overall Mathematics anxiety was 61.15. The theoretical mean score for Mathematics anxiety was 62.50. It meant that students in Meiktila Township have little suffered Mathematics anxiety.

According to the independent samples t test result for Mathematics attitude by gender, there was significant difference between male and female students in overall Mathematics attitude ($t = -6.927$, $p < .001$). The mean score of female students exceeds 6.019 points than that of the male students. The effect size ($d = 0.5$) was medium or typical effect size. It can be concluded that the Mathematics attitude of female students was better than of the male students.

Then, the independent samples t test result for Mathematics anxiety stated that there was significant difference between male and female students in overall Mathematics anxiety ($t = -3.942, p < .001$). The mean score of female students was more than that of the male students with mean difference 3.446 points. The effect size ($d = 0.27$) was medium or typical effect size. Mathematics anxiety of female students was more than that of the male students.

The result of independent samples t test for comparing Mathematics attitude by subject combination, there was a significant difference between combination 7 and combination 1 students in overall Mathematics attitude ($t = 5.144, p < .001$). The mean scores of combination 7 students exceed 4.519 points than that of the combination 1 students. The effect size ($d = 0.4$) was small or smaller than typical effect size. It can be said that the Mathematics attitude of combination 7 students was higher than that of the combination 1 students.

According to the independent samples t test result for comparing Mathematics anxiety by subject combination, there was significant difference between combination 7 and combination 1 students in overall Mathematics anxiety ($t = -3.302, p < .001$). The mean score of combination 1 students exceed 2.907 than that of the combination 7 students. The effect size ($d = 0.11$) was small or smaller than typical effect size. It can be said that Mathematics anxiety of combination 1 students was higher than that of the combination 7 students. Therefore it can be concluded that combination 1 students were suffered Mathematics anxiety.

The result of independent samples t test for comparing Mathematics attitude by school location stated that there was significant difference between urban and rural students in overall Mathematics attitude ($t = 4.836, p < .001$). The mean score for Mathematics attitude of urban students was greater than that of the rural students with mean differences 4.251 points. The effect size ($d = 0.17$) was small or smaller than typical effect size. It can be concluded that Mathematics attitude of urban students was better than that of the rural students.

According to the independent samples t test result for comparing Mathematics anxiety by school location, there was no significant difference between urban and rural students in overall Mathematics anxiety ($t = -.275$).

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Curiosity and Subjective Well-being of Grade 10 Students from Kyaukpadaung Township

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Abstract

The aim of this study was to examine curiosity and subjective well-being of Grade 10 students from Kyaukpadaung Township. Descriptive survey method was used for this study. By using random sampling technique, a total of 943 students were selected from ten schools in Kyaukpadaung Township. Curiosity and Exploration Inventory 1 and 2 developed by Kashdan, T. B. (2004, 2009) which consists of 11 items and Oxford Happiness Questionnaire (OHQ) developed by Hills and Argyle (2002) which consists of 29 items were used. According to descriptive statistics, both curiosity and subjective well-being of Grade 10 students from Kyaukpadaung Township was satisfactory. Based on the results of independent samples *t* test, female students are more curious than male students, combination 7 students had better curiosity than combination 1 students and students from urban had greater curiosity than those from rural. According to independent samples *t* test, there were no significant difference in subjective well-being by gender and subject combination but by locality, students from rural are happier than those from urban. The Pearson Product-Moment Correlation result revealed that a positive significant relationship ($r = .348, p < .01$) was found between curiosity and subjective well-being of students. Thus it can be interpreted that with the increase in curiosity, there will be increase in subjective well-being and vice versa.

Keywords: curiosity, well-being, subjective well-being

Introduction

Curiosity is a powerful force. Humans as adaptive species in their environment seem to have cognitive architecture designed to resolve cognitive dissonance through physiological-emotional arousal. Thus, curiosity has a value in human survival. The disequilibrium in cognition typically induces human exploratory behavior to look for answers in the midst of uncertainty and doubt. It continues to play a critical role in human inventions and discovery.

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Psychologists have long struggled to provide a formal account of curiosity. It has been defined as an inconsistency or gap in knowledge and has been suggested to arise when an animal is discomfited by uncertainty or a lack of information (Berlyne, 1960).

The curiosity is more likely to stay in education for longer. A neurological study has shown that curiosity makes the brain more receptive for learning and that as one learns, he enjoys the sensation of learning (Stenger, 2014). A hungry mind isn't the only trait one needs to do well at school but it is the best single predictor of achievement, allied as it is with the other two quantifiably important traits; intelligence and conscientiousness. Students are far more interest in learning about real world objects than about ideas presented in the abstract.

Additionally, curiosity is positively linked to self-directed learning and human intellectual achievement. It is that curiosity-induced teaching is recommended for classroom practice, bearing in mind that curiosity-producing techniques work best in classroom situation when they stimulate optimal arousal level.

The concept of human well-being is important but difficult to study empirically. One approach is to listen to what human beings say. Well-being includes both objective and subjective well-being. Subjective well-being (SWB) is defined as 'a person's cognitive and affective evaluations of his or her life' (Diener, Lucas, & Oshi, 2002).

The emphasis in life wide education is on raising individual's self-awareness of the way they are living their life and engaging with everyday situations within it in order to achieve the things that they value and find meaningful and significant. The approach also emphasizes the functioning they need to develop in order to achieve the things they value. All these things are likely to be important to individual's sense of well-being. Viewed from this perspective a life wide educational approach is concerned with nurturing and improving an individual's sense of subjective well-being.

Although, it is difficult to infer whether curiosity influences subjective well-being or vice versa, i.e., it could be that their relationship is reciprocally causal: curiosity can positively influence subjective well-being, but subjective well-being can further increase students' curiosity. The current study seeks to make a unique contribution by establishing if there is a relationship between curiosity and subjective well-being.

Aim of the Study

The main aim of the study is to study curiosity and subjective well-being of Grade 10 students from Kyaukpadaung Township (2018-19 AY).

Research Questions

1. Are there any significant differences in students' curiosity and subjective well-being by gender, subject combination and locality?
2. Is there any significant relationship between curiosity and subjective well-being of students?

Definitions of Key Terms

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).

Well-being: Well-being is a state of wellness, which has physical, social, and mental/psychological dimensions (Colombo,1984).

Subjective well-being: Subjective well-being (SWB) is people's emotional and cognitive evaluations of their lives, including what lay people call happiness, peace, fulfillment, and life satisfaction. (Diener, 2002).

Review of Related Literature

Berlyne's Theory of Curiosity: The scientific study of curiosity was mainly launched by D. E. Berlyne. In 1960, Berlyne presented a specific theory of curiosity in his book entitled: Conflict, Arousal, and Curiosity. Berlyne's conceptualization of curiosity has been widely accepted.

Basically, Berlyne (1960) associated curiosity drive with a state of arousal induced by collative properties of stimuli. "Collative" was the term that Berlyne used to represent novelty, uncertainty, conflict, and complexity—four of the properties of stimuli. The resultant behavior of exploration of such stimuli, then, reduced the curiosity drive. Berlyne emphasized: the chances of a particular stimulus pattern in the contest for control over behavior depend, among other properties; on how novel the pattern is, to what extent it arouses or relieves uncertainty, to what extent it arouses or relieves conflict, and how complex it is.

Berlyne's theory of curiosity specifically differentiates between perceptual and epistemic curiosity. Perceptual curiosity refers to states of high arousal that can be relieved by specific exploration and in which; therefore, specific exploratory responses are likely to occur (Berlyne, 1960).

Epistemic curiosity refers to responses through which knowledge is acquired. There are three main classes of epistemic responses and they are:

1. observation, which includes responses which place the subject in contact with external situations and which nourish the learning process,
2. thinking, which includes productive or creative thinking and which puts the individual in permanent possession of new knowledge and
3. consultation, which exposes an individual to verbal stimuli from others and includes asking questions, writing letters, and reading (Berlyne, 1960).

Ed Diener's Subjective Well-being Theory: In 2002, Ed Diener presented a specific theory of subjective well-being in his book entitled *Personality, Culture, and Subjective well-being: Emotional and Cognitive Evaluations of Life*.

He described that subjective well-being (SWB), people's emotional and cognitive evaluations of their lives, includes what lay people call happiness, peace, fulfillment, and life satisfaction. The cognitive element refers to what one thinks about his or her life satisfaction in global terms (life as a whole) and in domain terms (in specific areas of life such as work, relationships, etc.) The affective element refers to emotions, moods and feelings. Affect is considered positive when the emotions, moods and feelings experienced are pleasant (e.g. joy, elation, affection etc.) Affect is deemed negative, though, when the emotions, moods and feelings experienced are unpleasant (e.g. guilt, anger, shame etc.). A person who has a high level of satisfaction with their life, and who experiences a greater positive affect and little or less negative affect, would be deemed to have a high level of SWB [or in simpler terms, be very happy].

The field of subjective well-being (SWB) comprises the scientific analysis of how people evaluate their lives—both at the moment and for longer periods such as for the past year. These evaluations include people's emotional reactions to events, their moods, and judgments they form about

their life satisfaction, fulfillment, and satisfaction with domains such as marriage and work. Thus, SWB concerns the study of what lay people might call happiness or satisfaction.

Research Design and Method

This research was conducted by using Descriptive research design and Survey method.

Sample

A total of 943 students (male=467 and female=476) were randomly selected from Kyaukpadaung Township.

Instruments

In order to obtain the required data, Curiosity and Exploration Inventory 1 and 2 developed by Kashdan, T. B. (2004, 2009) which consists of 11 items and Oxford Happiness Questionnaire (OHQ) developed by Hills and Argyle (2002) which consists of 29 items were used.

Findings

In the present study, descriptive statistics was used to analyze minimum and maximum scores, mean and standard deviation of students' curiosity. The result was shown in Table 1.

Table 1. Descriptive Statistics for Grade 10 Students' Curiosity

Variables	N	Minimum	Maximum	Mean	SD
Curiosity	943	14	44	33.12	4.343

According to Table 1, it was found that the level of curiosity for Grade 10 students in Kyaukpadaung Township was satisfactory as the observed mean score 33.12 was higher than theoretical mean score 27.5.

Table 2. Result of Independent Samples *t* test for Students' Curiosity by Gender

Variable	Gender	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Curiosity	Male	32.73	4.457	-2.708**	941	.007
	Female	33.50	4.200			

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

The result of t test stated that there was significant gender difference in curiosity of students at 0.01 level. It meant that female students had better curiosity than that of male students.

Table 3. Result of Independent Samples t test for Students' Curiosity by Subject Combination

Variable	Combination	Mean	SD	t	df	p
Curiosity	Combination 1	32.63	4.767	-2.672**	941	.008
	Combination 7	33.43	4.028			

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

The result of t test stated that curiosity across subject combination was significantly different at 0.01 level. Therefore, combination 7 students were more curious than combination 1 students.

Table 4. Result of Independent Samples t test for Students' Curiosity by School Locality

Variable	Locality	Mean	SD	t	df	p
Curiosity	Rural	32.57	4.407	-2.649**	941	.008
	Urban	33.37	4.429			

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

According to the result of t test, curiosity across locality was significantly different at 0.01 level. Therefore, students from urban area were more curious than students from rural area.

Table 5. Descriptive Statistics for Grade 10 Students' Subjective Well-being

Variables	N	Minimum	Maximum	Mean	SD
Subjective Well-being	943	56	108	81.29	9.356

According to Table 5, it was found that the level of subjective well-being for Grade 10 students in Kyaukpadaung Township was satisfactory as the observed mean score 81.29 was higher than theoretical mean score 72.5.

Table 6. Students' Subjective Well-being by Gender

Variable	Gender	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Subjective Well-being	Male	81.12	9.077	-.551	941	.582
	Female	81.45	9.628			

The result of *t* test stated that subjective well-being across students' gender was not significantly different.

Table 7. Result of Independent Samples *t* test for Students' Subjective Well-being by Subject Combination

Variable	Combination	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Subjective Well-being	Combination 1	81.58	9.746	1.230	941	.219
	Combination 7	80.83	8.692			

The result of *t* test stated that subjective well-being across subject combination was not significantly different.

Table 8. Result of Independent Samples *t* test for Students' Subjective Well-being by School Locality

Variable	Locality	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Subjective Well-being	Rural	82.29	8.874	2.232*	941	.026
	Urban	80.83	9.540			

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

The result of *t* test stated that there was locality difference in subjective well-being of students. It meant that rural students are happier than urban students.

Table 9. Correlation between Curiosity and Subjective Well-being of Grade 10 Students

Variables	Curiosity	Subjective Well-being
Curiosity	-	
Subjective Well-being	.348**	-

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

It was found that there was a significant positive relationship between curiosity and subjective well-being of students ($r = .348, p < .01$), which indicate that as curiosity increase, subjective well-being increase accordingly. It can be interpreted that students who greater curiosity will be better in subjective well-being.

Conclusions, Discussion and Recommendations

The main purpose of this research was to investigate curiosity and subjective well-being (happiness) of Grade 10 students from Kyaukpadaung Township.

Gender Differences in Curiosity and Subjective Well-being. According to the result from mean comparison of students' curiosity by gender, it was found that female students are more curious than male students. This may be that females have naturally intrinsic motivation to seek out knowledge about places and facts about people. Giambra et al. (1992) found that women demonstrated much greater curiosity for people than men, who were curious for things. This finding is consistent with the researches of Gibson, Carolyn E (2014) and Giambra et al (1992) in which there were significant difference in curiosity and female are more curious than male.

From mean comparison of students' subjective well-being by gender, there was no significant difference in subjective well-being by gender. Perhaps male and female students have the same emotions about their daily routines and experiences. It may be both have required adaptation or aspiration level which is influenced by past experience, comparisons with others and personal values and also perceive the same degree of fulfillment required to produce satisfaction from parents, teachers and society. This finding is consistent with the research of Hyde (2014) in which there was no significant difference in subjective well-being by gender.

Differences in Curiosity and Subjective Well-being by Subject Combination. When comparison of students' curiosity by subject combination was conducted, the result indicated 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. Thus, practical activities should also be created for combination 1 students in order to improve their curiosity.

According to the result from mean comparison of students' subjective well-being by subject combination, there was no significant difference for students' subjective well-being according to subject combination. It may be because both, combination 1 and combination 7 students have the same evaluation about their lives – both at the moment and for longer periods such as for the past year. They perceive equally people's emotional reactions to events, their moods, and judgments they form about their life satisfaction, fulfillment and satisfaction with domains such as achievement and academic tasks.

Differences in Curiosity and Subjective Well-being by Locality. From mean comparison of students' curiosity by school locality, it can be interpreted that students from urban had greater curiosity than those from rural. This may be because in urban area, there are a lot of things to be curious and many opportunities to find knowledge, information and ideas. Thus, in order to improve curiosity of students from rural, parents and teachers need to encourage children to raise questions and seek answers and to wonder about the things around them and demonstrate openness to new information and the acquisition of new knowledge.

When comparison of students' subjective well-being by school locality was conducted, it was found that students from rural are happier than those from urban. This may be because parents from rural have less demand about their children than those from urban. Students from rural have more chances for leisure time and to play with friends and thus they feel warm-hearted and happy about their lives than those from urban that have no time for leisure because of tuition, bordering school and night study. In order to improve subjective well-being of students from urban, parents and teacher should reduce their demands and expectations about their children and create positive warm-hearted environment for them.

Relationship. The result showed that curiosity and subjective well-being of students was positively low correlated ($r = .348, p < .01$). As the correlation was positive, it can be interpreted that with the increase in curiosity, there will be increase in subjective well-being and vice versa. This finding was consistent with the findings of studies conducted by Kaczmarek et al., (2014) and Kirdok and Bolukbasil (2018). In the study of senior university students, Kirdok and Bolukbasil (2018) found that there was a positive correlation ($r = .35$) between curiosity and subjective well-being. Through the web-based study in Poland, Kaczmarek et al., (2014) reported that there was also a positive correlation ($r = .45$) between curiosity and subjective well-being of adults.

In short, curiosity is an aspect of intrinsic motivation that has great potential to enhance student learning. Curious individuals may pay fully attentions onto subjects (intrinsically interesting to them) and are becoming positive thoughts and increasing happiness (Nakamura and Csikszentmihalyi, 2002). Thus, teaching happiness in school can increase satisfaction with school and synergy between learning and positive emotion. The combination of curiosity and happiness can lead to a generation of individuals who have a good sense of well-being, an interest in the world around them, and the ability to solve problems. A society in which individuals feel a sense of interest and happiness has a greater chance of being a harmonious one.

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Parent and Peer Attachment and Assertiveness of Grade 10 Students in Budalin Township

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Abstract

The purpose of this study was to investigate parent and peer attachment and assertiveness of Grade 10 students in Budalin Township. Descriptive research design and survey method were used. A total of 700 Grade 10 students (350 males and 350 females) were selected by simple random sampling technique. As the instruments, Inventory of Parent and Peer Attachment developed by Greenberg and Armsden (1987) and Assertiveness Questionnaire developed by Gaumeret al, (2016) was used. According to research findings, there was a significant difference in parent attachment by gender. Female students had better parent attachment than male students. It was also found that students at private schools had higher parent attachment but lower peer attachment than those at public schools. However, there were no significant differences in assertiveness by both gender and school type. Next, the results revealed that there were significant positive correlations among parent and peer attachment and assertiveness ($p < .01$). Finally, it was found that 16.4% of students' assertiveness could be predicted from their parent and peer attachment. The findings of this study illustrated the salient points concerning attachment and assertiveness, and gave parents and teachers the ideas how to develop students' assertiveness skill.

Keywords: attachment, parent attachment, peer attachment, assertiveness

Introduction

The most important elements in social networks and social support systems alike are relationships that constitute affectional bonds, and particularly those with attachment components that provide a sense of security (Ainsworth, 1985). The experience of attachment is the first crucial link between sociological and psychological understanding and is itself the product of a culture, and a determinant of how that culture will be reproduced in the next generation (Fleming, 2008).

Adolescents with secure attachment had more control on their emotions and better adjustment than those with insecure attachment

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(Cooper et al., 1998, as cited in Parsa et al, 2014). Adolescents who have close relationship with their parents are less likely to have social and psychological problems and adolescents who are carefully looked after by their parents, spend time with their family and get support from it, are less likely to have friends that have bad influence on them (Aufseeser, Jekielek & Brown, 2006, as cited in Gunnarsdóttir, 2014).

Since peers strongly influence the young adolescents, youths will attempt new behaviors practiced and modeled by their peers and significant others (Gazda, 1989, as cited in Cecen & Zengel, 2009). If group members provide good models for assertive behaviour, they can learn assertive behaviour from their peers easily. Therefore, secure attachment to peers facilitates the development of social skills such as assertion and empathy.

In today's world, one of the most important issues of human beings is social communication skill, like assertiveness. A person who has the ability to be assertive will insist on their reasonable demands and can defend themselves against any opposition (Bagherian & Mojambari, 2016). Assertiveness has importance in increasing self-confidence, openness, self-esteem, judgment, conscious and other rational abilities. Therefore, improving high school students' understanding of assertiveness through guided practice helps them seek assistance and supports, as well as future educational and career opportunities (Erickson & Noonan, 2013).

Therefore, it is important for adolescents to have secure attachment to their parents, teachers and peers so that they can develop assertive behaviors in any society throughout the lifespan. Since the school is one of the institutions of the social environments, the school teachers need to nurture the students as energetic citizens with acceptable social skills. Hence, this study stresses to exhibit the sound evidence of parent and peer attachment and assertiveness of Grade 10 students in Budalin Township.

Aim of the Study

The main aim of this study is to investigate parent and peer attachment and assertiveness of Grade 10 students in Budalin Township. The specific objectives are;

- To find out parent and peer attachment and assertiveness of Grade 10 students

- To examine parent and peer attachment of Grade 10 students by gender and school type
- To examine assertiveness of Grade 10 students by gender and school type
- To explore the relationships among parent and peer attachment and assertiveness of Grade 10 students

Related Literature Review

John Bowlby's Attachment Theory

John Bowlby developed his attachment theory over 20 years after first reporting on the link between maternal deprivation and the later delinquency of male children (Bowlby, 1944). Attachment theory asserts that the earliest attachment relationships are formed between the infant and caregiver, as the helpless infant is completely dependent upon the caregiver for its survival (cited in Thomas, 2011). According to Bowlby, attachment behavior is evolutionary adaptive behavior, because it has ensured protection from predators in environment of evolutionary adaptedness.

Secure attachment is believed to be of vital importance to individuals because it empowers them to simultaneously experience a sense of independence and relatedness to others. Secure attachment can be displayed during infancy as the ability to use the parent as a secure base from which the infant can move away without anxiety to explore and learn about the surrounding environment (Bowlby, 1978, as cited in Thomas, 2011). The secure base provides the infant with security, confidence, and safety for exploration. Using this logic, a child who has a secure attachment to a responsive caregiver is likely to have a working model that establishes a belief that others will be there for him or her. He theorized that these early working models lay the foundation for future relationships expectations.

Armsden and Greenberg (1987) perceived the attachment construct in terms of three factors: (1) trust, (2) communication, and (3) alienation. All three factors contribute to the quality of attachment, either positively or negatively (as cited in Ishak, 1999).

Trust: Trust is a pervasive attitude that infers an experience of goodness as well as confidence in the sameness and continuity of the other (Erikson, 1968, as cited in Ishak, 1999). Trust also increases security in relationships (Larzelere & Huston, 1980, as cited in Ishak, 1999). When two

people do not trust each other, they will be more hesitant to share their feelings and dreams. According to Erikson, in many ways trust is parallel to attachment. Both are determined from early infancy and are greatly influenced by the quality of the mother-child relationship and the maternal sensitivity to the child's needs.

Communication: Communication is defined as the perceived verbal and nonverbal communicating activities that take place between adolescents and their attachment figures. The communication can take place as a result of direct contacts between the careseekers and their significant others. It can also be as symbolic communication that does not involve direct contact. This symbolic form can either be transmitted through mail such as letters, electronic mail, or telephone.

Alienation: Alienation is defined as feelings of intense anger and detachment from attachment figures. These feelings can be triggered by the absence or inaccessibility of attachment figures in times of crisis. Alienation begets other negative responses. Once the feeling of alienation is triggered, it will affect the careseekers' ability to communicate with their attachment figures (Ishak, 1999).

Characteristics of Assertiveness

Assertiveness is very near to self-imagination and self-respect and help to create self-believe on inner relation of people. Defending of self-right, saying "no", beginning, continue, ending, and how to solve problem, pressure endurance, freedom sensation, recognizing in selection, getting acceptance, are of common characteristics of self-esteem and assertive persons. (Ford, 1992, as cited in Alayi et al., 2011) research result show instructing assertiveness session could increase amount of primary and interactive assertiveness of students.

The term assertiveness itself seems to do double duty in everyday use, referring to this overall spectrum of behavior as well as to a moderate or moderately high point on the spectrum (Ames, 2009). An assertive person is neither an aggressive person nor a shy person. Therefore, assertiveness is not the opposite of aggressiveness or shyness, but is a halfway point of balance where two opposite poles, namely, shyness and assertiveness, are in harmony with each other (Voltan-Acar, 2004, as cited in Aslan, 2013).

Components of Assertiveness: Lazarus (1971) regarded assertiveness as comprising four main components; the ability to refuse requests, ask for favors and make requests, express positive and negative feelings, and initiate, continue and terminate general conversations. The term “assertiveness” refers to a subcategory of social skills in which the emphasis is on the ability to express both positive and negative feelings in the interpersonal context without suffering consequent loss of social reinforcement. The concept of assertiveness was introduced by experts in behavioral therapy, assertiveness claiming to inhibit anxiety and reduce depression. It pointed out that assertive behavior leads to improved self-image.

Design and Procedure

Sampling. All of the participants involved in this study were totally 700 students including 350 males and 350 females. Grade 10 students from six high schools, including two high schools (branch), two high schools and two private high schools in Budalin township were randomly selected to participate in this study. The sample was chosen by using simple random sampling technique.

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

Instruments. Inventory of Parent and Peer Attachment (IPPA) developed by Greenberg and Armsden (1987) and Assertiveness Questionnaire (AQ) developed by a Research Collaboration (Gaumer Erickson, Noonan, Monroe, & McCall, 2016) were used in this study. Inventory of Parent and Peer Attachment (IPPA) includes 53 items. The IPPA consists of 28 items for parent attachment and 25 items for the peer attachment. The Assertiveness Questionnaire (AQ) consists of 20 items in which 14 items were positively stated and 6 items were negatively stated.

Data Analysis and Results

An Analysis of Parent and Peer Attachment of Grade 10 Students

Table 1. Descriptive Statistics for Parent and Peer Attachment of Grade 10 Students

Attachment	No. of Items	Mean	Mean %	Std. Deviation
Parent Attachment	28	91.27	83.73	9.16
Peer Attachment	25	72.06	74.29	10.16

According to Table 1, it can be interpreted that students had more attachment to parents than to peers because the mean percentage of parent attachment (83.73%) was greater than that of peer attachment (74.29%).

Moreover, the independent samples *t* test was used to examine whether the differences between males and females in parent and peer attachment of Grade 10 students was significant or not (See Table 2).

Table 2. Independent Samples *t* test Result for Parent and Peer Attachment of Grade 10 Students by Gender

Attachment	Gender	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Parent Attachment	Male	90.00	8.83	-3.683***	698	.000
	Female	92.53	9.33			
Peer Attachment	Male	72.02	9.94	-.123	698	.902
	Female	72.11	10.40			

Note: ***The mean difference is significant at .001 level.

According to Table 2, there was significant difference in parent attachment of Grade 10 students by gender ($t=-3.683$, $p<.001$). It was revealed that female students had better parent attachment than male students. However, it was found that the levels of peer attachment did not differ significantly between males and females. Then, to find out the differences in parent and peer attachment of Grade 10 students by school type, the independent samples *t* test was used (See Table 3).

Table 3. Independent Samples *t* Test Results for Parent and Peer Attachment of Grade 10 Students by School Type

Attachment	School Type	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Parent Attachment	Public school	90.48	9.50	-2.107*	698	.035
	Private school	91.94	8.82			
Peer Attachment	Public school	73.65	9.61	3.845***	698	.000
	Private school	70.71	10.43			

Note: * $p < .05$, *** $p < .001$

Table 3 revealed that there was significant difference in parent attachment of Grade 10 students by school type at .05 level ($t = -2.107$, $p < .05$). This showed that students at private schools had higher attachment to parents than students at public schools. Moreover, peer attachment of Grade 10 students differed significantly by school type at .001 level ($t = 3.845$, $p < .001$). This result showed that students at public schools had more peer attachment than students at private schools.

An Analysis of Parent and Peer Attachment of Grade 10 Students

Table 4. Descriptive Statistics for Assertiveness of Grade 10 Students

Variable	Number	Minimum	Maximum	Mean	Std. Deviation
Assertiveness	700	40	71	55.57	4.88

Result in Table 4 revealed that students' assertiveness level was relatively satisfactory because the sample mean score (55.57) of students in assertiveness was greater than the theoretical mean score (50) of students.

Then, the independent samples *t* test was used to examine whether the difference between male and female students was significant or not in assertiveness. The result indicated that there was no significant difference in assertiveness by gender ($t = 1.077$, $p > .05$). It might be concluded that the assertiveness level of students was not affected significantly by gender.

To find out the significant differences in assertiveness level of Grade 10 students by school type, the independent samples *t* test was used.

Table 5. Independent Samples *t* test Result for Assertiveness of Grade 10 Students by School Type

Variable	School Type	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Assertiveness	Public school	55.44	4.99	-.616	698	.538
	Private school	55.67	4.77			

According to Table 5, there was no significant difference in assertiveness of Grade 10 students by school type. Hence, it was revealed that the school type had no effect on assertiveness of students.

Relationship Among Parent and Peer Attachment and Assertiveness

In order to examine whether there was any significant relationship among parent and peer attachment and assertiveness of Grade 10 students, Pearson's Product-Moment Correlations were computed (See Table 6).

Table 6. Correlation between Parent and Peer Attachment and Assertiveness of Grade 10 Students

Variables	Parent Attachment	Peer Attachment	Assertiveness
Parent Attachment	-	.405**	.353**
Peer Attachment		-	.329**
Assertiveness			-

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

The result showed that there was a moderate positive significant relationship among parent and peer attachment and assertiveness of Grade 10 students. Therefore, it could be judged that the higher the attachment to parents and peers students had, the greater their assertiveness in students.

In order to investigate how well the students' parent and peer attachment predict their assertiveness, the multiple regression was calculated. The value of multiple regression correlation coefficient (*R*)=.407 and that of the adjusted *R* square was .164. This indicated that 16.4% of assertiveness can be predicted from students' parent and peer attachment.

To get more exact information with regard to the relationship between parent and peer attachment and assertiveness of Grade 10 students, regression coefficients were computed and the result can be seen in the following Table.

Table 7. Regression Coefficients for Parent and Peer Attachment and Assertiveness of Grade 10 Students

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
	<i>B</i>	Std. Error	Beta(β)		
1(Constant)	35.100	1.780		19.717***	.000
Parent Attachment	.140	.020	.263	6.955***	.000
Peer Attachment	.107	.018	.222	5.874***	.000

*** $p < .001$

Based on Table 7 result, the model to understand the relationship between parent and peer attachment and assertiveness of students can be defined as the following identified equation.

Assertiveness = 35.1 + 0.14 Parent Attachment + 0.107 Peer Attachment
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This findings pointed that parent and peer attachment of students were the best predictors for their assertiveness. Hence, it could be interpreted that the students who possessed more attachment to parents and peers could have the more assertiveness.

Conclusion, Discussion and Recommendation

Adolescents spend a large proportion of their day in communicating with their peers, teachers, parents and their academic teaching. Peer relationships may play an important role in the internal (re)organization of the adolescent's world. Although they differ from parental attachment, these relationships may open doors for the secure development of adolescents and represent emotional bonds that are created in adult life, enhancing communication skills and feelings of trust. Therefore, possessing high attachment with their attachment figures has become important in the educational area and social area.

The following suggestions may be required to enhance students' attachment levels by their parents.

- Parents should create an atmosphere of secure attachment for their adolescents so that secure adolescents were more socially accepted by their peers than were insecure/dismissing adolescents but should avoid a condition of insecure attachment.
- Mothers need to provide more emotional support while fathers provide material and informational support in order to create a positive parent-adolescent attachment and consequently peers give social support.
- Parents should take their responsibilities to raise adolescents' perceptions of how responsive and important their mothers and fathers are in support seeking and proximity seeking situations.

Moreover, students should be nurtured and guided to enhance their assertiveness levels by the following suggestions and ways.

- Students should be given the assertiveness training programs to improve their assertive beliefs and behaviors.
- Since assertiveness is influenced by assertiveness training, it should also be designed to help students to stand up for their rights without being aggressive and violating the rights of others.
- To meet the challenge and create a more positive atmosphere, the teachers should devise an assertive discipline system that includes rewards, reinforcers and consequences so that students will increase how to communicate with each other.
- The teachers should use the techniques of modeling, role-playing, group projects and oral discussions to lay the foundation for life-long changes within the students, building their confidence and helping them to recognize the benefits of having good social skills.

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Mental Health Status of Student Teachers: An Approach of Dual Factor Model

Toe Toe Oo*

Abstract

This study mainly focused on classification of mental health status of student teachers through dual factor approach. The current study was conducted on descriptive survey research design using stratified sampling technique. A total of 770 (85%) first year university students male (299, 38.8%) and female (471, 61.2%) participated in this study. In this, we categorized the mental health classification of university students in terms of dual factor model and investigated how much four mental health groups were significantly differed by gender, major and university by conducting chi-square analysis. Mental health condition categorized by dual-factor model approach yielded complete mental health as the largest group (58.3%) and symptomatic but content, the least one (10.4%).

Introduction

Herein, the student teachers from universities of education with special teacher training will become senior assistant teachers after accomplishing their education program. Indeed, the first year is the turning point that the transition between home environment and university environment and their daily life is also kind of challenge for them. And some may not adapt the new situations instantly and they may face some difficulties concerning academic matters and some needs. Therefore, the guidance and counseling program and service center that can help and support the students with different challenges and mental illness are essentially needed to implement in universities, especially for those first year students. To be more effective the guidance and counseling program, the main sources of depressed, mental ill and challenges are needed to figure out. So, it is essentially needed to explore the mental health condition of student teachers.

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Dual Factor Model of Mental

Mental health can be defined as a syndrome of symptoms of hedonic and positive functioning, operationalized by measures of subjective wellbeing- individuals' perceptions and evaluations of their lives and the quality of their functioning in life (Keyes, 2005). Mental health has been increasingly interesting in expanded definition in this era. Typically, mental health was defined in negative terms prior to the middle of this century (Greenstpoon & Saklofske, 2001). The absence of negative mental health was considered as the indication of subjective wellbeing. Mental health professionals have been increasing in mental health and have argued that the mental health was just merely the absence of mental illness (Taylor, 2001).

In recent years, the positive psychology scholars have strongly suggested to integrate the model of mental health which includes both the presence of positive feeling, behavior and thoughts and the absence of negative symptoms of mental health namely aggression, depression and so forth (Keyes, 2002, 2003). There is growing consensus among psychologists concerning mental health that is not sufficient just focusing only on negative aspects, psychopathology. In the meanwhile, Greenstpoon (2001) assumed that the absence of psychopathology is associated in turn with the presences of well-being, this has not consistently evidenced through research (Greenstpoon & Saklofske, 2001).

Other researchers have explored different groupings of mental health standing. Suldo and Shaffer (2008) verified provided four distinct mental health groups that were well proportioned SWB as positive indicators and psychopathology as negative indicators. They named those four groups as 'complete mental health' (i.e., high SWB and low psychopathology), 'vulnerable' (i.e., low SWB and low psychopathology), 'symptomatic but content' (high SWB and high psychopathology), and 'troubled' (i.e., low SWB and high psychopathology)(S. M. Suldo & Shaffer, 2008). Many research findings concerning assessment of mental health covered the existence and utility of dual-factor model of mental health (S. P. Antaramian et al., 2010; Eklund et al., 2010; Lyons, Huebner, & Hills, 2013; Renshaw & Bolognino, 2017; Renshaw & Cohen, 2014; Xiong, 2016; Xiong, Qin, Gao, & Hai, 2017).

Table 1. Rules for Mental Health Group Classification

Level of Psychopathology	Level of Subjective-Wellbeing	
	Low (SWB \leq P30)	Average to High (SWB $>$ P30)
Low (IT $<$ 60 and ET $<$ 60)	2. Vulnerable	1. Complete Mental Health
High (IT \geq 60 or ET \geq 60)	4. Troubled Group	3. Symptomatic but content

Note: source (Suldo & Shaffer, 2008).

Aims of the Study

There were two main aims in this study. The first aim was to distinguish the mental health classification of students through dual factor model. The second one was to explore the strength of associations between mental health groups and gender, major specialization and different universities.

Research Question and Hypothesis

The two research questions were set for this study. They are as followings:

RQ1. What is the mental health classification of student teachers through dual factor model approach?

RQ2. How is the strength of associations between mental health groups, gender, major specialization and different universities?

Research Design

The research design of this study focused on quantitative research design using descriptive survey technique. Survey is one of the most and oldest methods in many fields, especially in social science(Maleki, 2011).

Next important point is sampling design that is defined as a certain plan for obtaining required and representative sample from a whole population. Stratified random sampling was used as a method of sampling that involves the division of a population into smaller groups known as strata in this study.

Demographic Information of Participants

In this study, totally 770 university students from three universities with different major specializations participated in complete. Those three universities which the survey were conducted are Yangon University of Education (YUOE), Sagaing University of Education (SUOE) and University for Development of National Races (UDNR).

In the bachelor courses of education, three major specializations were classified as specialization on art, science and combination of science subjects and art major subjects. The students who chose two subjects only from three subjects Economy, History, and Geography are the art major specializations. Those who chose two subjects only from those Physics, Biology, Chemistry are the science major specializations whereas those who chose two subjects sharing from both art and science subjects. The main and compulsory subjects of universities of education are Educational Psychology, Educational Theory and Methodology. Other compulsory academic subjects are Myanmar, English and Mathematics.

Table 2. Demographic Information of Participants

		University I	University II	University III	Total
Gender	Male	160	85	54	299 (38.8%)
	female	198	105	168	471 (61.2%)
	Total	358 (46.5%)	190 (24.7%)	222 (28.8%)	770
Major	Art	281	71	74	281 (36.5%)
	science	93	44	72	209 (27.1%)
	combinat- ion	129	75	76	280 (36.4%)
	Total	358 (46.5%)	190 (24.7%)	222 (28.8%)	770

Measurement Tools

1. Satisfaction with Life Scale (SWLS)
2. Positive Affect and Negative Affect Scale (PANAS)
3. Internalizing Factor- Depression Scale
4. Externalizing Factor- Aggression Symptoms

Data Analysis

Firstly, the mental health groups were derived from the application of previous rules (see Table 1) to separate university students as the complete mental health group, the vulnerable group, and the symptomatic but not content group and the troubled group orderly.

Among several nonparametric measures of association to determine the relationship degree between two independent variables, cross tabulation analysis was conducted to decide the strength of relationship between mental health groups and gender, major specialization and university by using Cramer's V analysis. Because Cramer's V is the appropriate statistics for larger cross tabulations (like a 3x3, 3x4, 4x3) with nominal data of both variables whereas the phi is a more suitable one for a smaller cross tabulations like a 2x2 (Cohen, 2013) .The basic assumptions and conditions for phi and Cramer's V were confirmed by being both variables independent and nominal (Morgan et al., 2004).

Results and Findings

Mental Health Group Classification

Firstly, mental health groups were classified into four groups namely, complete mental health, vulnerable, symptomatic but content and troubled group based on the same formula used other previous researches (S. Antaramian, 2015; S. M. Suldo & Shaffer, 2008). Levels of SWB were identified, including the two measures of positive and negative affect, and life satisfaction standardized scores and levels of psychopathology were classified, involving the two constructs of internalizing and externalizing factors. Mental health group memberships which are categorized based on the guidelines used in other published previous researches (S. Antaramian, 2015; Kelly, Hills, Huebner, & McQuillin, 2012; S. M. Suldo & Shaffer, 2008; Xiong et al., 2017) are reported in Table (3). In this group classification, the largest group is the complete mental health group with the

percentage of 58.3% and followed by the vulnerable group (16.8%) and the troubled group (14.5%) and the least one is the symptomatic but content group (10.4%).

Table 3. Mental Health Group Classification

Level of Psychopathology	Level of Subjective Well-being	
	Low (SWB \leq P ₃₀)	Average to High (SWB $>$ P ₃₀)
Low ($IT < 60$ and $ET < 60$)	2. Vulnerable ($n=129$, 16.8%)	1. Complete Mental Health ($n=449$, 58.3%)
High ($IT \geq 60$ or $ET \geq 60$)	4. Troubled ($n=112$, 14.5%)	3. Symptomatic but content ($n=80$, 10.4%)

Note: SWB=Subjective well-being, IT = Internalizing T standard score, ET = Externalizing T standard score, P_{30} = 30th Percentile

Association of Mental Health Groups with Gender, Major Specializations and Universities

To investigate the strength of relationship of four mental health groups with gender, three major specializations and three different universities, cross tabulation was conducted by using Cramer's V which is the most popular measure of chi square analysis of association. According to the cross tab results (see Table 7), females were more in all mental health groups than males but there were no significant difference between the observed count and expected count of gender. The effect size of Cramer's V ($\phi_c = 0.057$) was very small and the association of mental health groups and gender was not significant. These results meant that there was no significant correlation between mental health groups and gender.

Among mental health groups by major specializations, science specialization was the most members and then followed by combination of science and art specialization and the least one was the art specialization. The cross tab results showed that there were significant differences among the observed counts and expected counts among four mental health groups by three major specializations (see Table 4). The value of Cramer's V ($\phi_c = 0.235$) provided that there was medium relationship between the four mental health groups and three major specializations at .001 level (Cohen, 2013).

According to the cross tab results, the university I was the most members in all four mental health groups and the next one was the university III and the least one was university II. It can be seen clearly in figure 3. The cross tab results offered that there were significant differences among the observed values and the expected values among four mental health groups through different universities at 0.05 level (see Table 4) Consequently, the value of Cramer's V ($\phi_c = 0.093$) proved that there were statistical relationship of mental health groups by three different universities.

Table 4. Association of Mental Health Groups Differences and Gender, Major and Universities

		Complete mental health		Vulnerable		Symptomatic Trouble group ϕ_c but content						
		N	%	N	%	N	%	N	%			
Gender	Male	170	22.1	48	6.2	30	3.9	51	6.6	.057		
	Excepted	174.4	50.1			31.1		43.5				
	Female	279	36.2	81		10.5	50	6.5	61		7.9	
	Excepted	274.6	78.9			48.9		68.5				
Total		449	58.3	129		16.8	80	10.4	112	14.5		
Major	Art		121		15.7	73	9.5	29	3.8	72	9.4	.235**
	Excepted		172.0			49.4		30.6		42.9		
	Science		184		23.9	22	2.9	20	2.6	16	2.1	
	Excepted		141.1			40.5		25.1		35.2		
	Combination		144		18.7	34	4.4	31	4.0	24	3.1	
	Excepted		135.9			39.0		24.2		33.9		
Total		449		58.3	129	16.8	80	10.4	112	14.5		
University	University I		191		24.8	66	8.6	38	4.9	63	8.2	.093*
	Excepted		208.8			60.0		37.2		52.1		
	University II		109		14.2	34	4.4	24	3.1	23	3.0	
	Excepted		110.8			31.8		19.7		27.6		
	University III		149		19.4	29	3.8	18	2.3	26	3.4	
	Excepted		129.5			37.2		23.1		32.3		
Total		449		58.3	129	16.8	80	10.4	112	14.5		

Note: * $p < .05$, ** $p < .001$.

Discussion and Conclusion

Mental Health Group Classification

Among four mental health groups categorized by the dual factor approach, the first group, complete mental health group (58.3%) that are comprised of high level of subjective wellbeing and low level of psychopathology is the best group. Oppositely, the last group, the troubled group (14.5%) which is involved the low level of subjective wellbeing and high level of psychopathology is the worst one. The second group, vulnerable group (16.8%) is comprised of both low levels of subjective wellbeing and psychopathology and the third group, the symptomatic but content group (10.4%) is in both high levels of subjective wellbeing and psychopathology. In terms of subjective wellbeing and psychopathology, the current findings supported that totally 68.7% of the entire sample were in high subjective wellbeing and the rest 31.3% of overall participants were in low subjective wellbeing. On other hand of psychopathology, the present result provided that 75.1 % of university students were in low psychopathology and the remaining, 24.9% of total sample were in high level of psychopathology.

Based on the dual factor approach, the current finding yielded complete mental health as the largest group (58.3%) and symptomatic but content, the least one (10.4%) among four groups. Those mental health condition was found to be consistent with such other findings 60.8% and 9.2%, 61.1% and 8.5%, 47.4% and 5.5%, 62.2% and 11.4% as the largest one, complete mental health and the least one, symptomatic but content (S. Antaramian, 2015; S. M. Suldo et al., 2016; Xiong et al., 2017). In accordance with these findings, most of the university students were high in subjective well-being since both two groups were in the same high SWB although complete mental health was low in PTH and symptomatic but content was high in PTH. Therefore, the current result showed the usefulness of DFA even in university students in addition to high school students and middle school students of other findings. This result highlighted that one quarter of the university students were in high psychopathology even though most of the students were in complete mental health. Therefore, the teacher trainers and the authorities concerned should train to enhance the awareness of university students that mental fitness is the utmost significance to them. Moreover, the universities should frequently enlighten the juvenile to keep optimistic in their daily life.

Association of Mental Health Groups and Gender, Major Specialization, and Universities

According to cross tab analysis through Cramer's V measures, there was no statistical relationship between mental health groups and gender. The current finding supported that there were no significant differences in four mental health groups between male and female (S. M. Suldo & Shaffer, 2008) and opposite to another finding that the females were significant higher than males students (S. Antaramian, 2015; Xin-qiang, Xiao-xin, Fan, & Da-jun, 2016). This current result can be interpreted that both male students and female students were in the nearly same status of mental health and most of them were approximately similarly in completely mental health and also nearly equally all four mental health groups. This condition can be regarded as rather being satisfied. Because it can be assumed that most of the male students were satisfied in attending universities of education with complete mental health status like females. Additionally, most of the people traditionally regarded that females were more suitable with teaching carrier than males in Myanmar culture. Moreover, some male students from universities of education attended those universities because of their high matrix exam marks than their real interests. In accordance with the above reasons, the current results of being not significant relationship between mental health groups and gender showed that male students were also satisfied in attending those universities of education.

In light with the results of major specialization differences on mental health groups, there was a significant correlation between four mental health groups and three major specializations. This finding provided that science major students were the most in complete mental health group although most of three major students were in this first group. Then, the university students with combination specialization followed and the least was the art major students. Among the art major students, 72 students (9.4% of total sample) were in troubled group that arranged between low subjective wellbeing and high psychopathology and 73 students (9.5% of total sample) were in vulnerable group, representative of low subjective wellbeing and high psychopathology although 121 students (15.7% of total sample) were in complete mental health. This finding showed that some students of art major specialization (18.9% of total sample) were in low subjective wellbeing even though most students (194, 25.2% of total sample) were in low psychopathology. On one hand of combination major students, 144 students (18.7%) of complete mental health and 31 students

(4%) of symptomatic but content were in average to high level of subjective wellbeing. In science major specialization, only 20 students (2.6%) of symptomatic but content group, and 16 students (2.1% of total sample) of troubled group were in high psychopathology whereas 22 students (2.9% of total sample) of vulnerable group, and 184 students (23.9%) of complete mental health were in average to high subjective wellbeing. This current finding suggested that it was also needed to take into account 4.7% of science students with high psychopathology even though it was a few numbers.

Among the mental health group differences of three universities, most students of university I, 191 students of complete mental health (24.8%) and 38 students of symptomatic but content (4.9 %) were in average to high subjective wellbeing. This result highlighted those 101 students (13.1%) from university I were in high psychopathology. From university II, some students, 34 students (4.4%) of vulnerable group and 23 students (3%) of troubled group were in low subjective wellbeing although most of the university II students, 109 students (14.2%) of complete mental health and 24 students (3.1%) of symptomatic but content were in acceptable subjective wellbeing level.. This result supported that 44 students (5.7 % of total sample) were in high psychopathology. In accordance with this finding among three universities, it can be interpreted that students from university I (101) were the most one in psychopathology and followed by university II and III with similar students (43 and 44). Therefore, it was also needed that university I have to focus and emphasize guidance and counseling program and service to alleviate the psychopathology symptoms of those students and consequently to promote and develop overall development of mental health.

Conclusion

This study mainly focused on two aims that were to explore the mental health group classification, and to determine those mental health group differences in terms of gender, major specializations and universities. Firstly, we categorized the mental health groups through a dual factor approach with subjective wellbeing and psychopathology. According to the mental health group classification based on dual factor approach, the majority of university students were in complete mental health group and the least one was symptomatic but content. This result can be assumed that most of the student teachers were in high subjective wellbeing and least is

in high psychopathology. Indeed, one quarter of total participants was not generally very much but it was a cautious amount in current issue. Therefore, even though a few student teachers were in high psychopathology, it should be regarded on those few university students because they were also key generations for the development of teaching profession in education sector.

In detail analysis of mental health group differences in terms of gender, major specialization, and three different universities, there was no significant relationship of four mental health groups and gender whereas there was significant association of four mental health groups and three major specialization at 0.001 level and there was statistical correlation between mental health groups and three different universities at 0.05 level. These current findings can be interpreted that mental health group differences significantly associated with major specializations and different universities. Additionally, those results emphasized those trouble group students and those with high psychopathology by scoping the fields in majors and universities. As the teacher trainers and those concerned, they can find out who the high level of subjective wellbeing are and who the high level of psychopathology are in this way of findings and consequently, they can approach those university students with high psychopathology symptoms more suitably to finger out their reasons.

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Mathematical Disposition, Test Anxiety and Mathematics Achievement of Grade 10 Students

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Abstract

The main purpose of this study was to investigate the mathematical disposition, test anxiety and mathematics achievement of Grade 10 students from Sagaing Township. The sample of the present study was 921 students (428 males and 393 females) from six Basic Education High Schools by using simple random sampling technique. The Mathematical Disposition Scale (Kevin Lee Waston, 2015), Test Anxiety Inventory (Spielberger, 1980) and Mathematics Achievement Test of researchers were used as the instruments for this study. The reliability coefficient of Mathematical Disposition Scale and Test Anxiety Inventory are .840 and .804. The results of independent sample *t* test, there was significant difference in mathematical disposition by gender subject combination and school location. Next, one-way ANOVA results showed that there were differences in mathematical disposition among schools. There was also significantly difference in test anxiety by subject combination and school location. However, there was no significantly difference in test anxiety by gender. The results of one-way ANOVA showed that there were differences in test anxiety among schools. And, the result of *t* test showed that there was significant difference in mathematics achievement by gender, subject combination and school location. According to the result of one-way ANOVA, there was significant different in mathematics achievement among schools. The result of Pearson product-moment correlation, the mathematical disposition was positively correlated with mathematics achievement and the test anxiety was negatively correlated with mathematics achievement.

Keywords: Mathematical Disposition, Test Anxiety, Mathematics Achievement

Introduction

Importance of the Study

the fields of technology, commerce, science, and economics and other related living and learning aspects of life. Evidently, it provides the basis on which technological advances are built upon. However, the

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attainment of the goals and objectives of mathematics education is impossible without the interests and capabilities of learning by the students. Moreover, mathematics is the core of knowledge from which critical and analytical skills are acquired and developed. Mathematics develops logical thinking which is necessary to maximize full productive uses of the benefits of science and technology.

performance in college and their future careers. Having a solid background in mathematics helps students develop sophisticated perspective and offers more career options. The importance of mathematical learning has repeatedly been emphasized by educators and politicians (Wilkins & Ma, 2002).

Test and examinations at all stages of education, especially at higher education level have been considered an important and powerful tool for decision making in our competitive society, with people of all ages being evaluated with respect to their achievement, skills and abilities (Rana & Mahmood, 2010).

Test anxiety is actually a type of performance anxiety- a feeling someone might have in a situation where performance really counts or when the pressures on to do well. High anxiety is experienced before the examination an all the students especially when they are pressured to make high scores in the examination, their anxiety is found to increase. Thus, it is essential to investigate the influential factors of mathematics achievement for improving students' mathematics achievement. So, the present study will examine mathematical disposition, test anxiety and mathematic achievement.

Aim of the Study

The main aim is to study the mathematical disposition, test anxiety and mathematics achievement of Grade 10 students in Sagaing Township.

Scope of the Study

Participants of this study were selected from six Basic Education High Schools in Sagaing Township, Sagaing Region. The participants were 921 Grade 10 students.

Definition of the Key Terms

Mathematical Disposition

Mathematical disposition refers not simply to attitudes but a tendency to think and to act in positive ways towards mathematics as something logic, useful and beneficial (NCTM, 1989; Syaban, 2008).

Test Anxiety

Test anxiety is an emotional state that has psychological effects during the examination (Duesek, 1980).

Mathematics Achievement

Mathematics achievement means the performance of pupils in Mathematics as determined by the magnitude of scores gained in Mathematics tests and examinations (Van den Aardweg, 1988).

Method and Procedure

Research Method

The students participated in this study were selected by using simple random sampling method. Descriptive research design and quantitative survey method were used in this study.

Sample of the study

The participants of this study were 921 Grade 10 students. They were randomly selected from six Basic Education High Schools of Sagaing Township in the academic year of 2018-2019. The participants were (428) males and (393) females from the respective schools.

Instrumentation

Mathematical disposition was measured by using Mathematical Disposition Scale. This scale was developed by Kavin Lee Waston. It consists of 38 items. The internal consistency (Cronbach's alpha) of the Mathematical Disposition Scale was 0.84.

In this study, the Test Anxiety Inventory (TAI) developed by Spielberger was used to study the test anxiety of Grade 10 students. It consists 20 items. The internal consistency (Cronbach's alpha) of the Test Anxiety Inventory (TAI) was 0.804.

For measuring mathematic achievement of Grade 10 students, mathematics achievement test was constructed by researchers. This mathematics achievement test consists of 25 items.

Findings

Statistical analysis was conducted to find out the mathematical disposition components of Grade 10 students. Descriptive statistics for the mathematical disposition subscales of Grade 10 students were shown in Table 1.

Table 1. Descriptive Statistics for the Mathematical Disposition of Grade 10 Students

Variables	N	No of items	Minimum	Maximum	Mean	Mean %	SD
Mathematical Disposition	921	38	61	150	117.06	77.01	12.54

Table 1 showed that the mean percentage of mathematical disposition is above 77%. So, the students from the selected Basic Education High School in Sagaing Township were high in mathematical disposition.

Table 2. Results of Independent Sample *t* test for the Mathematical Disposition of Grade 10 Students by Gender

Variables	Gender	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Mathematical Disposition	Male	114.89	-4.967***	919	.000
	Female	118.95			

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

According to Table 2, the result of independent sample *t* test showed that there was significant difference in mathematical disposition of Grade 10 students between males and females. It was interpreted that female students were significantly higher than male students in mathematical disposition.

Table 3. Results of Independent Sample *t* test for the Mathematical Disposition by Subject Combination

Variables	Subject Combination	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Mathematical Disposition	Combination7	119.19	5.11***	919	.000
	Combination1	115.03			

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

According to Table 3, there was significant difference in mathematical disposition of Grade 10 students between the students who took combination 7 and the students who took combination 1. Thus, the students who took combination 7 were significantly higher in mathematical disposition than the students who took combination 1.

Table 4. Results of Independent Sample *t* test for the Mathematical Disposition of Grade 10 Students by School Location

Variables	School Location	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Mathematical Disposition	Urban	115.57	-3.82***	919	.000
	Rural	118.69			

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

According to Table 4, there was significant difference in mathematical disposition of Grade 10 students by school location. And, the mathematical disposition of Grade 10 students from rural region was significantly higher than that of the students from urban region.

Table 5. ANOVA Result for Mathematical Disposition by Schools

Schools	Sum of Square	<i>df</i>	Mean Square	F	<i>p</i>
Between Groups	5605.320	5	1121.064	7.374***	.000
Within Group	139111.275	915	152.034		
Total	144716.595				

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

According to the Table 5, the result was presented that there were significant differences in mathematical disposition by the schools, $p = .000$. It can be interpreted that mathematical disposition depend on the schools in Sagaing Township. It can be concluded that the student from the selected Basic Education High Schools in Sagaing Township had differences in mathematical disposition.

Table 7. Descriptive Statistics for the Test Anxiety of Grade 10 Students

Variables	N	No. of items	Minimum	Maximum	Mean	Mean %	SD
Test Anxiety	921	20	21	76	47.56	59.45	8.29

Table 7 showed that the number of participants, number of items, minimum, maximum, mean, mean percentage and standard deviation of test anxiety. The result showed that the mean percentage of test anxiety is above 59%. So, the students from the selected Basic Education High Schools in Sagaing Township were moderate in test anxiety.

Table 8. Results of Independent Sample t test for the Test Anxiety of Grade 10 Students by Gender

Variables	Gender	Mean	t	df	p
Test Anxiety	Male	47.55	-0.031	919	.975
	Female	47.57			

According to Table 8, there was no significant difference between male and female students in test anxiety. The result was that the sex differences do not lead to the corresponding differences in test anxiety.

Table 9. Results of Independent Sample t test for the Test Anxiety by Subject Combination

Variables	Sub Combination	Mean	t	df	p
Test Anxiety	Combination 7	46.90	-2.36*	919	.019
	Combination 1	48.18			

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

According to Table 9, there was significant difference in test anxiety of Grade 10 students by their subject combination. It was interpreted that the students who took combination 1 were higher in test anxiety than the students who took combination 7.

Table 10. Results of Independent Sample *t* test for the Test Anxiety of Grade 10 Students by School Location

Variables	School Location	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Test Anxiety	Urban	48.28	2.76**	919	.006
	Rural	46.77			

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

According to Table 10, there was significant difference in test anxiety of Grade 10 students by school location. It was interpreted that the test anxiety of students from urban students were significantly higher in test anxiety than the students from rural region.

Table 11. ANOVA Result for Test Anxiety by Schools

Schools	Sum of Square	<i>df</i>	Mean Square	F	<i>p</i>
Between Groups	3032.249	5	606.450	9.213***	.000
Within Groups	60232.893	915	65.828		
Total	63265.142	920			

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

According to the Table 11, the results was presented that there were significant differences in test anxiety by the schools, $p = .000$. It can be interpreted that test anxiety depends on the schools in Sagaing Township.

Table 12. Descriptive Statistics for the Mathematics Achievement of Grade 10 Students

Variables	N	No. of items	Minimum	Maximum	Mean	SD
Mathematics Achievement	921	25	3	25	16.58	4.49

Table 12 showed that the numbers of participant, number of items, minimum, maximum, mean and standard deviation of mathematics achievement test.

Table 13. Results of Independent Sample t test for the Mathematics Achievement of Grade 10 Students by Gender

Variables	Gender	Mean	t	df	p
Mathematics Achievement	Male	15.17	-9.212***	919	.000
	Female	17.80			

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

According to Table 13, the result of independent sample t test showed that there was significant difference in mathematics achievement of Grade 10 students by gender.

Table 14. Results of Independent Sample t test for Mathematics Achievement by Subject Combination

Variables	Sub Combination	Mean	t	df	p
Mathematics Achievement	Combination 7	17.90	9.128***	919	.000
	Combination 1	15.31			

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

According to Table 14, there was significant difference in mathematics achievement of Grade 10 students by their subject combination. It was interpreted that the students who took combination 7 were higher in mathematics achievement of the students who took combination 1.

Table 15. Results of Independent Sample *t* test for Mathematics Achievement of Grade 10 Students by School Location

Variables	School Location	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Mathematics Achievement	Urban	15.02	-11.841***	919	.000
	Rural	18.28			

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

According to Table 15, there was significant difference in mathematics achievement of Grade 10 students by school location. It can be concluded that the students from rural region were higher in mathematics achievement than the students from urban region.

Table 16. ANOVA Result for Mathematics Achievement by Schools

Schools	Sum of Square	<i>df</i>	Mean Square	F	<i>p</i>
Between Groups	4059.136	5	811.827	51.167***	.000
Within Groups	14517.717	915	15.866		
Total	18576.853	920			

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

According to the Table 16, the results was presented that there were significant differences in test anxiety by the schools, $p = .000$.

Table 17. Correlation Matrix between Mathematical Disposition and Mathematics Achievement

	Mathematics Achievement	Mathematical Disposition
Mathematics Achievement	1	.292**
Mathematical Disposition	.292**	1

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

Table 17 showed the correlation between mathematical disposition and mathematics achievement of Grade 10 students from Sagaing Township. The correlation between mathematical disposition and mathematics achievement of Grade 10 students was .292. The correlation is significant at the 0.01 level. This correlation coefficient was slightly low.

Table 18. Correlation Matrix between Test Anxiety and Mathematics Achievement

	Mathematics Achievement	Test Anxiety
Mathematics Achievement	1	-.154**
Test Anxiety	-.154**	1

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

The correlation between test anxiety and mathematics achievement of Grade 10 students from Sagaing Township was presented in Table 18. The correlation was -.154 and significant at the 0.01 level. It was slightly low as well.

Conclusion

To sum up, mathematical disposition of students from the selected Basic Education High Schools in Sagaing Township differed significantly according to their gender, subject combination, school location and schools. Test anxiety of students from selected Basic Education High Schools in Sagaing Township differed significantly according to their subject combination, school location and schools. Mathematics achievement of students from the selected Basic Education High Schools in Sagaing Township differed significantly according to their gender, subject combination, school location and schools.

Parent and teacher need to control students' test anxiety because it can influence students' performance negatively. There are many procedures to reduce test anxiety of students. Before starting test, the teachers should try cue-controlled relaxation treatment to provide relaxation of their students. If the teachers and parents want to develop their students' mathematics achievement that has effects on the performance of students' college performance and future career, they must not reject the effects of mathematical disposition and test anxiety on mathematics achievement.

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A Study on Perceived Classroom Environment and Academic Motivation of High School Students in Kyaukse Township

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Abstract

The main purpose of this study is to investigate perceived classroom environment and academic motivation of high school students in Kyaukse Township. The study used descriptive research design and survey method. As the research instruments, What Is Happening In this Class Questionnaire (WIHIC) developed by Velayutham (2012) and Motivated Strategies for Learning Questionnaire (MSLU) developed by Pintrich (1990) were applied. A total of 639 high school students (277 males and 362 females) randomly selected from Kyaukse Township participated in this study. The findings revealed that there was significant relationship between perceived classroom environment and academic motivation ($r = .517, p < 0.01$). Adjusted R^2 result showed that 33% of variance in academic motivation which was explained by classroom environment. Finally, students' academic motivation should be developed with the help of teachers and parents so that they might engage in their learning willingly and get success in their learning.

Keywords: classroom environment, academic motivation, expectancy, value, affective

Introduction

A classroom is a multidimensional environment comprising psychological and social interactions among a diverse academic community (Barr, 2016). The classroom environment is a reflection of students' opinions of academic experience. This includes students' perceptions of the rigor of the class, their interactions with their instructor and class peers, and their involvement in the class (Fraser & Treagust, 1986).

Classroom environment encompasses a broad range of educational concepts, including the physical setting, the psychological environment

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created through social contexts, and numerous instructional components related to teacher characteristics and behaviors (Miller, 1990). The classroom environment influences the student achievement, their self-esteem and participation in the lesson. An effective classroom environment is one in which the teachers' authority to organize and manage the learning activities is accepted by the students. (Falsario, Muyong & Nuevaespana, 2014). Students' motivation is also affected by the traditional ways of teaching and learning in classrooms. In addition, Goh and Khine (2002) have mentioned that a good teacher-student relationship is superior to the creation and maintenance of a positive classroom environment (cited in Wei, 2011).

Motivation in education can have several effects on how students learn and how they behave towards subject matters (Kalaivani & Rajeswari, 2016). Motivation may be rooted in a basic impulse to optimize well-being, minimize physical pain and minimize pleasure (Kalaivani & Rajeswari, 2016). Academic motivation is the driving force behind student's motivation to learn. It is the need and desire to excel in academic work. Academic behaviours can be seen as intrinsically motivated, extrinsically motivated or a motivated (Gupta & Mili, 2016).

Based on Vygotsky's (1978) theory of social cognitive development, the classroom environment is the "culture" that determines students' learning development (cited in Wei, 2011). Today, teacher can teach students how to think and to acquire knowledge through classroom environment. Therefore, good classroom environment is necessary for teachers and students to get good motivation.

Aims of the Study

The main aim of this study is to investigate the perceived classroom environment and academic motivation of high school students in Kyaukse Township. The specific objectives of this study are:

- to determine the perceived classroom environment and level of academic motivation of high school students
- to find out the differences in students' perceived classroom environment by grade, subject combination and types of school
- to examine the differences in students' academic motivation by gender, grade, subject combination and types of school

- to explore the relationship between students' perceived classroom environment and academic motivation

Review of Related Literature

Classroom Environment

Types of Classroom Environment

Physical Environment: The physical environment of the school and the classroom for instance, facilities, spaces, lightening, ventilation, desks and chairs, and air in the classroom affect the safety and comfort of students and so affect learning and personal development of students. Environmental strategies are changes and adaptations that can be made to a classroom's physical environment, schedule, activities, and materials to encourage positive social interactions between children in the classroom (Husen et al, 1991, cited in Oluwatelure, 2010).

Social environment: The social or emotional environment includes all of the factors that can affect how the child interacts with others (e.g., respect for all, clear expectations, safe and caring atmosphere). Vygotsky's theories stressed the fundamental role of social interaction in the development of cognition. Vygotsky's theories included the implementation of the following:

1. Teachers provide direct instruction on new material and model solving the problems students will be doing.
2. Lessons are planned to allow time for student collaboration on problems.
3. Students may help each other but giving answers is forbidden (Baek & Choi, 2002).

Psychological Environment: The psychological environment refers to the social quality of the school and classroom; especially it relates perceptions and feelings about social relationships among students and teachers. The classroom psychological environment, which refers to classroom social climate, classroom social interactions, and classroom social relationship are often used interchangeably when discussing the classroom learning environment (Cheng, 1994, as cited in Sprinthall, 1990). Maehr (1990) asserted that school administrators are in the best position to shape a school's psychological environment (cited in Renchler, 1992).

Achievement Motivation

Three Motivational Components of Pintrich's Social Cognitive Model

Pintrich's social cognitive model proposes three motivational components.

Expectancy Components: Expectancy itself is defined as “the measurement of the likelihood that positive or negative outcomes will be associated with or follow from a particular act”. Similarly, as the number of positive outcomes increase, the motivation to engage in the behavior will increase (Mazis et al, 1975, cited in Cruz, 2005).

Value Components: The second component of Pintrich's social cognitive model is value. The value component of student motivation involves students' goals for engaging in a task as well as their beliefs about the importance, utility, or interest of a task. (Pintrich, 1990).

Affective Components: The affective reactions are more a consequence of performance and a reflection on task involvement rather than anticipatory affect (Pintrich, 1990). Again, there are a variety of affective reactions that might be relevant (e.g., anger, pride, guilt), but in a school learning context, one of the most important seems to be test anxiety (Wigfield & Eccles, 1989).

Methodology

Sampling. This sample was composed of 277 males and 362 females. A total of 639 high school students from 2 government high schools and 3 private high schools in Kyaukse Township participated in this study.

Research Method. Descriptive research design and survey method were used.

Instruments. What Is Happening In this Class? (WIHIC) Questionnaire: Students' perceptions of the classroom learning environment were assessed using the What Is Happening In this Class? (WIHIC) questionnaire. The WIHIC was originally specifically designed for high school science classrooms (Aldridge et al., 1999). Now, in this study, “What Is Happening In this Class? (WIHIC) Questionnaire” revised by Velayutham (2012). This questionnaire consists of 42 items that are designed by seven subscales.

Motivated Strategies for Learning Questionnaire (MSLQ): The Motivation Questionnaire was modified from Motivated Strategies for Learning Questionnaire (MSLQ) designed by Pintrich, Smith, Garcia, & Keachie (1991). This scale consists of 31 statements that are designed by three components (expectancy, value and affect) to assess students' motivational beliefs.

Data Analysis and Findings

Descriptive Statistics of Students' Perceived Classroom Environment

Table 1. Descriptive Analysis of Perceived Classroom Environment

Variables	Mean	SD
Student Cohesiveness	24.91	3.11
Teacher Support	21.82	3.92
Involvement	19.66	3.26
Investigation	20.56	3.85
Task Orientation	25.56	3.08
Cooperation	22.17	3.60
Equity	23.16	4.06
Total	157.85	17.73

The table showed that the task orientation mean score of students is the highest in all of perceived classroom environment. According to this table, the mean score of involvement is the lowest in all of perceived classroom environment.

Comparison of Grade 10 and Grade 9 Students' Perceived Classroom Environment

Table 2. Descriptive Statistics for Students' Perceived Classroom Environment by Grade

Variable	Grade	N	Mean	SD	Mean Difference
Classroom Environment	Grade 10	328	157.20	16.65	-1.32
	Grade 9	311	158.52	18.81	

Table 2 showed that there was a slight difference in mean scores by grade in students' perceived classroom environment.

Table 3. Result of Independent Samples *t* Test for Students' Perceived Classroom Environment by Grade

Variable	<i>t</i>	<i>df</i>	<i>p</i>
Classroom Environment	-.938	637	.349

According to Table 3, it was found that there was no significant difference in students' perceived classroom environment by grade ($p > 0.05$).

Comparison of Students' Perceived Classroom Environment by Subject Combination

Table 4. Descriptive Statistics for Students' Perceived Classroom Environment by Subject Combination

Variable	Combination	N	Mean	SD	Mean Difference
Classroom Environment	7	342	160.72	17.70	6.18
	1	297	154.54	17.21	

Table 4 showed that there was moderate difference in mean scores by combination in students' perceived classroom environment.

Table 5. Result of Independent Samples *t* Test for Students' Perceived Classroom Environment by Subject Combination

Variable	<i>t</i>	<i>df</i>	<i>p</i>
Classroom Environment	4.461	637	.001

According to Table 5, it was found that there was a significant difference in students' perceived classroom environment by combination ($p < 0.001$). So, students' perceived classroom environment for subject combination 7 seems to be better than that of combination 1 students.

Comparison of Students' Perceived Classroom Environment by School Type

Table 6. Descriptive Statistics for Students' Perceived Classroom Environment by School Type

Variable	School Type	N	Mean	SD	Mean Difference
Classroom Environment	Private	172	165.52	15.80	10.50
	Public	467	155.02	17.59	

Table 6 showed that there was a difference in mean scores by school type in students' perceived classroom environment.

Table 7. Result of Independent Samples *t* Test for Students' Perceived Classroom Environment by School Type

Variable	<i>t</i>	<i>df</i>	<i>p</i>
Classroom Environment	6.873	637	.001

According to Table 7, it was found that there was significant difference in students' perceived classroom environment by school type ($p < 0.01$). So, private school students' classroom environment seems to be better than public school students.

Descriptive Statistics of Students' Academic Motivation

Table 8. Descriptive Analysis of Students' Academic Motivation

Variables	Mean	SD	Mean Percentage
Expectancy	48.64	5.22	81.07%
Value	59.02	6.08	84.31%
Affective	19.64	3.21	78.56%
Total	127.31	11.98	82.67%

This table showed that the mean score of students' value component of motivation is the highest in all academic motivation.

Comparison of Male and Female Students' Academic Motivation

Table 9. Descriptive Statistics for Students' Academic Motivation by Gender

Variable	Gender	N	Mean	SD	Mean Difference
Academic Motivation	Male	277	124.57	14.07	-4.83
	Female	362	129.40	9.61	

The results of Table 9 showed that female students seem to be higher in academic motivation than male students because the mean score of female students was greater than that of male students.

Table 10. Result of Independent Samples *t* Test for Students' Academic Motivation by Gender

Variable	<i>t</i>	<i>df</i>	<i>p</i>
Academic Motivation	-5.149	637	.001

According to Table 10, it was found that there was a significant difference between academic motivation of male and female students ($t = -5.149, p < 0.05$). It indicated that the academic motivation of female students is better than that of male students.

Comparison of Grade 10 and Grade 9 Students' Academic Motivation

Table 11. Descriptive Statistics for Students' Academic Motivation by Grade

Variable	Grade	N	Mean	SD	Mean Difference
Academic Motivation	Grade 10	328	126.98	10.69	-.67
	Grade 9	311	127.65	13.22	

There was slight difference in mean scores by grade in students' academic motivation. Again, to find out difference significantly, *t* test was used. It was reported in Table 12.

Table 12. Result of Independent Samples *t* Test for Students' Academic Motivation by Grade

Variable	<i>t</i>	<i>df</i>	<i>p</i>
Academic Motivation	-.704	637	.482

According to Table 12, it was found that there was no significant difference in students' academic motivation by grade ($p > 0.05$).

Comparison of Students' Academic Motivation by Subject Combination

Table 13. Descriptive Statistics for Students' Academic Motivation by Subject Combination

Variable	Combination	N	Mean	SD	Mean Difference
Academic Motivation	7	342	128.91	11.27	3.45
	1	297	125.46	12.52	

The result of Table 13 was found that combination 7 students likely to be higher in their academic motivation than combination 1 students because the mean score of combination 7 students was greater (mean = 128.91) than that of combination 1 students (mean = 125.46).

Table 14. Result of Independent Samples *t* Test for Student' Academic Motivation by Subject Combination

Variable	<i>t</i>	<i>df</i>	<i>p</i>
Academic Motivation	3.670	637	.000

According to Table 14, it was found that there was significant difference in students' academic motivation by subject combination ($p < 0.001$). So, combination 7 students were found higher academic motivation than that of combination 1 students.

Comparison of Private School and Public School Students' Academic Motivation

Table 15. Descriptive Statistics for Students' Academic Motivation by School Type

Variable	School Type	N	Mean	SD	Mean Difference
Academic Motivation	Private	172	130.84	9.368	4.839
	Public	467	126.00	12.573	

The result of Table 15 showed that private school students were higher academic motivation than public school students because the mean score of private school students was greater than that of public school students.

Table 16. Result of Independent Samples *t* Test for Student' Academic Motivation by School Type

Variable	<i>t</i>	<i>df</i>	<i>p</i>
Academic Motivation	4.598	637	.000

According to Table 16, it was found that there was significant difference in students' academic motivation by school type ($p < 0.001$). Thus, private school students were found higher academic motivation than public school students.

Relationship between Perceived Classroom Environment and Academic Motivation of High School Students

According to Table 17, the results showed that perceived classroom environment of students was positively moderate correlated with academic motivation ($r = .517$, $p < 0.01$). Thus, the better the classroom environment the students have in the higher academic motivation the students increase.

Table 17. Relationship between Perceived Classroom Environment and Academic Motivation

Variable	Classroom Environment	Academic Motivation
Classroom Environment	1	.517**
Academic Motivation		1

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

According to the simple linear regression result, correlation coefficient (R) = 0.517 and adjusted R square was 0.226. It can be concluded that 27% of academic motivation can be predicted from classroom environment.

Conclusion, Discussion and Recommendation

Today classroom environment and academic motivation play a vital role in achieving the goals of students. Students are needed to establish and maintain a positive learning environment for attaining success. In order to promote and strengthen the academic motivation of students, the parents and teachers should notice and consider the following.

- Parents should be firm and fair when they discipline their child. Children need reasonable discipline to be independent and responsible.
- Parents should teach their child to be responsible at school.
- Parents should maintain a good parent-child relationship.
- Parents should listen to their child talks to them, especially about school.
- Parents should interest school activities that encourage learning.
- Parents should praise their children for trying hard and for being successful.
- Teacher should try hard to provide good classroom environment for combination 1 students.
- Teacher should stimulate combination 1 students so that they are interested in learning.

- Teacher should help the students to feel the utility of what they learn by relating them to practical life situations.
- Teacher should develop positive attitude in pupils towards learning itself and proper teacher-pupil relationship is basic to such an attitude.

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The Impact of Academic Self-efficacy on Student Engagement of Grade 9 and Grade 10 Students in Mogaung Township

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Abstract

The primary purpose of the present study was to investigate the impact of academic self-efficacy on student engagement of Grade 9 and Grade 10 students in Mogaung Township with gender and grade. The research design for the study was quantitative research design and survey method. To investigate this purpose, 952 high school and high (branch) school students (452 males and 500 females) who were randomly selected in Mogaung Township, Kachin State, as participated in this study. The two questionnaires; Academic Self-efficacy Questionnaire (ASQ) (Owen and Froman (1988)), consisting 32 items, and Student Engagement Questionnaire (SEQ) (Handelsman and colleagues (2005)), consisting 23 items, were applied to collect the data from students in Moegaung Township. The reliability coefficient for ASQ was .86 and for SEQ was .84. The collective data were analyzed by using descriptive and inferential statistics such as independent sample *t* test. The result of *t* test showed that there was significant difference in academic self-efficacy and student engagement by gender and grade. The Pearson product-moment correlation result revealed that a positively significant relationship ($r=.828$) was found between academic self-efficacy and student engagement. Students' academic self-efficacy should be developed with the help of teachers and parents so that they might engage in their learning willingly and get success in their learning.

Keywords: academic self-efficacy, student engagement

Introduction

Students are the treasures in implementing a developed country. So, they need to have the ability to learn more effectively. Students' ability to learn depend on their self-efficacy. Self-efficacy is defined "as beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands" (Wood and Bandura, 1989). Students who have strong academic self-efficacy can engage in their learning more effectively.

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Academic self-efficacy can be defined as fostering a high level of motivation, academic accomplishments, and developing intrinsic interest in academic subject matter. It refers to an individual's belief (conviction) that they can successfully achieve at a designated level on an academic task or attain a specific academic goal (Bandura, 1997). To achieve academic goal, the academic self-efficacy is a fundamental factor and can influence on the student engagement.

Student engagement is the degree to which students are engaged in learning in the formal education process and refers to the time, effort, and energy they commit to educational learning tasks, such as school-related learning activities and coursework. It comprises implicit mental state and mode of thinking and explicit behaviors. It can be also influenced by student's academic self-efficacy, expectations and perceptions, balances between challenge and appropriate course workload. Hence, the impact of academic self-efficacy on student engagement is needed to examine in order to increase the students' ability to learn.

Aims of the Study

The main aim of this study is to investigate the impact of academic self-efficacy on student engagement of Grade 9 and Grade 10 students in Mogaung Township. The specific objectives are

1. To examine the effect of students' gender differences in academic self-efficacy and student engagement.
2. To find out the effect of grade differences in academic self-efficacy and student engagement.
3. To find out the relationship between academic self-efficacy and student engagement.

Definitions of Key Terms

Self-efficacy is defined by Bandura as a person's set of beliefs regarding their ability to perform (Bandura, 1994).

Academic self-efficacy refers to an individual's belief (conviction) that they can successfully achieve at a designated level on an academic task or attain a specific academic goal (Bandura, 1997).

Student engagement is a different type of outcome variable due to the fact that it reflects a process instead of an outcome (Galyon et al., 2012).

Review of Related Literature

Self-efficacy can be seen as the ability to persist and a person's ability to succeed with a task. Academic self-efficacy is the belief one has regarding educational abilities to produce desired outcomes in future situations. Bandura (1986) noted, "Students' beliefs about their capabilities affect how they approach the future. Students who develop a strong sense of self-efficacy are well-equipped to educate themselves when they have to rely on their own initiative".

An individual's sense of academic self-efficacy influences the level of effort they put forth, their persistence and perseverance when confronted with challenges, and their resilience in the face of obstacles.

Briefly, academic self-efficacy refers to ability to do course work, regulate learning activities, and meet expectations and engagement in academic task. Hence, academic self-efficacy has become an important factor that will affect students' choices of their learning task and behaviors, as well as their mentality and emotions on learning. Moreover, student engagement has been found playing a key to success in learning.

Student engagement is comprised of four different factors: skills, emotional, participation/interaction, and performance (Handelsman, Briggs, Sullivan, & Towler, 2005). The skill engagement factor focuses heavily on students' participating their skills such as taking notes, attendance, and completing assignments. The emotional engagement factor consists of intrinsic involvement in classes like desire to learn the material, applying the material to one's life, and finding ways to make the class more interesting. The participation/interaction factor examines behavioral engagement with the material like raising your hand in class, asking questions, and engaging in class discussions. The performance engagement factor on extrinsic motivation like getting good grades and doing well on tests. Thus, these factors seem to relate to academic self-efficacy because they tend to reflect the engagement ability of the students to their respective courses.

Student engagement in classroom activities also fosters greater gains in students' academic, emotional, social and behavioral achievement (Klem and Connell, 2004). It is used to depict student willingness to participate in routine school activities, such as attending classes, submitting required work and following teachers' instructions in class (Chapman, 2003).

Student engagement is not a one-dimensional construct (Fredericks et al., 2004). It has many components (Newmann, 1989). Conceptually, student engagement involves both student's behavior at school and their psychological or emotional attachment to school. It refers not only to the events taking place within the classroom, but also to those that occur outside the classroom (Fin, 1993). The multi-dimensional definition of engagement focuses on the cognitive, behavioral and affective indicators of student engagement (Skinner and Belmont, 1993).

Factors influencing student engagement are individual influences, classroom influences, and out-of-school influences. Individual influences on student engagement are competence, autonomy, intrinsic and extrinsic motivation, interest, purpose of task and achievement goals, govern students' engagement in school and ultimate achievement (Wigfield et al., 1998).

Classroom influences on student's engagement depends on not only influence of teacher behavior but also influence of peers. The teacher's ability to structure the classroom is the strongest predictor of student engagement (Skinner and Belmont, 1993). In addition to the need for well-structured learning environments and close teacher relationships, students are able to focus more of their attention to learning if their peers support and like them (Battistich et al., 1995).

Next, a student's use of out-of-school time has a dramatic impact on their engagement in learning. Participating in structured activities has the most positive effect on student engagement (Jordan and Nettles, 1999).

Thus, student engagement in learning is influenced by students' perception of their intellectual abilities, interests and goals. Moreover, positive relationships with teachers, family members and peers are also vital in supporting and motivating student engagement and achievement.

Method and Procedures

This study was started to conduct in September 2016. As an initial phase of this study, the pilot testing was carried out in the third week of August, 2016. For pilot study, 100 students of Grade 9 and Grade 10 from No.26 Basic Education High School, Mandalay were selected. Based on the results of the pilot study, the weaknesses of wording and questions which were inappropriate and incomplete responses were modified. After

modifying the questionnaires, these were distributed to students from selected schools on the last week of November 2016. Then, the data were analyzed by SPSS version of 22 for quantitative data.

Participants

A total of 952 Grade 9 and 10 students including 452 males and 500 females were selected as the participants of this study by using random sampling technique from different high school and high school (Branch) in Mogaung Township, Kachin State.

Instrument

In this study, Academic Self-efficacy Questionnaire (ASQ) consisted of total 32 items (Owen and Froman (1988)) and Student Course Engagement Questionnaire (SCEQ)" developed by Handelsman and colleagues (2005), 23 items, were used to collect data from Grade 9 and Grade 10 students.

Two instruments were used for this research in order to obtain data from the students. Students' academic self-efficacy was measured using the Academic Self-efficacy Questionnaire (ASQ) and Student engagement was measured using the Student Engagement Questionnaire (SEQ). Both the Academic Self-efficacy Questionnaire (ASQ) and the Student Engagement Questionnaire (ESQ) are a four-point likert scale questionnaire, designated by "strongly disagree" as "1", "disagree" as 2, "agree" as 3 and "strongly agree" as 4 After developing the two instruments, the initial drafts of the questionnaires were checked by the academic supervisor and expert reviews were conducted to have content validity. Expert reviews and contents were taken from Educational Psychology experts of Sagaing University of Education and Yangon University of Education.

Findings

Descriptive statistics revealed that mean and deviation of students' academic self-efficacy for Grade 9 students and Grade 10 students were 86.62 and 12.319 (see Table 1). Based on the descriptive statistics shown in Table 1, it can be estimated that the students' academic self-efficacy was somewhat satisfactory.

Table 1. Descriptive Statistics for Academic Self-efficacy of Grade 9 Students and Grade 10 Students

Variables	<i>N</i>	Mean	<i>SD</i>	Minimum	Maximum
Academic Self-efficacy	952	86.62	12.319	44	124

Note: *SD* = Standard Deviation

Gender based analysis was conducted to find out the differences in academic self-efficacy among male and female students by using independent sample *t* test. The result of *t* test which showed the comparison of academic self-efficacy between male and female students was shown in Table 2.

Table 2. The Result of Independent Sample *t* test for Gender Differences in Students' Academic Self-efficacy

Variable	Grade	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Academic Self-efficacy	Male	452	84.19	13.220	-5.83	880.7	.000
	Female	500	88.81	11.005			

According to Table 2, there was significant difference in academic self-efficacy by gender. It was revealed that male students were significantly different from female students of academic self-efficacy ($t = -5.83$, $p = .000$). The effect size ($d = .38$) was smaller to median or typical according to Cohen (1998). Based on the result of *t* test, there was significant difference between male and female students at 0.001 level. Therefore, it could be interpreted that female have high academic self-efficacy more than male students.

Grade based analysis was conducted to find out the differences in academic self-efficacy among Grade 9 students and Grade 10 students.

Table 3. The Result of Independent Sample *t* test for Grade Differences in Students' Academic Self-efficacy

Variable	Grade	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Academic Self-efficacy	Grade 9	479	83.96	12.519	-6.84	945.31	.000
	Grade 10	473	89.30	11.519			

According to Table 3, there was significant difference in academic self-efficacy by grade. It was revealed that Grade 9 students were significantly different from Grade 10 students of academic self-efficacy ($t = -6.84, p = .000$). The effect size ($d = .44$) was smaller to median or typical according to Cohen (1998). Since there was significant difference between Grade 9 students and Grade 10 students at 0.001 level, it could be interpreted that Grade 10 students have high academic self-efficacy more than Grade 9 students.

Then, descriptive statistics for mean and standard deviation of student engagement were analyzed.

Table 4. Descriptive Statistics for Student Engagement of Grade 9 Students and Grade 10 Students

Variable	N	Mean	SD	Minimum	Maximum
Student Engagement	952	66.84	9.205	31	91

Gender based analysis was conducted to find out the differences in student engagement among male and female students using independent sample *t* test was used.

Table 5. The Result of Independence Sample *t* test for Gender Differences in Student Engagement

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Student Engagement	Male	452	64.66	9.750	-7.06	885.54	.000
	Female	500	68.81	8.208			

According to Table 5, there was significant difference in student engagement by gender. It was revealed that male students were significantly different from female students of student engagement ($t = -7.06, p = .000$). The effect size ($d = .47$) was smaller to median or typical according to Cohen (1988). Since the result of t test was significant difference between male and female students at 0.001 level, it could be interpreted that female students have high student engagement more than male students.

Next, grade based analysis was conducted to find out the differences in student engagement among Grade 9 and Grade 10 students.

Table 6. The Result of Independence Sample t test for Grade Differences in Student Engagement

Variable	Grade	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Student Engagement	Grade 9	479	65.48	9.408	-4.65	950	.000
	Grade 10	473	68.22	9.791			

According to Table 6, there was significant difference in student engagement by grade. It was revealed that Grade 10 students were significantly different from Grade 9 students of student engagement ($t = -4.65, p = .000$). The effect size ($d = .29$) was smaller to median or typical according to Cohen (1988). Therefore, it could be interpreted that Grade 10 students have high student engagement more than Grade 9 students.

In order to explore the relationship between academic self-efficacy and student engagement of Grade 9 and Grade 10 students in Mogaung Township, the Pearson Product-Moment Correlation Coefficient was calculated.

Table 7. Relationship Between Academic Self-efficacy and Student Engagement

Variables	Academic Self-efficacy	Student Engagement
Academic Self-efficacy	-	.828**
Student Engagement	.828**	-

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

By the result of Table 7, there was a statistically significant correlation in academic self-efficacy and student engagement ($r = .828, p = .02$). Therefore, there was a positive relationship between academic self-efficacy and student engagement. This means that students with high levels of academic self-efficacy performed their engagement effectively in their learning.

Finally, simple linear regression was conducted to investigate how well academic self-efficacy of students predicts their engagement. The result was statistically significant. The adjustment R squared value was (.686). This indicates that 68% of the variance in engagement of students was explained by the academic self-efficacy of students.

Table 8. Linear Regression Analysis Summary of Students' Academic Self-efficacy in Predicting Student Engagement

Variables	<i>B</i>	β	<i>t</i>	<i>R</i>
	12.251		11.144***	.828
Academic Self-efficacy	.619	8.28	45.525***	

Note: *** $p < 0.001$

Then, the model can be defined as in the following equation:

$$SE = 12.251 + 0.619AS$$

SE = Student Engagement

AS = Academic Self-efficacy

Conclusion

Quality assurance of education is the core to build a developed country. Among the factor influencing quality assurance of education in Myanmar, students' factor, especially their academic self-efficacy and engagement is primary and crucial. In order to fulfill the demand of education sector, students' academic self-efficacy and engagement are necessary to be high in their learning process. Academic self-efficacy influences the level of effort they put forth, their persistence and perseverance when confronted with challenges, and their resilience in the face of obstacles. And also, student engagement has been found playing a key to success in learning. If the students are high in academic self-efficacy,

their student engagement will high in their academic activities. The more they have student engagement, the more they get successful in their learning. By studying about students' self-efficacy, teachers can help their students to improve their engagement. Improving student engagement can create effective learners and subsequently can develop conducive learning environment. Hence this study truly contributes the field of educational psychology, especially educational guidance and counselling, and then can provide the quality assurance of education for our country, Myanmar.

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Self-efficacy, Locus of Control and Students' Perceptions on Parental Involvement of Grade 8 and Grade 9 Students

Ohmmar Tin¹ & Ni Ni Win²

Abstract

The main aim of this study is to investigate self-efficacy, locus of control and students' perceptions on parental involvement of Grade 8 and Grade 9 students in Taung Tha Township. Descriptive survey method was applied for this study. In this study, the sample was taken 411 Grade 8 students and 480 Grade 9 students from four high schools in Taung Tha Township. Students' self-efficacy was measured by using self-in-school instrument conducted by Smith. In this instrument, there was comprised of 15 items. Locus of control was measured by using Levenson Multidimensional Locus of Control Inventory (Levenson) which composed of 12 items. Then, students' perceptions on parental involvement were measured by using the Importance of Parent Involvement Scale (DePlanty, Coulter-Kern, & Duchane) which was comprised of 11 items which is composed of three subscales: parent structure, time management and school attendance. The questionnaires for self-in-school (self-efficacy) and students' perceptions on parental involvement were rated on 5-point Likert scale and locus of control questionnaire was coded on 4-point Likert scale respectively. In order to study mean and standard deviation on self-efficacy, locus of control and students' perceptions on parental involvement, descriptive statistics was used. According to data obtained, there were significant differences in self-efficacy, locus of control and students' perceptions on parental involvement by gender and grade. Female students were higher in these variables than male students. Moreover, Grade 9 students had higher in self-efficacy and perceptions on parental involvement than Grade 8 students. But, Grade 9 students were less in locus of control than Grade 8 students. Then, there was significant difference in locus of control by self-efficacy level (low, moderate and high). Furthermore, Pearson correlation was conducted to explore the relationship among self-efficacy, locus of control and students' perceptions on their parental involvement. This finding indicated that there was also significantly positive relationship among students' self-efficacy, locus of control and perceptions on parental involvement. This means that students' perceptions on parental involvement may influence at some extent on the development of self-efficacy and locus of control of the students. Thus, it is necessary to emphasize the study of students' perceptions on parental involvement as one of the factors for enhancing

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students' self-efficacy and locus of control which in turn increasing academic success in education field.

Keywords: Self Efficacy, Self -in- School, Locus of Control, Parental Involvement, Perception on Parental Involvement

Introduction

In education setting, both psychosocial development and students' perceptions on parental involvement in their education have been a great concern for educated individuals. The role of self-efficacy and locus of control have been supported in research as factors associated with education (Tella, Tella & Adika, 2008). In addition, researchers have indicated that parental involvement is important to student success (Gurian, n.d.); however, parental involvement has been studied from perspectives of the students. In this study, the researcher focused on high school students' perceptions on their parental involvement in their education the importance of their parental involvement in their education by grade level, gender and their attending school.

Aim of the study

The main purpose of the study is to study self-efficacy, locus of control and perceptions on parental involvement of Grade 8 and Grade 9 students in Taung Tha Township.

Definition of key terms

Self-Efficacy: Self-Efficacy is defined as the extent to which individuals believe that they have the ability to complete tasks either successfully or unsuccessfully (Bandura, 1994).

Self-in-School: Originally developed by Smith (1988), Self-in-School (SIS) is a measure of academic self-efficacy.

Locus of Control: Locus of control is a personality trait involving the extent to which individuals believe that they can control the outcomes of a particular event (Rotter, 1966).

Parental Involvement: Parental involvement is defined as the extent to which parents are participating in and contributing to their child's education by attending programs and conferences at school, providing a place for

homework and study, talking to their child about school and the need for education (Epstein, 2007).

Perceptions on Parental Involvement: Perceptions on parental involvement is defined as the students' perceptions to which parents are participating in and contributing to their child's education by attending programs and conferences at school, providing a place for homework and study, talking to their child about school and the need for education.

Reviewed of Related Literature

Theoretical Framework of Self-Determination Theory (SDT)

The basic assumptions of SDT are that (a) human beings are active (rather than passive) in their development, (b) human beings are naturally inclined toward growth and development, and (c) human beings have a set of basic psychological needs that are universal for all people (Vansteenkiste & Ryan, 2013).

Developed during the mid 1980s, the theory was first introduced and accepted as a valid empirical theory and has been applied to many different areas in social psychology (e.g., sports, health care, work demands, parenting, and teaching) within the last decade (Deci & Ryan, 2000, 2008).

In a study that was a key to the emergence of SDT, Deci and Ryan (2000) focused on intrinsic motivation, which is the initiation of an activity for its own sake because of self-interest instead of doing an activity to achieve an external goal. SDT was expanded upon when researchers differentiated between intrinsic and extrinsic motivation and identified three main intrinsic needs that involve self-determination: (a) need for competence, (b) need for autonomy, and (c) need for relatedness (Deci & Ryan, 1991, 1995). SDT also pertains to goal attainment, which is the degree to which individuals seek to satisfy their psychological needs and attain their valued outcomes. According to SDT, an understanding of human motivation requires a consideration of innate psychological needs for competence, autonomy, and relatedness (Deci & Ryan, 2000). Specifically, motivation is the innate or learned concept of satisfying intrinsic and extrinsic needs (Deci & Ryan, 1980, 1985, 1991).

Deci (1971) investigated the effects of external rewards on intrinsic motivation and three of the components of SDT are competence, autonomy, and relatedness. Many studies have shown individual differences in locus of

control. Rotter (1966) saw locus of control as being very general, whereas subsequent research suggests that it may be specific to different domains (e.g., academic, health, sports, etc.).

Levenson (1973) provided another model that presented an alternative to Rotter's conceptualization view of locus of control (internal to external). Levenson's (1973) model expanded on Rotter's model believing that an internal orientation will increase one's motivation to continue in an activity, while external orientation decreases one's willingness to persist in an activity where one's feelings have very little ability to influence the activity or outcome.

As it related to definitions of parental involvement, Hoover-Dempsey and Sandler (1955) conceptualized it as having two expressions, home-based activities, which include helping with homework, monitoring the child's progress and engaging in activities that would promote the interest of the child, and school based activities, which include attending Parent Teacher Conferences, volunteering at school and attending school functions.

Epstein (2009) has identified six key types of parental involvement, namely, parenting, communicating, volunteering, learning at home, decision making and collaboration with the community.

Methodology

In this study, the target population was Grade 8 and Grade 9 students from selected four high schools in Taung Tha Township. By using simple random sampling method, the sample of students was identified. The total numbers of the sample for this study were 891 (417 males, 474 females) students from the selected high schools to participate in this study.

Descriptive survey research design was used in this study. Also, quantitative research method was used to find out the results.

Instrumentation

In this study, questionnaire for self-efficacy (self-in-school) was developed by Smith (1988). Also, Levenson Multidimensional Locus of Control Inventory (Levenson, 1973, 1981) was developed to measure locus of control. Then, the Importance of Parent Involvement (DePlanty, Coulter-

Kern, & Duchane, 2007) was developed to examine student's perceptions on their parental involvement in their education

Data Analysis and Findings

Descriptive Statistics for Self-Efficacy of the Students

In this study, the descriptive analysis of self-efficacy of the students was computed in this section. The result was showed in Table 1.

Table 1. Descriptive Statistics for Self-Efficacy of the Students

Variable	N	Mean	Medium	SD	Minimum	Maximum
Self-Efficacy	891	66.53	68	6.16	32	75

In Table 1 showed that the students from selected high schools in Taung Tha Township had high in self-efficacy.

Descriptive Statistics for Self-Efficacy of the Students by Gender

In this study, the descriptive statistics of self-efficacy of the students was computed by gender. The result showed that the mean score of female students was higher than that of male students in self-efficacy. So, female students had higher in self-efficacy than male students. To see more clearly this, independent sample *t* test and figure were used. Then, the result showed in Table 2.

Table 2. Descriptive Statistics for Self-Efficacy of the Students by Gender

Variable	Gender	N	Mean	SD	<i>df</i>	<i>t</i>	<i>p</i>
Self-Efficacy	Male	417	64.29	7.23	889	-10.84***	.000
	Female	474	68.50	4.13			

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

Table 2 showed that female students from selected high schools in Taung Tha Township had high in self-efficacy. So, it can be concluded that there was gender effect on self-efficacy.

Descriptive Statistics for Self-Efficacy of the Students by Grade

Table 3. Descriptive Statistics for Self-Efficacy of the Students by Grade

Variable	Grade	N	Mean	SD	df	t	p
Self-Efficacy	Grade 8	411	65.90	6.86	889	-2.82**	.006
	Grade 9	480	67.06	5.43			

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

Table 3 showed that Grade 8 students had less in self-efficacy than those of Grade 9. So, the Grade 9 students had the higher in their self-efficacy. Therefore, it can be interpreted that there was grade effect on self-efficacy.

Descriptive Statistics for Locus of Control of the Students

In this section, the descriptive statistics of locus of control of the students was computed. The result was showed in Table 4.

Table 4. Descriptive Statistics for Locus of Control of the Students

Variable	N	Mean	Medium	SD	Minimum	Maximum
Locus of Control	891	42.97	43	3.50	29	50

In Table 4, mean, medium, standard deviation, minimum and maximum scores of locus of control of the students were shown. The mean score of locus of control of the students was 42.97 (SD=3.50). The actual scores for locus of control of the students ranged from 29 to 50. Thus, the students from selected high schools in Taung Tha Township had high in locus of control.

Descriptive Statistics for Locus of Control of the Students by Gender

Table 5. Descriptive Statistics for Locus of Control of the Students by Gender

Variable	Gender	N	Mean	SD	<i>df</i>	<i>t</i>	<i>p</i>
Locus of Control	Male	417	42.32	3.66	889	-5.30***	.000
	Female	474	43.55	3.24			

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

Table 5 showed that there was statistically significant difference in locus of control between male and female students. The current study revealed that male students were less in locus of control than female students. So, female students had better than male students in locus of control. Therefore, it can be concluded that there was gender effect on locus of control.

Descriptive Statistics for Locus of Control of the Students by Grade

Table 6. Descriptive Statistics for Locus of Control of the Students by Grade

Variable	Grade	N	Mean	SD	<i>df</i>	<i>t</i>	<i>p</i>
Locus of Control	Grade 8	411	43.28	3.81	889	2.41*	.018
	Grade 9	480	42.71	3.18			

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

Table 6 showed that there was statistically significant difference in locus of control between Grade 8 and Grade 9 students. This finding was consistent with the findings of earlier studies conducted by Angela Roddenberry in 2007. In the present study revealed that Grade 8 students had more in locus of control than Grade 9 students. So, Grade 8 students had better in locus of control and more belief everything than those of Grade 9.

Descriptive Statistics for Students' Perceptions on Parental Involvement

Table 7. Descriptive Statistics for Students' Perceptions on Parental Involvement

Variable	N	Mean	Medium	SD	Minimum	Maximum
PPI	891	42.42	43	5.67	11	55

Note: PPI= Students' Perceptions on Parental Involvement

In Table 7, the mean score of students' perceptions on their parental involvement was 42.42 (SD=5.67). The actual mean scores for students' perceptions on their parental involvement ranged from 11 to 55. So, the students from selected high schools in Taung Tha Township were high in perceptions on their parental involvement.

Descriptive Statistics for Students' Perceptions on Parental Involvement by Gender

Table 8. Descriptive Statistics for Students' Perceptions on Parental Involvement by Gender

Variable	Gender	N	Mean	SD	<i>df</i>	<i>t</i>	<i>p</i>
Parental Involvement	Male	417	41.37	5.68	889	-5.27***	.000
	Female	474	43.34	5.49			

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

Table 8 showed that there was statistically significant difference in students' perceptions on parental involvement between male and female students. This finding was consistent with Caribbean Educational Research Journal (2014). The results in the present revealed that male students had less in perceptions on their parental involvement than female students.

Descriptive Statistics for Students' Perceptions on Parental Involvement by Grade

To investigate the differences in students' perceptions on parental involvement by grade, the mean and standard deviation of the students were computed. The result showed that students' perceptions on parental involvement had mean differences by grade level. The mean score of Grade 8 students had less than that of Grade 9 students in students' perceptions on their parental involvement. To examine significant difference between Grade 8 and Grade 9 students, independent sample *t* test was used. So, the result was showed in Table 9.

Table 9. Descriptive Statistics for Students' Perceptions on Parental Involvement by Grade

Variable	Grade	N	Mean	SD	df	<i>t</i>	<i>p</i>
Parental Involvement	Grade 8	411	41.85	6.11	889	-2.78**	.006
	Grade 9	480	42.90	5.22			

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

Table 9 showed that there was statistically significant difference in students' perceptions on their parental involvement between Grade 8 and Grade 9 students. This finding was not consistent with the findings of earlier studies conducted by Helen Faye Clay-Spotser (2015). The results in the current study revealed that Grade 8 students had less in perceptions on their parental involvement than Grade 9 students

The Relationship Among Self-Efficacy, Locus of Control and Students' Perceptions on their Parental Involvement

In literature, students' perceptions on their parental involvement were interrelated to self-efficacy and locus of control of the students. After comparing these three variables of Grade 8 and Grade 9 students according to gender, grade and school, in order to find out how self-efficacy, locus of control and students' perceptions on their parental involvement were related, Pearson Product Moment correlation was used. The correlation coefficient among self-efficacy, locus of control and perceptions on parental involvement of students was shown in Table 10.

Table 10. Intercorrelation for Self-Efficacy, Locus of Control and Students' Perceptions on Parental Involvement of Grade 8 and Grade 9 Students

Variables	SE	LOC	PPI
SE	-	.378**	.420**
LOC	.378**	-	.273**
PPI	.420**	.273**	-

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

SE=Self-Efficacy, LOC=Locus of Control, PPI=Students' Perceptions on Parental Involvement

Table 10 showed the correlation among self-efficacy, locus of control and students' perceptions on their parental involvement of Grade 8 and Grade 9 students. It indicated that students' perceptions on the importance of parents' involvement were significantly related to the school self-efficacy ($r=.420$, $p<.001$) and the locus of control of students ($r=.273$, $p<.001$) too. Moreover, self-efficacy and locus of control of the students were positively related to each other. Based on these findings, it appears that the students' perceptions on the importance of parental involvement are positively related to self-efficacy and locus of control of the students about their psychological processes within a social setting.

Conclusion

Based on the results reported in chapter 4, statistically significant differences were found in school self-efficacy, locus of control and students' perceptions on the importance of their parental involvement in their education by gender. Female students had significantly higher scores on these three variables than male students. So, the parents, educators and peer groups should more help the boys to improve their ability, belief and perceptions on parents' involvement. Then, statistically significant differences were found in school self-efficacy, locus of control and students' perceptions on the importance of their parental involvement in their education by grade level. The Grade 9 students had significantly higher scores in self-efficacy and students' perceptions of their parental involvement than those of Grade 8. The students' grade becomes more

important, the parents more involve towards their children, especially in their children's education. Therefore, parents and others should give equal opportunities in order to be good perceptions for their children. But, Grade 8 students had significantly higher scores in locus of control than those of Grade 9. According to this finding, the researcher assumed that the Grade 8 students had more beliefs and wanted to know everything and lead. So, the parents, teachers and others should practice that the children who have in Grade 9 must have more belief and lead everything. Moreover, statistically significant differences were found in school self-efficacy, locus of control and students' perceptions on the importance of their parental involvement in their education by school.

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An Investigation into Occupational Stress of Teachers from Selected Schools in Loikaw Township

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Abstract

The main purpose of this study is to examine the occupational stress of teachers from some selected schools in Loikaw Township. A total of 215 in-service teachers from selected schools in Loikaw Township were included in this study. Teachers' occupational stress inventory was adapted from Schutz and Long's (1988) occupational stress questionnaire. Teachers' occupational stress questionnaire was comprised of 30 items which is composed of seven factors: role ambiguity, role stress, organizational management, job satisfaction, life satisfaction, task stress and supervisory supports. In this study, descriptive research design and survey method were used. According to descriptive statistics, the participants in this study have low stress level because the total mean score of 65.71 is smaller than the middle score of 90. When examining each factor, all participants in this study have highest level of stress in task stress and lowest level of stress in supervisory support. And then, it can also be found that there was no significant differences between occupational stress of junior and senior teachers but the total mean score of senior teachers is slightly higher than that of junior teachers. When investigating each factor, there was no significant difference in occupational stress between junior and senior teachers. According to the findings of occupational stress of teachers by working experiences, the mean score of teachers who worked above 30 years was highest and that of teachers who worked below 15 was lowest. The result of this study suggested that occupational stress of teachers is one of the most fundamental factors to increase job satisfaction in their working conditions. Thus, it is necessary to emphasize the study of occupational stress as one of the factors to improve their job satisfaction in their working environment.

Keywords: Stress, Occupational Stress, Job Satisfaction

Introduction

There are the most important factors for the social, economic and education growth in any society and the factor of organizing manpower for the development of society is the educational system. Teacher as one element, in particular in the educational system is very important and his

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satisfaction can be really effective in achieving the goals of the educational system. In addition, Mondal et al. (2011) stated that there is no doubt that teaching has become a more demanding and intense job. Not surprisingly, teaching has been identified as one of the professions associated with high to very high levels of occupational stress (cited in Parsa, Alizadeh & Kasraie, 2013). Teacher stress is defined by Kyriacou (1989) as the experience by a teacher of unpleasant emotions, such as tension, frustration, anxiety, anger, and depression, resulting from aspects of work as a teacher (cited in Tennant, 2007).

Guglielmi & Tatrow (1998) mentioned that teacher stress is caused by environmental factors as well as individual characteristics. Major environmental factors include poor working conditions, scarcity of resources, heavy workloads, and student behavior. Individual characteristics can include gender, age, personality and the ability to cope (cited in Sprenger, 2011).

Although there are many theories of occupational stress, this research focuses on Lazarus' cognitive theory of stress. According to this theory, the interaction between person and environment in which particular working situations creates a feeling of being stressed. The variables of occupational stress in this study are role ambiguity, role stress, task stress, life satisfaction, job satisfaction, organizational management and supervisory support. Therefore, by studying teachers' occupational stress, we as the guidance and counselors and researcher can perform completely the needs for changes in education.

Aims of the Study

The main aim to conduct this study is to examine the occupational stress of teachers from selected schools in Loikaw Township.

Definitions of Key Terms

Stress: Stress is a process of behavioral, emotional, mental and physical reactions caused by prolonged, increasing or new pressures that are significantly greater than the availability of coping strategies (Dunham (1992, cited in Ling, 1995).

Occupational Stress: is the experience by a teacher of unpleasant emotions such as tension, frustration, anxiety, anger, and depression, resulting from aspects of work as a teacher (cited in Ling, 1995).

Job Satisfaction: is the pleasant emotional condition resulting from the evaluation of one's job as achieving or facilitating one's job standards (cited in Ho & Au, 2006).

Review of Related Literature

When stress was first studied in the 1950s, the term was used to denote both the causes and the experienced effects of pressures. More recently, however, the word stressor has been used for the stimulus that provokes a stress response (cited in Paulse, 2005).

The word "stress" is defined by the Oxford Dictionary as, "a state of affairs involving demand on physical or mental energy". Stress was derived from the Latin word "stringere", it meant the experience of physical hardship, starvation, torture and pain. In the mid-1950s Hans Selye (1956) defines stress as "the state manifested by a specific syndrome which consists of all the nonspecifically induced changes within the biological system". Moreover, Olson, Mc. Cubbin, Barnes, Muxen, Larsen & Wilson (1989) define stress as a state of tension that arises from an actual or perceived demand that calls for an adjustment or adaptive behavior. Stress results when people perceive a situation as threatening and are unable to cope. Further, Lazarus (1976) proposed that stress occurs when there are demands on a person which tax or exceed his adjustive resources. Kyriacou (1978), on the other hand, defines stress as a response syndrome of negative effect that develops when there are prolonged and increased pressures that cannot be controlled by the coping strategies that the individual has. Hashem Zadeh et al (1979) stated that stress is a physical, mental and chemical response about events in the body that cause fear, excitement, nervously, when he will be angry (cited in Parsa , Alizadeh & Kasraie, 2013).

The most common forms of stress are distress and eustress. According to Fisher (1994) and Keeper and Buselle (1996) positive or good stress, referred to as eustress can act as a motivating agent for an achievement. Individuals who experience eustress will be able to meet job demands and this may help them to increase positive work life. Distress

is negative or destructive stress, as it causes serious ailments or discomforts. It impacts negatively on the organization and the individual's physical and mental system. Schermerhorn, et al. (2000) stated that this could result in reduced performance, absenteeism, job losses, accidents, unethical behavior, dissatisfaction and illness. Individuals who experience distress will not be able to fulfill job demands and this may motivate them to decrease quality of work life (cited in Paulse, 2005).

The sources of stress are many, varied, complex and different for every individual, vary over time and therefore are almost impossible to analyze. Austin, Shah, and Muncer (2005) found that the main sources of stress for teachers from the UK are work-related stressors, such as time management, student discipline, and student motivation. Other sources of teacher stress that have been documented include teaching a child with a disability (Forlin, 1997), discipline and handling difficult students (Onafowora, 2004), adapting to change (Kyriacou, 2001), lack of time (Kyriacou, 1987), inadequate resources (Chaplain, 1995), poor student behavior (Friedman, 1995), multiple roles and responsibilities (Hockley & Hemmings, 2001), and role conflict (Pearlin, 1987), (cited in Makasa, 2013).

The Fountain, (2002) the teaching profession has changed drastically in the last few years, as it has become more focused on "clients," the students and their parents. This makes the teaching environment less formal and teachers' jobs more difficult, as they must deal with more disrespectful students and parents who are more likely to question their decisions. Teachers also must occasionally deal with difficult co-workers, unfriendly work environments and stringent deadlines. As technology changes, teachers must also learn how to integrate new technologies into their classrooms. These situations can easily lead to stress both on and off the job.

Causes of teacher stress can also be broken down into environmental and individual stressors. Most stressors can be found in the work environment and include unfavorable working conditions, heavy workloads, organizational problems, scarcity of resources, lack of support and or autonomy, and decision making. The work environment can also include physical stressors such as task-related noise, crowding, the size of the classroom and or school, safety or youth violence, as well as administrative pressure such as support from managers and or ambiguity.

A major source of teacher stress can be directly attributed to the students. Through survey and interview responses, teachers most commonly refer to students as being responsible for most of their stress (Hastings & Bham, 2003), (cited in Makasa, 2013).

Occupational stress is an individual experience, depending on the traits of individuals, in that not all people react to events the same way (Manthei & Gilmore, 1996; McKenna, 1987). It can result in psychological, physical and behavioral consequences for individuals. These outcomes, in their various forms, can prove quite costly to individuals and organizations to which they belong. For schools, these costs are not just monetary. Student learning can be disrupted or otherwise affected. Psychological consequences include job dissatisfaction, reduced job commitment, anxiety, frustration, anger and of most concern, burnout (Aluja, Blanch & Garcia, 2005; Angerer, 2003), (cited in Makasa, 2013).

Methodology

Research Design and Method

In this study, descriptive research design and survey method were used to be able to achieve the aims.

Sample of the Study

A total of 215 Junior and Senior Teachers were participated, 126 were Junior Teachers and 89 were Senior Teachers.

Instrumentation

The teacher stress inventory was adapted from Schutz and Long's (1988) occupational stress questionnaire. This questionnaire consists of seven factors: role ambiguity, role stress, organizational management, life satisfaction, job satisfaction, task stress and supervisory supports. There was thirty items and five point likert scale was used to analyze it.

Procedure

Then, the researcher requested to the headmasters and headmistresses and teachers from selected schools in Loikaw Township to participate teacher's occupational stress questionnaire and to collect the required data. After collecting and data entry, results for SPSS were carefully interpreted and prepared the findings and conclusion.

Data Analysis and Findings

Descriptive Statistics of Occupational Stress of Junior and Senior Teachers

In order to find out Junior and Senior Teachers' occupational stress, occupational stress questionnaire was used. In terms of descriptive statistics, minimum score, maximum score, mean and standard deviation of Teachers' occupational stress were presented in Table 1.

Table 1. Descriptive Statistics for Occupational Stress of Junior and Senior Teachers

Variable	N	Minimum	Maximum	Mean	SD
Occupational Stress of Junior and Senior Teachers	215	34	101	65.71	12.540

According to Table 1, the minimum score of occupational stress was 34, the maximum score was 101. The mean and standard deviation of the whole sample were 65.71 and 12.540 respectively. The total mean scores 65.71 is less than the theoretical mean scores 90. So, it was said that the occupational stress of teachers has satisfactory level.

In order to know more specifically for teachers' occupational stress, mean and standard deviation were also computed by factors.

Table 2. Descriptive Statistics of Junior and Senior Teachers' Occupational Stress by Seven Factors

Variables	N	Minimum	Maximum	Mean	SD	Mean %
Role Ambiguity	215	3	14	7.43	2.156	49.53%
Role stress	215	4	16	9.10	2.573	45.5%
Organizational Management	215	3	13	6.60	1.969	44%
Task stress	215	6	28	15.22	3.958	50.73%

Variables	N	Minimum	Maximum	Mean	SD	Mean %
Supervisory Support	215	6	25	9.59	3.968	31.97%
Job Satisfaction	215	4	16	8.55	3.069	42.75%
Life Satisfaction	215	4	16	9.28	1.988	46.4%

According to Table 2, the mean percent for role ambiguity is 49.53%, role stress is 45.5%, organizational management is 44%, task stress is 50.73%, supervisory support is 31.97%, job satisfaction is 42.75% and life satisfaction is 46.40%. Among them, the mean percentage of task stress is highest and that of supervisory support is lowest. It showed that the participants in this study had high in task stress and low in supervisory support.

Differences in Occupational Stress of Junior and Senior Teachers by Position

Next, descriptive analysis was conducted to find out the differences in occupational stress of teachers by position. To investigate the significant differences between Junior and Senior Teachers' occupational stress, independent sample *t* test was made. It showed the comparison of occupational stress in position differences (see in Table 3).

Table 3. Differences in Occupational Stress of Junior and Senior Teachers by Position

Position	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Junior Teachers	126	64.94	12.074	-1.072	213	.285	-1.861
Senior Teachers	89	66.80	13.163				

According to Table 3, the mean score of senior teachers, 66.80 is slightly higher than that of junior teachers, 64.94. The result of *t* test indicated that there was no significant difference between Junior and Senior teachers in occupational stress. Teachers' occupational stress did not show

any performance difference between Junior and Senior teachers. Then, to find out the position differences on each factor significantly, independent sample *t* test was conducted again (see in Table 4).

Table 4. Differences for Seven Factors of Junior and Senior Teachers' Occupational Stress by Position

Variables	JT (<i>n</i> =126)		ST (<i>n</i> =89)		<i>t</i>	<i>df</i>	<i>p</i>	MD
	Mean	<i>SD</i>	Mean	<i>SD</i>				
Role Ambiguity	7.56	2.178	7.26	2.124	.995	213	.321	.297
Role stress	8.99	2.581	9.25	2.569	-.715	213	.475	-.255
Organizational Management	6.40	1.816	6.89	2.145	-1.810	213	.072	-.491
Task stress	15.01	3.823	15.52	4.145	-.928	213	.354	-.509
Supervisory Support	9.33	3.929	9.94	4.018	-1.112	213	.268	-.610
Job Satisfaction	8.74	3.044	8.29	3.101	1.050	213	.295	.446
Life Satisfaction	9.09	2.016	9.56	1.924	-1.732	213	.085	-.474

Table 4 showed the mean scores for seven factors of occupational stress of teachers by their position. It indicated that there was no significant difference in occupational stress for each factor by their position.

Differences in Occupational Stress of Junior and Senior Teachers by Working Experience

In order to know teachers' occupational stress by working experience, mean and standard deviation were also computed by using descriptive statistics.

Table 5. Descriptive Statistics for Occupational Stress of Junior and Senior Teachers by Working Experience

Variables	N	Minimum	Maximum	Mean	SD
Below 15 years	57	40	87	63.74	10.525
Between 15 and 30 years	92	38	97	64.93	11.976
Above 30 years	66	34	101	68.48	14.470
Total	215	34	101	65.71	12.540

According to Table 5, the mean score for teachers who worked above 30 years was 68.48, teachers who worked between 15 and 30 years was 64.93 and teachers who worked below 15 years was 63.74. Among them, the mean score of teachers who worked above 30 years was highest and that of teachers who worked below 15 was lowest.

Then, in order to see more clearly the difference in occupational stress of teachers by working experiences, the One Way Analysis of Variance (ANOVA) was conducted (see in Table 6).

Table 6. ANOVA Result for Occupational Stress of Junior and Senior Teachers by Working Experience

Occupational Stress	df	Mean Square	F	p
Between Groups	2	392.697	2.533	.082
Within Groups	212	155.024		
Total	214			

According to Table 6, there was no significant difference among the occupational stress of teachers by their working experiences. It can be said that the occupational stress of teachers was not depend on their working experiences.

Conclusion and Suggestions

Conclusion

The participants of in this study have low stress level because the total mean score of 65.71 is smaller than the middle score of 90. So this situation can be said that the participants of in this study have satisfaction in their working conditions. When examining each factor, all participants in this study have highest level of stress in task stress and lowest level of stress in supervisory support. So, it can be interpreted that the extent of supervisory support which headmasters value their teachers' contributions and care about their well-being were appropriate for the participants and the task for teachers such as paperwork, participating in school activities outside regular working hours that lead to increase stress level were not appropriate for the participants.

Moreover, it can also be found that there was no significant difference between occupational stress of junior and senior teachers. But the total mean score of senior teachers is slightly higher than that of junior teachers. So, it was shown that senior teachers had over load such as the percentage of pass or fail for the matriculation exam and other extra activities that is no directly concerned with their duties and responsibilities. According to the findings of occupational stress of teachers by working experiences, the mean score of teachers who worked above 30 years was highest and that of teachers who worked below 15 was lowest. So, it can also be found that the more experience teachers have more stress than the teachers who have less experience. It can be because the participants in this paper who work above thirty years were older than other teachers who work under thirty years. Although the older people have subject knowledge and can teach effectively their subjects according to their working experiences, they cannot do other extra works which is not directly concerned with their teaching. So, they got occupational stress by the pressure of Myanmar Educational System.

Suggestions

To reduce occupational stress, the individual need to prepare his/ her environment and himself or herself. Personally, the individual can reduce occupational stress through regular exercise and stay healthy living way .In this way, the individual adjust himself with his work.

In addition, to improve the relationship with the colleagues, frequent meetings should be held to discuss the problems and to remove the misunderstanding created among colleagues. The staff members of the school should be treated as brotherly sisterly system and educational tours and excursion should be arranged to develop necessary skills to work with colleagues successfully.

Finally, to reduce the occupational stress of teachers, the authority concern should recognize the factors which allow the occupational stress. So, the result of this study suggested that occupational stress of teachers is one of the most fundamental factors to increase job satisfaction in their working conditions. Thus, it is necessary to emphasize the study of occupational stress as one of the factors to improve their job satisfaction in their working environment.

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The Empathy and Social Functioning of Middle School Students in Ye-U Township

Pa Pa Oo¹ & Khin Thuza Saw²

Abstract

The main purpose of this study is to investigate the empathy and social functioning of middle school students. The study used descriptive survey method. The sample consisted of 270 Grade 8 students and 330 Grade 9 students (male=303, female=297) from selected high schools in Ye-U Township, Sagaing Region. To measure the empathy of the students, a questionnaire to assess cognitive and affective empathy in children (Carsten Zoll and Sibylle Enz) and Davis' Interpersonal Reactivity Index were used. Next, the friendship questionnaire by Simon Baron-Cohen and Sally Wheelwright was modified and used. This study examined not only gender and grade differences in empathy and social functioning of the students, but also levels of parents' education and job impacts on these two variables. According to Pearson correlation results, empathy and social functioning was moderately correlated. Studying the empathy and social functioning of children will support educators and the public to give awareness and enthusiasm in creating better emotional and social skills of their children.

Keywords: empathy, friendship, social functioning, social perspective taking

Introduction

According to Heinz Kohut, empathy is the basis on which any effective relationship, understanding and communication can be built. According to Pederson, empathy and social functioning are crucially important in developing ideas and solutions, effective communication and avoiding or preventing conflicts. Empathy is the capacity to think and feel oneself into the inner life of another person (Kohut, 1984).

In this study, the main research problem is to explore the adolescents' empathetic capacity in association with their social functioning skills. Empathy appears to enhance social functioning by tuning our response to the emotions of another (Smith, 2006; cited in Pineda J.A., et

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al., 2009). Hence, knowing the emotional state of another, and making decisions based on that understanding facilitates the most advantageous response to the situation.

Purpose of the Study

The main aim of the study is to investigate the empathy and social functioning of middle school students.

Definitions of Key Terms

Empathy- Hoffman (2000) described empathy most clearly as "the spark of human concern for others, the glue that makes social life possible".

Prosocial Behavior- Prosocial behavior is described as acts of unselfishness, helping others, and showing empathy (Santrock, 2004).

Social Cognition- Social cognition is the way we form concepts about the social world (Flavell, 1985). Social cognition refers to the ability of the child to understand feelings, thoughts, or intentions of the self (self-knowledge) and others (role-taking).

Social Competence- Bierman (2004) defined social competence as the "capacity to coordinate adaptive responses flexibly to various interpersonal demands, and to organize social behavior in different social contexts in a manner beneficial to oneself and consistent with social conventions and morals".

Social Perspective Taking- Social perspective taking refers to the social cognitive process of inferring and actively considering the point of view of another person (Selman, 1980).

Social Functioning- Social functioning refers to the capacity to interact independently, appropriately, effectively, and on a sustained basis with other individuals.

Review of Related Literature

This research has emphasized on the study of the empathy and social skills of the adolescents who are facing the complexities of the social world. Adolescents signifies a critical and distinct period in the life cycle, marked by rapid cognitive growth that drastically alters how one understands, communicates and functions within the social world (Moshman, 2011, cited in Rubenstein, 2012). The ability to think abstractly

is a skill that is crucial to perceptions of the self and others, as well as interpretations of social interactions and relationships (Case, 1985; 1992; Fischer, 1980; Harter & Monsour, 1992, cited in Rubenstein, 2012). As adolescents move from childhood to adulthood of the life cycle, they come to know and define themselves largely through social interactions.

In general, social cognition is the study of the process in which people make sense of other people and decide how to interact with them (Nan-fa Jiang, 2001). For better understanding of this research, social cognition and its related literature have been firstly described.

Social cognition concerns a field of study regarding how people think about themselves in relation to other people and how they perceive society and its institutions (Zimmer, 1990). The increasing complexity and abstractness of adolescents' thought indicates that they are likely to address more aspects of social relations and relationship than they did as children. Therefore, in their relationships and activities of adolescents' day-to-day lives, the task of establishing an identity occurs. Families, friends, teachers, school, the mass media, the world of work are where adolescents find new roles and understanding of themselves. To be sure, it needs to be considered how adolescents change in their thoughts about the personal world of self and others (Sprinthall & Collins, 1988, cited in Nan-fa Jiang, 2001).

Method and Procedure

Research Design: Descriptive survey method and quantitative approach were used in this study.

Participants: The sample for this research was selected 600 students by using simple random sampling method. Grade 8 and Grade 9 students from selected high schools in Ye-U Township participated in this study. The total sample included 303 male students and 297 female students.

Instruments: In this study, a questionnaire for affective and cognitive empathy of children which was modified from Carsten Zoll and Sibylle Enz that was combined with Davis' Interpersonal Reactivity Index (IRI) was used as instrument to measure empathy. It included two subscales: cognitive empathy with fourteen items and affective empathy with twenty-one items. In addition, the friendship questionnaire which was constructed by Simon Baron-Cohen and Sally Wheelwright (2003) was used to measure social functioning skills of the students.

Procedure: To start the research, the related literature was firstly studied through intensive reading from a variety of sources, especially from books, journals, theses, research papers and internet sources. Next, research instruments were developed under the guidance of the supervisor to get the most correct data. To validate the prepared instrument, expert reviews were requested. After getting permission from the authority concerned, pilot testing was done to assess the reliability coefficient of the respective questionnaires. Thereafter, data collection was accomplished and the researcher analyzed the received data. Finally, the conclusion was drawn based on the research findings.

Research Findings

Table 1. Descriptive Statistics for Empathy by Components

No.	Components	<i>N</i>	Minimum	Maximum	Mean Percent	<i>SD</i>
1	Cognitive Empathy	600	28	69	76.26%	7.929
2	Affective Empathy	600	12	104	75.13%	14.941
3	Total	600	35	169	77.31%	21.561

Table 1 showed that students were slightly better in understanding another's feelings and perspectives than sharing in another's feelings.

Table 2. Descriptive Statistics for Social Functioning by Components

No.	Components	<i>N</i>	Minimum	Maximum	Mean Percent	<i>SD</i>
1	Finding friendship important	600	12	45	68.96%	5.856
2	Liking and being interested in people	600	4	20	68.4%	3.339
3	Total	600	21	65	68.71%	7.881

According to Table 2, the results revealed that students had good social functioning.

Table 3. Comparison of Mean, Standard Deviation and the Result of *t* test on Empathy by Gender

Subscales	Male(N=303)		Female(N=297)		<i>t</i>	<i>df</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>			
Cognitive Empathy	49.39	8.800	55.92	5.161	-11.053	598	.000
Affective Empathy	71.13	15.252	85.27	10.635	-13.149	598	.000
Total Empathy	120.49	22.314	141.02	14.665	-13.296	598	.000

According to Table 3, female students were significantly higher than male students in empathy ($p < .001$). So, the result is consistent with research evidences that females show higher levels of affective empathy than do males (Barnett et al., 1980).

Table 4. Comparison of Mean, Standard Deviation and the Result of *t* test on Social Functioning by Gender

Subscales	Male(N=303)		Female(N=297)		<i>t</i>	<i>df</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>			
Finding friendship important	29.30	5.861	32.80	5.357	-7.651	598	.000
Liking and being interested in people	13.05	3.409	14.33	3.143	-4.781	598	.000
Total friendship qualities	42.24	8.110	47.12	6.820	-7.970	598	.000

As presented in Table 4, female students were significantly higher than male students in total friendship qualities ($p < .001$).

Table 5. Comparison of Mean, Standard Deviation, and the Result of *t* test on Empathy by Grade

Subscales	Grade 8 (N=270)		Grade 9 (N=330)		<i>t</i>	<i>df</i>	<i>p</i>
	Mean	SD	Mean	SD			
Cognitive Empathy	52.94	7.663	52.36	8.143	.886	598	.376
Affective Empathy	79.56	14.808	76.96	14.970	2.128	598	.034
Total Empathy	132.10	21.955	129.47	21.109	1.489	598	.137

Table 5 showed that Grade 8 students had higher mean scores of 132.10 ($SD=21.955$) total empathy than Grade 9 students with mean score 129.47 ($SD=21.109$). But there was no significant difference in cognitive empathy ($p > 0.05$).

Table 6. Comparison of Mean, Standard Deviation, and the Result of *t* test on Social Functioning by Grade

Subscales	Grade 8 (N=270)		Grade 9 (N=330)		<i>t</i>	<i>df</i>	<i>p</i>
	Mean	SD	Mean	SD			
Finding friendship importance	31.94	5.696	30.29	5.888	3.465	598	.001
Liking and being interested in people	14.24	3.437	13.23	3.192	3.713	598	.000
Total friendship qualities	46.14	7.612	43.45	7.901	4.220	598	.000

According to Table 6, the results indicated the significant difference in social functioning between Grade 8 and Grade 9 students ($p < .001$).

Table 7. ANOVA Result for Empathy by Father's Education

Empathy	Sum of Squares	df	Mean Squares	F	p
Between Groups	8245.281	3	2748.427	6.088	.000
Within Groups	269048.917	596	451.424		
Total	277294.198	599			

In studying Table 7, the ANOVA result showed that there were significant differences among four groups of father's education on student's empathy ($p < .001$).

Table 8. ANOVA Result for Empathy by Mother's Education

Empathy	Sum of Squares	df	Mean Square	F	p
Between Groups	8445.094	3	2815.031	6.241	.000
Within Groups	268849.104	596	451.089		
Total	277294.198	599			

The ANOVA result in Table 8 showed that there was significant difference in children's empathy among four groups of mother's education levels.

Table 9. ANOVA Result of Empathy by Father's Job

Empathy	Sum of Squares	df	Mean Square	F	p
Between Groups	7398.039	2	3699.020	8.182	.000
Within Groups	269896.159	597	452.087		
Total	277294.198	599			

In studying Table 9, there was significant difference among three types of father's job on children's empathy, $F=8.182$ ($p < .001$).

Table 10. ANOVA Result of Empathy by Mother's Job

Empathy	Sum of Squares	df	Mean Square	F	p
Between Groups	3991.541	2	1995.770	4.360	.013
Within Groups	273302.658	597	457.793		
Total	277294.198	599			

According to Table 10, there was significant difference on children's empathy in comparing among three types of mother's job, $F=4.360$ ($p < 0.05$).

Table 11. Relationships between Empathy and Social Functioning of Middle School Students

Variables	Cognitive empathy	Affective empathy	Total empathy
Finding friendship important	.462**	.565**	.560**
Liking and being interested in people	.328**	.415**	.407**
Total friendship qualities	.467**	.600**	.586**

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

Table 11 showed the correlation between empathy and social functioning of middle school students. It indicated that all variables of empathy were significantly correlated with overall social functioning skills.

Conclusion

Empathy may be an important factor in learning right from wrong. Empathy also shapes a person's social skills and improves meaningful social relationships. The ability to empathize begins at the early age and develops in accordance with many influential factors such as environment, parenting, and friendships. Actually, environment and family factors are obvious for the development of children's empathic feeling. Personal characteristics such as "personality traits, disposition, reactivity, and temperament", as well as "family nurturance and support", and school factors like size and environment contribute to hostility and aggression between peers in school. The results of Fryxell's study suggested that a child experiencing negative impacts from various factors of their life such as community, peers, and family members could have an effect on how much and how frequently a child feels anger (Fryxell, 2000; cited in Carlie, 2006). Therefore, the role of adults has been a central focus in children's moral development and in developing positive feelings about themselves and others. In children's environment, both parents and teachers are important persons who have responsibilities to cultivate empathy and to teach good social and emotional behaviors. Children hope kind, warmth and understanding from their parents and teachers and they also learn how to show empathy to others and how to create favorable social relationships from their role models. Characteristic development in middle and late childhood included increasing social knowledge which is necessary for a child to have the ability to get along with peers. Social knowledge is a developmental process that is necessary for children to define their "peer status" among others (Santrock, 2004). Social knowledge is the ability of a child to initiate and maintain social relationships; without this it can lead to poor relationships which included bullying others (Santrock, 2004, cited in Carlie, 2006).

Children's environment including home and school should create a safety and warmth environment that is surrounded by empathic feelings and behaviors. If so, the adults' empathic and caring attitudes will influence children's mind and enhance the development of empathy.

Because of time limitation, the present study couldn't give enough information for thorough understanding of children's empathy and social functioning. A longitudinal study on empathy and social functioning concerned with parental experiences and family factors is still needed. Accordingly, the adults, especially, counselors, educationists, and parents, need to facilitate a good quality of home and school with proper communicative and supportive environment to their adolescent children.

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Self-esteem and Aggression of Grade 10 Students

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Abstract

The main purpose of the present study was to investigate self-esteem and aggression of Grade 10 students. The sample consisted of 1000 students (500 males and 500 females) from Aungmyaytharzan Township. The participants were selected by using random sampling method and descriptive research design was used. Data of this study were collected by administering Self-esteem Inventory by Coopersmith (2002) and Aggression Questionnaire by Buss and Warren (2000). The results revealed that significant differences of mean scores existed in self-esteem and aggression with respect to gender. There were significant differences in self-esteem and aggression by birth order and eldest students were highest in self-esteem and middle-born students were highest in aggression. By father's education level, students whose father's education was 3Rs level or primary level was lowest in self-esteem and highest in aggression. By mother's education level, there was significant difference in aggression and students whose mother's education was 3Rs level or primary level was highest in aggression but no significant difference in self-esteem. And then, there was negative correlation between self-esteem and aggression ($r = -.449$). Therefore, the current findings may be benefit for interventions that focus on boosting self-esteem in the treatment of aggression of young students.

Keywords: Self-esteem, Aggression, Aggressive behavior

Introduction

Nowadays aggression is a common problem in students. Aggression of students can lead to antisocial behavior. In present time, all educators need to train the students to be socializing person, to modify their behaviors, to control their emotions and to guide students to believe that aggression is a wrong issue.

Coopersmith (1967) defined self-esteem as “positive and negative attitudes towards oneself (cited in Rossouw, 2010). High self-esteem is essential to human functioning and imbues life with meaning (Pyszczynski et al., 2004). Low self-esteem is linked to aggression, violence, school

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dropout rates, teenage pregnancy, and low academic achievement (Misetich & Delis-Abrams, 2003).

The purpose of this research is to investigate self-esteem and aggression of grade 10 students for the above mentioned facts.

Purpose of the Study

The purpose of the present study is to investigate self-esteem and aggression of grade 10 students from Aungmyaytharzan Township.

Definitions of Key Terms

Self-esteem: Coopersmith (1967) defined self-esteem as “the evaluation which the individual makes and customarily maintains with regard to himself: it expresses an attitude of approval or disapproval and indicates the extent to which the individual believes himself to be capable, significant, successful, and worthy” (cited in Dutta & Dani, 2010).

Aggression: Aggression may be defined as harmful behavior which violates social conventions and which may include deliberate intent to harm or injure another person or object (Bandura, 1973).

Review of Related Literature

Nature of Self-esteem

Self-esteem is a central variable for many theorists and researchers and a very prominent theme in psychology and other related fields today. Self-esteem refers to the positive (high self-esteem) or negative (low self-esteem) feelings that people have about themselves. People experience the positive feelings of high self-esteem when they believe that they are good and worthy and that others view them positively. In contrast, they experience the negative feelings of low self-esteem when they believe that they are inadequate and less worthy than others (Tafarodi & Swann, 1995).

The term aggression comes from the Latin word aggression, meaning attack. Aggression is overt, often harmful, social interaction with the intention of inflicting damage or other unpleasantness upon another individual. It may occur either in retaliation or without provocation. In humans, frustration due to blocked goals can cause aggression. In definitions commonly used in social sciences and behavioral sciences,

aggression is an action or response by an individual that delivers something unpleasant to another person (Buss, 1961, cited in Internet Source A).

For decades, the prevailing wisdom has held that low self-esteem predisposes people to a variety of adverse outcomes, including aggression. There are a number of studies that have demonstrated a link between low self-esteem and aggressive behavior in children and adolescents. Rosenberg (1965, cited in Donnellan et al. 2005) suggested that low self-esteem weakens ties to society and weaker ties to society decrease conformity to social norms and increase delinquency. Humanistic psychologist such as Rogers (1961, cited in Donnellan et al. 2005) has argued that a lack of unconditional positive self-regard is linked to psychological problems, including aggression. Furthermore, neo-Freudians also posit that low self-regard motivates aggression. For example, Horney (1950) and Adler (1956, cited in Donnellan et al. 2005) theorized that aggression and antisocial behavior are motivated by feelings of inferiority rooted in early childhood experiences of rejection and humiliation.

Method and Procedure

Sample

A total of 1000 (500 males and 500 females) grade 10 students were selected from Aungmyaytharzan Township, Mandalay.

Method

Descriptive survey method and simple random sampling approach were used in this study.

Instrument

In this study, Self-esteem Inventory (SEI) and Aggression Questionnaire (AQ) were used. Self-esteem Inventory (SEI) includes five subscales: general self-esteem, social self-esteem (peer), home self-esteem (parents), lie scale and school self-esteem (academic). In the present study, lie scale was excluded; only four subscales were used: 14 items for general self-esteem, 2 items for social self-esteem (peer), 7 items for home self-esteem (parents), and 6 items for school self-esteem (academic). The total number of items in this study were 29 items and all are four-point Likert Scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree).

Aggression Questionnaire (AQ) was adapted by Buss and Warren (2000). This measure includes four factors: physical aggression, verbal aggression, anger and hostility. The questionnaire includes 27 items; 8 items for physical aggression, 5 for verbal aggression, 6 for anger and 8 for hostility. Each statement in aggression questionnaire was examined by a four-point Likert Scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree). The internal consistency reliability for these questionnaire were .81 and .75.

Results and Findings

To explore the self-esteem and aggression of grade 10 students, the data analysis was carried out.

Table 1. Descriptive Statistics for Self-esteem of Grade 10 Students

Variables	N	Minimum	Maximum	Mean	SD
Self-esteem	1000	42	109	79.62	10.428

According to Table 1, the maximum score of student for self-esteem was 109 and the mean score was 79.62 with the standard deviation 10.428.

Table 2. Result of Descriptive statistics and Independent Sample *t* test for Self-esteem by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Self-esteem	Male	500	80.29	10.541	2.050*	998	.041
	Female	500	78.94	10.281			

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

There was significant difference between males and females ($t = 2.050, p < .05$) in self-esteem.

Table 3. ANOVA Results for Students' Self-esteem by Birth Order

Variable		Sum of Squares	df	Mean Square	F	p
Self-esteem	Between Groups	6982.595	3	2327.532	22.803***	.000
	Within Groups	101661.716	996	102.070		

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

The findings in Table 3 revealed that there was a significant difference in self-esteem by birth order ($F(3,996) = 22.803, p < .001$).

Table 4. Result of Games-Howell Multiple Comparison for Self-esteem by Birth Order

Variable	Birth Order (I)	Birth Order (J)	Mean Difference (I-J)	Std. Error	p
Self-esteem	Eldest	Only Child	4.223**	1.201	.003
		Middle	6.705***	.824	.000
		Youngest	5.063***	.788	.000

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

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

According to Table 4, concerning self-esteem, students who were eldest were significantly different from those who were only child ($p < .01$) and those who were middle and youngest ($p < .001$). Therefore, it can be concluded that self-esteem of eldest students was better than that of other students.

In this study, parent's education level was identified three levels such as Level 1 which includes 3Rs (Reading, Writing and Arithmetic) level and primary level, Level 2 which includes middle school level and high school level and Level 3 which includes graduate level.

Table 5. ANOVA Results for Self-esteem by Father's Education Level

Variable		Sum of Squares	df	Mean Square	F	p
Self-esteem	Between Groups	3374.698	2	1687.349	15.981***	.000
	Within Groups	105269.613	997	105.586		

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

The findings in Table 5 revealed that there were significant differences in the scores of self-esteem by father's education level ($F(2,997) = 15.981, p < .001$).

Table 6. Result of Tukey HSD Multiple Comparison for Self-esteem by Father's Education Level

Variable	Education (I)	Education (J)	Mean Difference (I-J)	Std. Error	p
Self-esteem	Level 1	Level 2	-3.927***	.722	.000
		Level 3	-3.322*	1.377	.042

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

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

According to Table 6, self-esteem of students whose fathers were Level 1 was significantly lower than those whose fathers were Level 2 ($p < .05$) and those whose fathers were Level 3 ($p < .001$).

Table 7. ANOVA Results for Grade 10 Students' Self-esteem by Mother's Education Level

Variable		Sum of Squares	df	Mean Square	F	p
Self-esteem	Between Groups	228.929	2	114.464	1.053	.349
	Within Groups	108415.382	997	108.742		

In Table 7, it can be said that there was no significant differences in self-esteem by mother's education level ($F = 1.053, p = .349$).

Table 8. Descriptive Statistics for Aggression of Grade 10 Students

Variables	N	Minimum	Maximum	Mean	SD
Aggression	1000	31	98	65.97	10.097

According to Table 8, maximum score of students in aggression was 98, the mean score was 65.97 with the standard deviation 10.097.

Table 9. Result of Independent Sample *t* test for Aggression by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Aggression	male	500	68.55	10.206	8.368***	998	.000
	female	500	63.39	9.303			

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

According to Table 9, male students were significantly higher in aggression than female students ($t=8.368, p<.001$).

Table 10. ANOVA Results for Aggression by Birth Order

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Aggression	Between Groups	5474.525	3	1824.842	18.861***	.000
	Within Groups	96364.575	996	96.752		

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

The findings in Table 10 revealed that there were significant differences in the scores of grade 10 students' aggression by birth order ($F(3,996) = 18.861, p < .001$).

Table 11. Result of Games-Howell Multiple Comparison for Aggression by Birth Order

Variable	Birth Order (I)	Birth Order (J)	Mean Difference (I-J)	Std. Error	<i>p</i>
Aggression	Middle	Only child	5.293***	1.154	.000
		Eldest	5.735***	.799	.000
		Youngest	3.597***	.762	.000

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

According to Table 11, aggression of students who were middle in birth order was significantly greater than those who were eldest, youngest and only child ($p < .001$).

Table 12. ANOVA Results for Aggression by Father's Education Level

Variable		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Aggression	Between Groups	4223.015	2	2111.507	21.566***	.000
	Within Groups	97616.085	997	97.910		

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

The findings in Table 12 revealed that there were significant differences in the scores of grade 10 students' aggression by father's education level ($F(2,997) = 21.566, p < .001$).

Table 13. Result of Games-Howell Multiple Comparison for Aggression by Father's Education Level

Variable	Education (I)	Education (J)	Mean Difference (I-J)	Std. Error	<i>p</i>
Aggression	Level 1	Level 2	3.489***	.719	.000
		Level 3	6.637***	1.512	.000

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

According to Table 13, aggression of students whose fathers were Level 1 was significantly greater than that of students whose fathers were Level 2 and Level 3 ($p < .001$).

Table 14. ANOVA Results for Aggression by Mother's Education Level

Variable		Sum of Squares	df	Mean Square	F	p
Aggression	Between Groups	4156.542	2	2078.271	21.212***	.000
	Within Groups	97682.558	997	97.976		

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

The findings in Table 14 revealed that there were significant differences in the scores of aggression by mother's education level ($F(2,997) = 21.212, p < .001$).

Table 15. Result of Tukey HSD Multiple Comparison for Aggression by Mother's Education Level

Variable	Education (I)	Education (J)	Mean Difference (I-J)	Std. Error	p
Aggression	Level 1	Level 2	3.144***	.730	.000
		Level 3	6.253***	1.118	.000
	Level 2	Level 1	-3.144***	.730	.000
		Level 3	3.109*	1.218	.029

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

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

According to Table 15, aggression of students whose mothers were Level 1 was greater than that of students whose mothers were Level 2 and Level 3 ($p < .001$). And then aggression of students whose mothers were Level 2 was greater than that of students whose mothers were Level 3 ($p < .05$).

Table 16. Correlation Matrix between Self-esteem and Aggression of Grade 10 Students

Variable	Self-esteem	Aggression
Self-esteem	-	-.449**
Aggression	-.449**	-

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

According to Table 16, it was found that there was a statistically significant negative correlation between self-esteem and aggression ($r = -.449, p < 0.01$). And the strength of the correlation was moderate. So it can be concluded that the greater self-esteem the students possessed, the lower aggression they can be.

Conclusion

Based on the descriptive statistics and result of t test, male students significantly reported greater self-esteem than female students in self-esteem. Therefore, this finding was in agreement with the results of Lawrence, Ashford and Dent (2006). As for aggression, result of t test, males reported higher aggression than females. The reason may be lying in the process for socialization or social upbringing of boys and girls. Girls are not supported to be aggressive while it may be considered as a positive characteristic for boys (Shaheen & Jahan, 2014). Therefore, the present study was in line with the findings of Shaheen and Jahan (2014).

The result revealed that students who were eldest had higher self-esteem than those who were only child, middle and youngest. Schwab and Lundgren (1978) conducted two related studies and in both studies, the self-esteem was higher for firstborn children than for late born children. So the present study was in line with the findings of Schwab and Lundgren (1978). As for aggression, aggression of students who were middle in birth order was greater than that of other birth order students. Begue and Roche (2005) found that middle-born children tend to be more aggressive than other born students. So the present study was in line with the finding of Begue and Roche (2005).

The results of ANOVA showed that there were significant differences in students' self-esteem by father's education level but not by mother's education level. Students whose fathers were 3Rs level and primary level had lower self-esteem than those whose fathers were middle school, high school level and graduate level. Wiltfang and Scarbecz (1990) found that fathers' education had a small positive relationship with adolescents' self-esteem. As for aggression, the students whose parents were 3Rs level and primary level tend to be more aggressive than those whose parents were middle school and high school level and graduate level. Veronneau et al. (2014) found that parental education was negatively correlated with problem behaviors such as aggression. Therefore the result of this study contributes to Veronneau et al. (2014).

The result indicated that negative correlation was found between self-esteem and aggression ($r = -.449$). So it can be concluded that the students with high self-esteem were likely to have low aggression. This result of the present study is supported by earlier studies conducted by Donnellan et al. (2005) and Trzesniewski et al. (2006), they also found a strong relationship between low self-esteem and aggression.

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Psychological Problems among Student Teachers from Yangon Region

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Abstract

The main aim of this study was to investigate the psychological problems among student teachers. Specifically, this study aimed to explore depression, anxiety and stress among student teachers from Yangon Region. Quantitative approach was used in this study. By using simple random sampling technique, 400 student teachers were collected as participants and psychological problems questionnaire (DASS) was used. The finding pointed out that the level of stress was higher than the levels of depression and anxiety among student teachers. The results revealed that female student teachers were higher than male student teachers in depression but male students were higher than female students in anxiety and stress. Moreover, depression of first year student teachers was lower than that of second year student teachers. But, anxiety and stress of first year student teachers was higher than that of second year student teachers. By comparing their institutions, overall result revealed that psychological problems of student teachers from University of Education were higher than that from Education College.

Keywords: Depression, Anxiety, Stress

Introduction

Higher education is a stressful period in students' life which they need to cope with due to various reasons as living away from the families, a heavy syllabus, and inefficiency in higher education programs. A mentally fit student can initiate proper social relationships, enthusiastic to learn with ambition to implement his/her plans in the future. Students are at a crucial stage of development as they are more subjected to experience mental illnesses. The college and university students are the future of the society, they represents the society investment for future thus their mental health is an important factor not only for their own right but also for society as they are the one who are contributing for larger part of society. The psychological problems like depression, anxiety and stress among college and university students are increasing every year.

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Moreover, there is an increasing concern on the mental health of university and college students worldwide. University and college students are regarded as a special group of people that are enduring a critical transitory period in which they are going from adolescence to adulthood which can be seen as one of the most stressful times in a person's life. The desire to try to fit in, maintain good grades, be away from home and plan for the future often causes anxiety for a lot of students and as a reaction to this stress, some students get depressed and discovered that they cannot get themselves together. Such students may cry all of the time, skip classes or isolate themselves without realizing that they are depressed (Mahmoud et al, 2012).

University and college students face many psychological and mental health problems, especially depression and anxiety, among university and college students all over the world (Stewart-Brown et al., 2000; Tomoda et al., 2000; Ovuga et al., 2006; Wong et al., 2006). Depression, anxiety and stress are common, serious and debilitating mental health and psychological problems and are afflicting adolescents and student population to a large extent. World Health Organization (WHO, 2012) considered mental health as an important component of human health. Although the onset of depression can be at any stage of life, the prevalence of major depression is increasing during adolescence and young adulthood. Stress and anxiety during education causes impairment in cognition and produces distortions of perception.

As university and college students are subjected to various stressors such as academic, social or time management problems, it is necessary for the educators and mental health providers to have interventions to reduce anxiety and improve the quality of mental health education. Studies have noted depression among college students as a risk factor for impaired scholastic performance.

Moreover, depression, anxiety and stress are major and commonly reported issues among university and college students. Mostly stress and depression among college youths are cause of their educational and academics performance. Usually depression, anxiety and stress are associated with decrease in grades which effects one way or another to student's skills and ability to perform. Most common reasons for depression, anxiety, stress and other psychological problems are time stress, failure, tough competition, academic pressure, some other problems include

emotional breakdowns due to inferior feeling for other for some life is not worthy.

In Myanmar, epidemiological data about psychological morbidity among undergraduate students are not well-known and there is a paucity of research on prevalence and correlates of depression, anxiety and stress among undergraduate university and college students. Hence, the need for this study is to fill the gap, so that it can be used as a baseline for subsequent student studies in teaching institutions.

Aim of the Study

The main aim of this study is to investigate the psychological problems among student teachers from Yangon Region. The specific objectives

1. To assess the levels of psychological problems among student teachers.
2. To examine the psychological problems among student teachers by gender.
3. To identify the psychological problems among student teachers by grade level.
4. To assess the psychological problems among student teachers by institution.

Definitions of Key Terms

Depression: Depression is a mental disorder characterized by sadness, loss of interest or pleasure, decreased energy, feelings of guilt or low self-esteem, disturbed sleep or appetite and poor concentration (WHO, 2012).

Anxiety: Anxiety is a response of body to a perceived threat which is triggered by an individual's beliefs, feelings, and thoughts (WHO, 2012).

Stress: Stress is how a person mentally and physically reacts to circumstances that are considered difficult or challenging (Beckner, 2004).

Method

Participants of the Study

Participants of this study were 400 student teachers from Yangon University of Education (YUOE) and Thingangyun Education College (TEC) during the academic year of 2018-2019.

Research Method

Quantitative approach was used in the study. Survey method and descriptive research design were employed.

Instrumentation

The present study examined the psychological problems among student teachers. To be specified, psychological problems were assessed in this study including depression, anxiety and stress. Moreover, survey instrument for this study consisted of self-administered questionnaire which was divided into two sections: student's demographic factors and Depression, Anxiety and Stress Scale (DASS) Questionnaire.

The instrument of Psychological Problems Questionnaire for Depression, Anxiety and Stress Scale (DASS-42) developed by Lovibond, & Livoband, 1995 (cited in Aye Aye Aung, 2015) was used in this study. This questionnaire composed of 42 items. Each item was scored on a 4-point Likert scale. Each of the three DASS-42 scales contains 14 items, divided into subscales with similar content.

Data Analysis

After collecting the required data, data analysis process was conducted. Descriptive statistics was used to investigate the levels of psychological problems among student teachers. The quantitative data were analyzed the independent sample *t* test on with the help of Statistical Package for the Social Science (SPSS) version 25.0 software.

Data Analysis and Findings

Descriptive Statistics for Psychological Problems of Student Teachers

By using the descriptive procedure with the data obtained from Depression Anxiety and Stress Scale (DASS) Questionnaire, psychological

problems among student teachers from selected Education College and University can be computed.

Table 1. Descriptive Statistics for Psychological Problems of Student Teachers

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Depression	400	0	34	10.69	6.246
Anxiety	400	1	35	12.17	6.281
Stress	400	1	36	15.11	6.248
Total	400	5	98	37.97	16.375

According to the results, the mean score for stress was higher than that of the other variables. Therefore, it can reasonably be concluded that student teachers felt severe on stress that the level of stress among psychological problems was higher the others problems among student teachers.

The Levels for Psychological Problems Among Student Teachers

Based on the scores for psychological problems among student teachers, the percentage levels for them among student teachers were also computed in the each of the following tables in terms of the score levels. According to the criteria of test developer based on the scores, five levels of depression, anxiety and stress were classified as “Normal”, “Mild”, “Moderate”, “Severe” and “Very severe”.

The Levels for Depression Among Student Teachers

Specifically, for the level of depression, student teachers who earned the scores “0” to ‘9” were identified as “Normal”, “10” to ‘13” were “Mild”, “14” to ‘20” were “Moderate”, “21” to ‘27” were “Severe”, and “28” and above were “Very Severe” in Table 4.2.

Table 2. The Levels for Depression Among Student Teachers

Variable	Levels	Scores	Frequency	Percentage
Depression	Normal	0 – 9	194	48.50%
	Mild	10 – 13	95	23.75%

Variable	Levels	Scores	Frequency	Percentage
	Moderate	14 – 20	79	19.75%
	Severe	21 – 27	23	5.75%
	Very Severe	>28	9	2.25%

According to the levels of depression, 48.50% of student teachers were found to be normal, 23.75% of student teachers were found to be mild, 19.75% were moderate, 5.75% were severe and the last 2.25% were very severe level in depression respectively. By viewing these percentage results, most of the student teachers were in the normal level of depression.

The Levels for Anxiety Among Student Teachers

For the levels of anxiety, student teachers who earned the scores “0” to “7” were identified as “Normal”, “18” to “9” were “Mild”, “10” to “14” were “Moderate”, “15” to “19” were “Severe”, and “20” and above were “Very Severe” and the results are shown in Table 3.

Table 3. The Levels for Anxiety Among Student Teachers

Variable	Levels	Scores	Frequency	Percentage
Anxiety	Normal	0 – 7	95	23.75%
	Mild	8 – 9	46	11.5%
	Moderate	10 – 14	131	32.75%
	Severe	15 – 19	81	20.25%
	Very Severe	> 20	47	11.75%

Table 3 showed that there were 23.75% in normal, 11.5% in mild, 32.75% in moderate, 20.25% in severe and 11.75% in very severe levels respectively. According to the results, the moderate and above levels of anxiety were higher than the other level. It can be found that student teachers have higher anxiety level.

The Levels for Stress Among Student Teachers

For the levels of stress, student teachers who earned the scores “0” to “14” were identified as “Normal”, “15” to “18” were “Mild”, “19” to “25” were “Moderate”, “26” to “33” were “Severe”, and “34” and above were “Very Severe” and the results are shown in Table 4.

Table 4. The Levels for Stress Among Student Teachers

Variable	Levels	Scores	Frequency	Percentage
Stress	Normal	0 – 14	205	51.25%
	Mild	15 – 18	96	24%
	Moderate	19 – 25	76	19%
	Severe	26 – 33	21	5.25%
	Very Severe	> 34	2	0.5%

According to the Table 4, 51.25% of student teachers were in normal group of stress, and 24% in mild, 19% in moderate, 5.25% in severe and the rest 0.5% of student teachers in very severe group respectively. So, the highest group of student teachers was found to be normal in stress.

Table 5. Descriptive Statistics for Psychological Problems Among Student Teachers by Gender

Variable	Gender	N	Mean	Std. Deviation
Depression	Male	200	10.59	6.739
	Female	200	10.79	5.724
Anxiety	Male	200	12.35	6.580
	Female	200	12.00	5.978
Stress	Male	200	15.42	6.759
	Female	200	14.81	5.693
Total	Male	200	38.35	17.895
	Female	200	37.60	14.736

In order to examine the differences in depression, anxiety and stress among student teachers by gender, independent sample *t* test was conducted and the results were shown in Table 6.

Table 6. Results of Independent Sample *t* test for Psychological Problems Among Student Teachers by Gender

Variable	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Depression	-.328	398	.743	-.205
Anxiety	.549	398	.538	.345
Stress	.968	398	.334	.605
Total	.455	398	.650	.745

According to Table 6, the results of independent sample *t* test indicated that there were no significant difference in depression, anxiety and stress among student teachers by gender. It can be interpreted that student teachers from selected education college and university had psychological problems, but not greatly differed whether they were males or females.

Table 7. Descriptive Statistics for Psychological Problems Among Student Teachers by Grade Level

Variable	Grade	N	Mean	Std. Deviation
Depression	First Year	200	9.61	6.259
	Second Year	200	11.77	6.056
Anxiety	First Year	200	12.51	6.028
	Second Year	200	11.84	6.522
Stress	First Year	200	14.93	6.178
	Second Year	200	15.30	6.327
Total	First Year	200	37.04	16.199
	Second Year	200	38.91	16.537

It was seen that overall results showed that student teachers who are attending second year course suffered more from the psychological problems than the first year ones. To take more detailed information on the grade differences in psychological problems to achieve, the independent sample *t* test was also computed (See Table 8).

Table 8. Results of Independent Sample *t* test for Psychological Problems Among Student Teachers by Grade Level

Variable	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Depression	-3.515	398	.000	-2.165
Anxiety	1.059	398	.290	.665
Stress	-.600	398	.549	-.375
Total	-1.145	398	.253	-1.875

Note: Mean difference is significant at 0.001 level.

According to the results from Table 8, there was a significant difference in the level of depression by grade at $\alpha = 0.001$.

Descriptive Statistics of Psychological Problems Among Student Teachers by Institution

Next, descriptive analysis was conducted to find out the differences in their psychological problems by institution (See Table 9).

Table 9. Descriptive Statistics for Psychological Problems Among Student Teachers by Institution

Variable	School	N	Mean	Std. Deviation
Depression	Yangon University of Education	200	11.82	7.004
	Thingangyun Education College	200	9.56	5.155
Anxiety	Yangon University of Education	200	11.50	7.047
	Thingangyun Education College	200	12.85	5.339
Stress	Yangon University of Education	200	14.90	6.527
	Thingangyun Education College	200	15.33	5.964
Total	Yangon University of Education	200	38.21	18.255
	Thingangyun Education College	200	37.74	14.292

In order to know the more detailed information, the independent sample *t* test was also computed and the results were shown in Table 10.

Table 10. Results of Independent Sample *t* test for Psychological Problems Among Student Teachers by Institution

Variable	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Depression	3.683	398	.000	2.265
Anxiety	-2.167	398	.031	-1.355
Stress	-.696	398	.487	-.435
Total	.290	398	.772	.475

Note: Mean difference is significant at 0.001 level.

Mean difference is significant at 0.05 level.

The results showed that there were significant differences of psychological problems, especially in depression among student teachers according to their institution ($t = 3.683$, $p < 0.001$) and in anxiety ($t = -2.167$, $p < 0.05$). So, it can be interpreted that student teachers from Yangon University of Education were highly depressed than that from Thingangyun Education College. On the other hand, student teachers from Thingangyun Education College encountered slightly suffering from anxiety of the psychological problems than that from Yangon University of Education.

Conclusion

Descriptive statistics was computed to determine the levels of psychological problems among student teachers. The finding points out that the level of stress was higher than the levels of depression and anxiety among student teachers. Then, by showing the percentage levels of depression, anxiety and stress, it can be said that student teachers in this study felt depressed and anxious when they face the stressful situations.

In this study, no statistical significant relationship was found between males and females in depression, anxiety and stress among student teachers. This result is similar to that obtained by Lester (1990) in the study among college students.

By the results of grade level, there is a significant difference between grade level and the mean score of depression among selected student teachers. There are several factors which can lead to depression. Among them, student teachers who may have higher rate of depression have

experienced stressful conditions and lower academic performance due to overscheduling and overstimulation, various worksheets, projects and extracurricular activities.

Moreover, a significant difference was found in psychological problems among student teachers by their institutions. Student teachers from selected education college and university face variable environments, surroundings and life experiences such as stress that also affects the risk of depression. In this study, most of the participants selected are the ones who live in hostel. Thus, living away from family can cause them to miss their family members. The reasons are that facing new experiences and sometimes difficult school work can make full schedules of time, and they worry about finances. Next, because of an increased homework with literature and projects, they use some media and technology by surfing the internet using mobile phone and stay late at night. Therefore, the more use technology during sleeping hours, the poor the quality of their sleep and the higher their rates of depression and anxiety.

To become full comprehensive and quality teacher, it is needed to give good practice during teachers training program for student teachers. Therefore, to develop good moral value, make rational decision, it is necessary to practice student teachers to develop reflective thinking. Reflection defined as those intellectual and affective activities in which individuals engage to explore their experiences in order to lead new understanding and appreciation (Keough & Walker, 2012). The development of student teachers' reflective thinking is influenced by field experience conditions such as cooperating, process of creating and clarifying the meaning of experience (past and present) in relation to self and to their environment.

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Occupational Stress and Job Satisfaction of Junior Teachers from Sagaing Township

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Abstract

The purpose of this study is to study occupational stress and job satisfaction of junior teachers from Sagaing Township. To examine occupational stress and job satisfaction of junior teachers, Descriptive survey method and quantitative approach were used. The participants were selected by using random sampling technique. A total of 212 junior teachers from Sagaing Township in 2018-2019 academic year participated in this study. In order to investigate occupational stress of junior teachers, Revised Version of Teacher Stress Inventory (TSI) developed by Schutz and Long (1988) including 36 items was used. Job satisfaction scale developed by Dixit (1993) including 52 items was used to examine job satisfaction. In the section of data analyses, descriptive statistics, independent sample *t* test and Pearson Product Moment Correlation coefficient were used with the help of the Statistical Package for the Social Sciences (SPSS, version 22). According to the results of this study, there were no significant differences in occupational stress and job satisfaction junior teachers by gender. There was significant difference in job satisfaction by marital status and not by gender. Occupational stress and job satisfaction were negatively correlated.

Keywords: Stress, Occupational stress, Job satisfaction

Introduction

Every people can be unavoidable stress throughout their life. Some researcher proposed that “being completely free from stress is death” (Seley, 1956, cited in Olivier & Venter, 2003). Teacher is also a human being. He cannot be expected to be perfect in this imperfect world. If the level of stress caused by teaching profession i.e. occupational stress becomes too high, his performance breaks down. Occupational stress is a mental and physical condition which affects an individual’s productivity, effectiveness, personal health and quality of work (Comish & Swindle, 1994).

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Again, as a teaching is a human-centered profession, stress within the teaching profession is considerable and may have many consequences on the entire education system. Teaching is complex process where in teacher is expected to exhibit many knowledge and skills. This makes a teacher to experiences stress in the profession. Teachers are the most resourceful persons not only for schools and colleges but also for the society. They shape the society through their mighty intervention in the life of students. Thus, teaching has become a more demanding and intense job. It has been identified as one of the professions associated with very high levels of occupational stress (Acirrt, 2002; cited in Koros, Momanyi & Chakua, 2018).

Recently teachers' stress has received widespread recognition reflecting difficulties encountered by them (Boyle, Borg, Falzon & Baglioni, 1995). Teacher stress is a specific type of occupational stress. It is the experience by a teacher of unpleasant emotions such as tension, frustration, anger and depression resulting from aspects of his/her work as a teacher (Kyriacou, 1987; cited in Reddy & Anuradha, 2013). In the last two decades, there have been a lot of studies on occupational stress among school teachers (Nhundu, 1999).

On the other hand, the job satisfaction of teachers also deteriorates. Job satisfaction has been defined in several ways which makes its definitive designation very difficult. Simply, job satisfaction is the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values (Locke, 1976: cited in cited in Ragma & Legaspi, 2017). Again, job satisfaction is how people feel about their jobs and different aspects of their jobs (Spector, 1997: cited in Mabekoje, 2009). It is the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs.

Existing studies on the job satisfaction and occupational stress of teachers focus on teacher background characteristics (marital status, gender, years of service, etc.) as well as workplace conditions (organizational culture, pupil behavior, work-load, etc.). Higher levels of dissatisfaction with work and occupational stress have been associated with teacher's performance, absenteeism and leaving the job (Stephens & Hultgren, 2003; cited in Darmody & Smyth, 2011). It cannot be denied that work stress among educators is becoming a problem nowadays.

In general, work stress has been viewed as an antecedent of job satisfaction, and the two constructs have been treated related (Stanton, Bachiochi, Robie, Perez, & Smith, 2002). When there is the absence of work stress or there are minimal stressors in the workplace, then there is job satisfaction. However, if there is the presence of work stress (of high level) then there will be job dissatisfaction. Teachers manifesting high levels of stress also show signs of high levels of psychological distress as well as decreased job satisfaction among the teachers (Traverse & Cooper, 1996: cited in Reddy & Anuradha, 2013). Moreover, occupational stress is highly linked with the job satisfaction and they both occupies as a necessary condition for a healthy growth of teacher's personality (Gahlawat, 2011).

In Myanmar, there were some theses about occupational stress and job satisfaction of basic education teachers. However, the processes shaping job satisfaction among junior teachers have received little attention in Sagaing Township. Today Basic Education teachers need to study new teaching methods, to teach co-curricular activities and to be responsible to teach students effectively. So they may encounter more stressful situations in their teaching profession. Thus, research on this topic is especially relevant in a context where teacher workloads are changing as a result for many reasons.

Aims of the Study

The main aim of this study is to investigate the occupational stress and job satisfaction of junior teachers in Sagaing Township during 2018-2019 academic year. The specific objectives of this study are as follows;

1. To find out the differences in occupational stress of junior teachers by gender and marital status
2. To compare occupational stress of junior teachers by service
3. To examine the differences in job satisfaction of junior teachers by gender and marital status
4. To compare job satisfaction of junior teachers by service
5. To explore whether there is correlation between occupational stress and job satisfaction of junior teachers

Definitions of Key Terms

Stress: Stress is not only simply anxiety or nervous tension, nor is it necessarily something damaging or bad that should be avoided at all costs (Luthans, 2002: cited in Oosthuizen & Lill, 2010).

Occupational stress: Occupational stress is the stimulus or strains which derived from work or its environment that could affect workers in a negative way (Reddy & Anuradha, 2013).

Job Satisfaction: It is the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values or the extent to which people like or dislike their jobs (Spector, 1997; cited in Koros, Momanyi & Chakua, 2018).

Materials and Method

Participants

A sample of 212 junior teachers (male = 20 and female = 192) participated in this study. These sample teachers were chosen by using purposive random sampling method from selected Basic Education High Schools in Sagaing Township.

Method

The quantitative research design and the descriptive survey method were used in the present study.

Instrumentation

In order to examine occupational stress of junior teachers, Revised Version of Teacher Stress Inventory (TSI) developed by Schutz and Long (1988) including 36 items was used. Again, job satisfaction scale developed by Dixit (1993) including 52 items was used to examine job satisfaction. Both questionnaires contained 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). In negative questions, they are reconsidered as 1 (strongly agree) to 5 (strongly disagree).

After preparing the questionnaires, expert review was conducted for face validity and content validity by experts in the field of Educational Psychology from Sagaing Institute of Education and Myanmar Education Research Department. After validation, a pilot study was made. The reliability coefficient for TSI is 0.78 and job satisfaction scale is 0.8.

Findings

Occupational Stress of Junior Teachers

Table 1. Descriptive Statistics for Occupational Stress of Junior Teachers

Variable	<i>N</i>	Min	Max	Mean	<i>SD</i>
Occupational Stress	212	99	152	120.24	9.192

According to Table 1, the mean score for occupational stress of junior teachers was 120.24. Therefore, it can be interpreted that junior teachers had much stress related with their occupation since the practical mean score for occupational stress of junior teachers was greater than the theoretical mean score (108).

Comparison of Occupational Stress of Junior Teachers by Gender

In order to explore the mean differences in occupational stress of junior teachers by gender, independent sample *t* test was conducted.

Table 2. The Result of Independent Sample *t* test for Occupational Stress of Junior Teachers by Gender

Variable	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Occupational Stress	Female	192	120.14	9.212	-.461	210	.646
	Male	20	121.09	9.180			

Table 2 revealed the result that male teachers had greater mean score than female teachers. But, there was no significant difference in occupational stress of junior teachers by gender ($p = .646$).

Comparison of Occupational Stress of Junior Teachers by Marital Status

Table 3. Result of Independent Sample *t* test for Occupational Stress of Junior Teachers by their Marital Status

Variable	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Occupational Stress	Single	107	119.50	8.761	- 1.170	210	.243
	Married	105	120.98	9.595			

According to Table 3, the mean score for occupational stress of married teachers was slightly greater than that of single teachers. However, there was no significant difference in occupational stress of junior teachers by marital status.

Comparison of Occupational Stress of Junior Teachers by Service

In order to see the mean differences in occupational stress of junior teachers by service, the results were presented in Table 4.

Table 4. Mean Comparison of Junior Teachers' Occupational Stress by Service

Variable	Service	N	Mean	SD
Occupational Stress	10 years and Below	10	107.10	11.367
	11- 20 years	37	110.46	11.527
	21 years and Above	165	109.66	9.579

According to Table 4, junior teachers with service 11-20 years had the highest mean score among three groups.

Job Satisfaction of Junior Teachers

First, descriptive statistics was used to find out job satisfaction of junior teachers.

Table 5. Descriptive Statistics for Job Satisfaction of Junior Teachers

Variable	N	Min	Max	Mean	SD
Job Satisfaction	212	79	163	109.44	14.046

Table 5 revealed the result that the practical mean for job satisfaction of junior teachers was 109.44. Thus, junior teachers had a little satisfaction related with their job because the practical mean for job satisfaction of junior teachers was less than the theoretical mean (156).

Comparison of Job Satisfaction of Junior Teachers by Gender

Table 6. Result of Independent Sample *t* test for Job Satisfaction of Junior Teachers by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Job Satisfaction	Female	192	109.93	14.141	1.472	210	.142
	Male	20	105.27	12.740			

According to Table 6, the mean score for job satisfaction of female teachers was greater than that of male teachers. However, there was no significant difference in job satisfaction of teachers by gender.

Comparison of Job Satisfaction of Junior Teachers by Marital Status

Table 7. Result of Independent Sample *t* test for Job Satisfaction of Junior Teachers by their Marital Status

Variable	Marital Status	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Job Satisfaction	Single	107	111.48	12.960	2.146*	210	.033
	Married	105	107.37	14.849			

Note: * Mean difference is significant at 0.05level.

According to Table 7, there were significant differences in job satisfaction of junior teachers by their marital status ($p < 0.05$). Thus, it can be interpreted that single teachers were more satisfied with their job than married teachers in Sagaing Township.

Comparison of Job Satisfaction of Junior Teachers by Service

Table 8. Mean Comparison of Junior Teachers' Occupational Stress by Service

Variable	Service	N	Mean	SD
Job Satisfaction	10 years and Below	10	109.88	13.755
	11- 20 years	37	107.59	16.087
	21 years and Above	165	108.01	11.165

According to Table 8, junior teachers with service 11-20 years had the lowest mean score among three groups.

The Relationship between Occupational Stress and Job Satisfaction

In order to determine the relationship between occupational stress and job satisfaction, Pearson product-moment correlation coefficient was used.

Table 9. Relationship between Occupational Stress and Job Satisfaction of Junior Teachers

Variable	Job Satisfaction
Occupational Stress	- .273**

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

According to Table 9, the result showed that there was a significant negative relationship between occupational stress and job satisfaction. Thus, occupational stress of junior teachers was negatively correlated with their job satisfaction.

Discussion and Conclusion

Based on the findings of this study, the following discussion were forwarded concerned with occupational stress and job satisfaction of teachers.

Regarding gender difference in occupational stress of teachers, male teacher are slightly higher mean scores (121.09) than female teachers (120.14). However, there is no significant gender difference ($p=.646$). This result is consistent with the conclusion of Matuszek, Nelson and Quick (1995) that males and females operating at roughly the same level within organizations generally experience the same stressors. This may be both male and female teachers have the same workload in Basic Education Schools.

With regard to marital status, married teachers are higher stress levels than single teachers. This result is similar to the result of Jeyaraj (2013) that the unmarried/single teachers experienced less level of stress. However, there are no significantly different in occupational stress between married and single teachers.

Regarding service of teachers, by comparing three groups, junior teachers with service 11-20 years have the highest mean score on occupational stress and lowest mean score on job satisfaction. Thus, service of teacher should be considered as an associating factor of occupational stress and job satisfaction.

Regarding gender difference in job satisfaction of teachers, female teachers are slightly higher than male teachers. But, there is no significant. Similarly, no gender effects have been found on job satisfaction (Ma & MacMillan, 1999; McCann, 2002). According to Klecker (1997), this may be gender differences in job satisfaction were influenced by age group. Thus, age differences of teachers should be considered on job satisfaction.

With regard to marital status, single teachers are more satisfied than married teachers with their job. The reason may be marriage imposes increased responsibilities.

According to the results of this study, there is a negative correlation between occupational stress and job satisfaction of junior teachers. This result supports the result of Gandhi (2017) that there is negative and significant correlation between occupational stress and job satisfaction of teachers. Therefore, the more stress about their occupation, the less satisfaction with their job.

To sum up, this research study is believed to be able to insight other researchers to conduct further studies to investigate the occupational problems of the teachers.

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An Investigation into Hardiness and Stress of Teachers in Namkham Township

Ei Ei Mon¹ & Lway A Hla Khin²

Abstract

The main purpose of this study was to explore the hardiness and stress of teachers from selected basic education school teachers in NamKham Township. In this study, 490 participants of basic education school teachers (56 males and 434 females in NamKham Township) were selected by using random sampling technique. To study the hardiness and stress of teachers, two instruments were employed. The Hardiness Scales (HS) was adapted from the Hardiness Scales of Bartone, Ursano, Wright & Ingraham, (1989) which modified version of Kobasa, Maddi & Kahn, (1982). Then, the Stress Questionnaire (SQ) was prepared based on the Perceived Stress Questionnaire of Sheldon Cohen (1992). The collected data were analyzed by appropriate statistical techniques like both descriptive and inferential statistics such as independent sample t test and ANOVA. The results of the study indicated that there was no significant difference in the hardiness of basic education school teachers in relation to gender and school type, but was found significant difference with respect to marital status and teaching experience. And then, there were no significant differences in the stress of basic education school teachers in relation to gender, marital status and teaching experience, but was found significant difference with respect to school type. According to the results of this study, the hardiness was negatively related with the stress of teachers ($r = -0.282, p < 0.01$). Thus, personality hardy teachers ably cope with stressful situations successfully.

Keywords: Hardiness, Stress

Introduction

Importance of the Study

Stress is a normal part of each individual's life. And then, stress is causing most persons in similar way. Acute stress leads to quick changes all through the body. Stress is generally defined as the body's common response or reaction to demands made on it or to disturbing events in the

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environment. It is a process by which we perceive and cope with environmental threats and challenges.

In addition, experiencing long term stress in work environment leads to decreasing job satisfaction, inefficient job performance, reducing motivation and morale of employees, physical and mental health disorders, burnout and job fatigue, repeated absence, delay in attending at work, low quality and quantity of work, depression, anxiety, lack of trust and leaving job (Khin Moe Thu Win, 2017).

According to Bartone (2006), hardiness is a personality dimension that develops early in life and is reasonably stable over time, though amenable to change and probably trainable under certain conditions. Hardiness is a personal characteristic adjusting the way to cope with the stressful situations (Kobasa, Maddi & Kahn, 1982) and helps them to convert the stressful situations into opportunities for improving the performance, leadership, health and mental growth. As a factor adjusting the influence of stress on the health, hardiness has received much attention in the recent years.

For above reasons, there is a need to study the stress levels and hardiness of teachers from selected basic education schools. Teachers will be affected to their individual efficiency by the stress. So, there is a need to provide proper conducive environment and support to teachers to maintain individual stress at their workplace. Teachers should be positive in facing their challenges, which will help them in improving their functional skills and reduce stress, so that their profession is not affected.

Aims of the Study

The main aim of the study is to investigate the hardiness and stress of teachers from selected basic education schools in Nam Kham Township.

The specific objectives are as follows:

1. To study the hardiness levels of teachers.
2. To find out the teachers' hardiness by gender, marital status, teaching experience and school type.
3. To study the stress levels of teachers.
4. To find out teachers' stress by gender, marital status, teaching experience and school type.

5. To investigate the relationship between hardiness and stress of teachers.

Definitions of Key Terms

Hardiness defined as a constellation of personality characteristics that function as a resistance resource in the encounter with stressful life events” (Kobasa, 1979a). This construct is composed of three basic, interrelated elements: commitment, control and challenge (Kobasa, Maddi & Kahn, 1982).

Stress is defined as the “imbalance” between demands and resource, or as occurring when the “pressure exceeds one’s perceived ability to cope” (Lazarus & Folkman, 1984).

Review of Related Literature

Kobasa, Maddi, and Kahn (1982) Unidimensional Conception of Hardiness

Kobasa, Maddi, and Kahn (1982) defined hardiness as a “constellation of personality characteristics that function as a resistance resource in the encounter with stressful life events”. The authors proposed that individuals high on hardiness possessed all together the dispositions of commitment, control, and challenge (also referred to as the three C’s).

Commitment is the tendency to feel deeply involved in the life experiences. This feeling results from a purpose in life that helps putting stressful events in a broader perspective. Committed persons involve wholeheartedly in their relationship with others, in all their activities, and in their environment in general.

Control is the tendency to believe that one can influence his life experiences. Persons high in control think that through their efforts, they dispose of a definite influence on the course of events they meet. They invest active efforts to transform adverse situations into advantages.

Challenge represents the tendency to consider changes as opportunities to learn and grow. Persons positioned high in the challenge dimension think they can learn something from every experience, whether it is positive or negative. They consider that fulfillment lies in the pleasant as well as in the strenuous aspects of life.

Nature of Stress

Stress is part of life. A death in the family, the birth of a baby, moving, taking a vacation, getting a job promotion, arguing...all of these common occurrences are stressful. Research shows that it isn't necessarily the nature of the stressor that drives people to dizzying heights of fist-clenching, jaw-grinding, cold-sweating states of stress and panic. The key factor is one's response to a stressful situation. Different people respond differently to stressors. One person may calmly face moving day, while another person (in the exact same situation) might be totally wiped out by the stress that moving induces. So the ability to manage the stressors that bombard them daily is of the utmost importance.

Stress has entered the popular vocabulary and is generally understood as a physical, mental or emotional reaction to unpleasant circumstances. It can be used to describe external problems, such as 'stress at work', an internal feeling of being 'stressed out', or pressure, which may even improve performance (Jones & Bright, 2001). In this study address, three types of stress was looking at the ways to respond appropriately to external problems associated with working in teaching, to understand the internal feelings which are a consequence and to make use of stress to get the most out of their career.

Methodology

Sample of the Study

The target population for this study included all basic education school teachers in NamKham Township, Shan State. By using random sampling technique, basic education school teachers were selected as participants from basic education schools. The total numbers of participants were 490 (56 males, 434 females) in 2017-2018 academic year.

Research Design and Method

- Descriptive research design and survey method

Instrumentation

The research instruments were Hardiness Scale and Perceived Stress Questionnaire. The Hardiness Scale (HS) is a 45-item instrument designed to measure teachers' hardiness. The survey question items were designed utilizing the teachers' hardiness identified by Hardiness scale (HS) (Bartone, Ursano, Wright & Ingraham, 1989) modified version of (Kobasa,

Maddi & Kahn, 1982). The survey instrument consisted of three dimensions: (1) commitment, (2) control, and (3) challenge.

For stress, the Perceived Stress Questionnaires (PSQ) from the Stress Inventory- Revised Edition is a 30 item instrument designed to measure teachers' stress. The survey question items were designed utilizing the teachers' stress identified by Sheldon Cohen, (1992). It was composed of seven subscales of perceived stress: (1) Harassment, (2) Overload, (3) Irritability, (4) Lack of joy, (5) Fatigue, (6) Worries and (7) Tension.

Data Analysis and Findings

The Three Groups of Teachers' Hardiness

The teachers participated in this study were classified into three groups from various levels of hardiness such as high, moderate and low. These results revealed that teachers were moderate enough in hardiness. (See Table 1)

Table 1. Frequencies and Percentages of Teachers' Hardiness Level by Three Different Groups

Variable	Levels	Frequency	%
Hardiness	Low	82	17%
	Moderate	336	69%
	High	72	15%

Hardiness of Teachers by Gender

Table 2. Result of Independent Sample *t* Test for Hardiness of Teachers by Gender

Variable	Gender	<i>N</i>	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Hardiness	Male	56	120.84	7.582	-.600	488	.549	-.633
	Female	434	121.47	7.414				

According to Table 2, there was no significant difference between male and female in hardiness ($t = -.600, p = 0.549$).

Hardiness of Teachers by Marital Status

Table 3. Result of Independent Sample t Test for Hardiness of Teachers by Marital Status

Variable	Marital Status	<i>N</i>	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Hardiness	Single	213	122.51	7.525	2.915*	488	0.004	1.95
	Married	277	120.55	7.252				

*The mean difference is significant at 0.05 level.

Table 3 showed that there was significant difference in hardiness of teachers between single and married ($t = 2.915$, $p < 0.05$). The effect size d is approximately 0.30, which is typical.

Hardiness of Teachers by Teaching Experience

Table 4. Mean and Standard Deviation of Teachers' Hardiness by Teaching Experience

Variable	Experience Groups	<i>N</i>	Mean	<i>SD</i>
Hardiness	T.E<2	61	122.97	6.902
	2≤T.E≤5	132	121.88	7.977
	5<T.E<10	63	123.68	6.977
	T.E≥10	234	120.11	7.137

T.E = Teaching Experience

To find out significant differences in teachers' teaching experience, ANOVA was conducted.

Table 5. ANOVA Results for Hardiness of Teachers by Teaching Experience

Variable	Region Group	Sum of Squares	df	Mean Square	F	P
Hardiness	Between Groups	899.625	3	299.875	5.588*	.001
	Within Groups	26079.975	486	53.662		
	Total	26979.600	489			

*The mean difference is significant at 0.05 levels.

According to Table 5, a statistically significant difference was found in hardiness of teachers by teaching experience ($F(3,486) = 5.588, p < 0.05$).

Table 6. The Results of Tukey (HSD) Multiple Comparisons for Teachers' Hardiness by Teaching Experience

Variable	(I)Teaching Experience	(J)Teaching Experience	Mean Difference (I-J)	p
Hardiness	T.E<2	2≤T.E≤5	1.088	.772
		5<T.E<10	-.715	.948
		T.E≥10	2.860*	.034
	5<T.E<10	T.E<2	.715	.948
		2≤T.E≤5	1.804	.375
		T.E≥10	3.576*	.004

* The mean difference is significant at the 0.05 level.

Hardiness of Teachers by School Type

To find out whether there were significant differences in hardiness of teachers by school type, ANOVA was conducted. There was no significant difference in hardiness of teachers by school type.

Descriptive Statistics for Stress of Teachers

The Three Groups of Teachers' Stress

The teachers participated in this study were classified into three groups from various levels of stress such as high, moderate and low.

Table 7. Frequencies and Percentages of Teachers' Stress Level by Three Different Groups

Variable	Stress Level	Frequency	Percentage
Stress	Low	84	17%
	Moderate	335	68%
	High	71	15%

Stress of Teachers by Gender

Table 8. Result of Independent Sample *t* Test for Teachers' Stress by Gender

Variable	Gender	<i>N</i>	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Stress	Male	56	65.79	10.977	-.445	488	.656	-.689
	Female	434	66.47	10.890				

Table 8 showed that there was no significant difference between male and female in stress ($t=-0.445$, $p=0.656$).

Stress of Teachers by Marital Status

Table 9. Result of Independent Sample *t* Test for Teachers' Stress by Marital Status

Variable	Marital Status	<i>N</i>	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Stress	Single	213	66.30	10.669	-.170	488	.865	-.169
	Married	277	66.47	11.077				

Table 9 showed that there was no significant difference between single and married on stress ($t=-0.445$, $p=.865$).

Stress of Teachers by Teaching Experience

To find out significant differences in teaching experience, ANOVA was conducted. There was no significant difference in stress of teachers by teaching experience ($F(3,486) = 0.991, p = 0.397$).

Stress of Teachers by School Type

Descriptive statistics was conducted to find out the mean and standard deviation of teachers' stress by school type.

Table 10. Mean and Standard Deviation of Teachers' Stress by School Type

Variable	School Type	<i>N</i>	Mean	SD
Stress	BEHS	194	64.18	10.978
	BEMS	127	67.62	11.476
	BEPS	169	68.02	9.928

To find out whether there were significant differences in stress of teachers by their school type, ANOVA was conducted.

Table 11. ANOVA Results for Stress of Teachers by School Type

Variable	Region Group	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Stress	Between Groups	1587.701	2	793.851	6.853*	0.001
	Within Groups	56413.491	487	115.839		
	Total	58001.192	489			

* The mean difference is significant at the 0.05 level.

Table 12. The Results of Tukey (HSD) Multiple Comparisons for Stress of Teachers by School Type

Variable	I School Type	J School Type	Mean Difference (I-J)	P
Stress	BEHS	BEMS	-3.442*	.015
		BEPS	-3.837*	.002
	BEMS	BEHS	3.442*	.015
		BEPS	-.396	.947
	BEPS	BEHS	3.837*	.002
		BEMS	.396	.947

* The mean difference is significant at the 0.05 level.

It can be found that teachers who are teaching in BEHS had lower stress than teachers who are teaching in BEPS and BEMS.

The Correlation Between Hardiness and Stress of Teachers

Table 13. The Correlation Between Hardiness and Stress of Teachers

Variables	Hardiness	Stress
Hardiness	1	-0.282**
Stress	-0.282**	1

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

This means that teachers who were high in hardiness were low in stress. Therefore, it can be said that hardiness and stress have negative relationship.

Conclusion, Discussion and Recommendation

In an ecosystem, as teachers are human that may encounters various situations such as personal, social and professional problems. Among this different situation, they may encounter at least one kind of stress. Thus, teachers need to consider the factors that serve as a resistance resource against the impact of stress and to reduce the negative effects of stress has

on teachers. The main moderating factor is the personality traits of the individuals that called hardiness. Hardiness is very important as it makes the individuals to resistance stress. If teachers possess high hardiness, they can build commitment, control and challenge. Teachers high in hardiness not only resistance stress, they also manage tension, worries, fatigue, overload, irritability, negative thoughts, ideas and feelings more efficiently.

All the facts described above indicated hardiness and stress are very important factors for teachers to be more effectively in performing their works. The current study found that teachers' marital status, teaching experience and school type affected on hardiness and stress.

First, the present study found hardiness differs according to marital status. According to this result, single teachers had the highest hardiness than married teachers. So, married teachers should not highly alienated from their work environment and should be involved themselves in their work setting and should assume responsibility for their actions. And then, married teachers should be influential rather than feeling powerless. In addition, married teachers should tolerance, flexibility and adaptability to change.

Next, the present study found hardiness differs according to teaching experiences. Teachers who had teaching experience $T.E < 2$ was the highest in hardiness. But, Teachers who had teaching experience $T.E \geq 10$ was the lowest in hardiness. So, the teachers who had teaching experience $T.E \geq 10$ need to really look forward their work, should planning ahead to avoid most future problems and should like a lot of changes in work.

Based on the research, teachers' stress was affected by school types. Basic Education Primary Schools felt more stress than Basic Education Middle and High Schools. This finding suggests that teachers who teach in Basic Education Primary Schools need to be reducing tension by take a rest, need to have resistance under pressure, many demand, and conflict situation because of their physical facilities, locality peace and social security.

Finally, significant negative correlation was found between teachers' hardiness and stress. So, teachers who have a higher level of hardiness possess lower level of stress. The finding of the study attributes hardiness of teachers as a factor of buffer in stressful situations to reduce teachers' stress.

Considering the beneficial effects of a hardy personality with respect to stress, we encourage school managements to promote teacher engagement in hardiness training programmes or interventions to improve teacher's ability to manage stress (Khoshaba, & Maddi, 2005). This conclusion was that decreasing stress through increasing hardiness, thereby providing individual and organizational benefits such as decreased burnout and increased job satisfaction and well-being.

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Social Media Addiction of Second Year and Fourth Year Students from Sagaing University of Education

Honey Ko Ko *

Abstract

This study investigated the social media addiction of second year and fourth year students from Sagaing University of Education. A total of 200 BEd students participated in this study. Descriptive research design and survey method were used. Social Media Addiction Questionnaire developed by Akua Adoasi Otu was adapted and used to collect the required data. Findings from questionnaire surveys revealed that a significant difference was found in students' social media addiction by gender ($p = 0.05$). Male students had higher social media addiction than female students. There was a significant difference in social media addiction by level of education ($p = 0.05$). Second year students had higher social media addiction than fourth year students. Moreover, according to the findings, 48% of the pre-service teachers (96 respondents) subscribed Facebook mostly. Majority of students (36%) used social media for entertainment. Majority of the respondents (30%) spent 2-3 hours on social media daily. The least of the students (2%) used social media to discuss politics while most of the students (52%) used social media for discussing entertainment.

Key Terms: Social Media, Social Media Addiction

Introduction

The expansion of technology and increased uses of computer mediated communication make many people's daily life styles change. Knowledge is power. All people recognize this saying but few understand the empowering role social media has played. In today's world, it is undeniable that social media plays an important role in impacting culture, economy and overall view of the world. Social media is a new forum that brings people to exchange idea, connect with, relate to, and mobilize for a cause, seek advice, and offer guidance. Social media has removed communication barriers and created decentralized communication channel

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and open the door for all to have a voice and participate in a democratic fashion including people in repressive countries.

Social media are termed to as web based services that give an opportunity to individuals to create their own personal profile with the choice of their own list of users and thereby connect with them in an altogether public forum that provides them with features such as chatting, blogging, video calling, mobile connectivity and video/photo sharing. People spend more than usual hours on these sites to download pictures, browse through updates seek entertainment and chat around with friends to keep themselves connected to one another. Though these sites serves good in many ways, it has its negative effects too such as cyber crimes which has become a privacy threat to the people worldwide.

Evaluating the amount of research that surrounds the usage of social networking sites in the education system it is important to determine whether or not, have these sites led to any impact on student engagement and achievement. This paper will be therefore able to review the available literature and findings to study and present both the positive and negative impacts of online networking on the most high in demand segment of the society.

Aims of the Study

The main aim of this study was to investigate the social media addiction of BEd Second Year and Fourth Year students from Sagaing University of Education. The specific objectives are as follows:

1. Which social media platforms do students from second year and fourth year of Sagaing University of Education use the most?
2. What do students use these media they are on for?
3. On average how much time do you spend on social media daily?
4. What issues do students mostly discuss on social media?
5. To examine students' social media addiction by gender and level of education

Definitions of Key Terms

Social Media : Social media are interactive computer-mediated technologies that facilitate the creation and sharing of information, ideas, career interests and other forms of expression via virtual communities and networks (Wikipedia).

Social Media Addiction : Social Media Addiction is a term used to describe a situation where a user spends too much time on social media(e.g. Facebook, Twitter, Instagram) such that it negatively affects other aspects of his or her daily life like school, work or relationship with others (Walker, 2011).

Review of Related Literature

Facebook, Google, and other web services simultaneously seize and fragment people's attention. They can subvert higher-order reasoning processes, including the kind of focus, concentration, and persistence necessary for critical thinking and intellectual development. Some researchers have correlated heavy internet use with greater impulsivity, less patience, less tenacity, and weaker critical thinking skills. Prolonged internet use exposes students to interactive, repetitive, and addictive stimuli that produce permanent changes in brain structure and function. The more one uses the internet and social media, the better the brain can skim and scan. But research suggests that these gains degrade the capacity for concentration, reasoning, and reflection—in fact the very sort of critical thinking and evidence-based reasoning needed to honestly appraise the full costs of using social media (cited in Internet Source I).

Method and Procedure

Sampling – Participants in this study were selected from Second Year and Fourth Year Students from Sagaing University of Education by using simple random sampling technique. The total number of participants was 200. Out of them, 100 were male students and 100 were female students.

Research Method – In this study, descriptive research design and survey method were used.

Instrument – Social Media Addiction Questionnaire developed by Akua Adoasi Otu was adapted and used. It originally included 17 items. The

instrument is a 4 point Likert scale ranging from strongly disagree = 1 to strongly agree = 4 for positive items and vice versa for negative items.

Data Collection – 200 student teachers were randomly selected from the Sagaing University of Education. Before answering the questionnaires, pre-instruction was given to the participants to complete the questionnaires during approximately 40 minutes. Participants were encouraged to ask questions during survey administration if they were unclear.

Results and Findings

Research Question 1

Which social media platforms do pre-service teachers from second year and fourth year of Sagaing University of Education use the most?

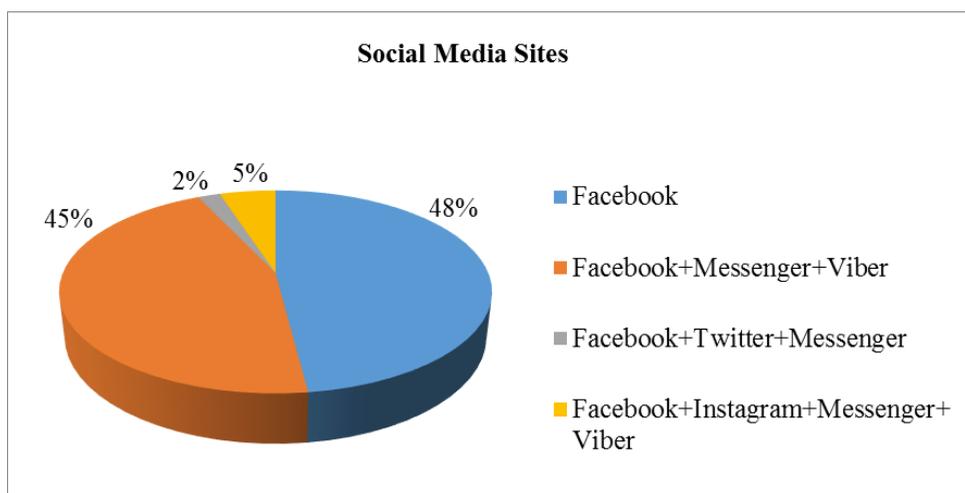


Figure 1. Social Media Sites which Pre-service Teachers were subscribed to

According to Figure 1, 48% of the pre-service teachers (96 respondents) subscribed Facebook mostly. Facebook, Messenger and Viber was subscribed by 45% of pre-service teachers (90 respondents) while Facebook, Twitter and Messenger has been subscribed by 2% (4 respondents). Facebook, Instagram, Messenger and Viber were used by remaining 5% (10 respondents) of the pre-service teachers.

Research Question 2

What do students use these media they are on for?

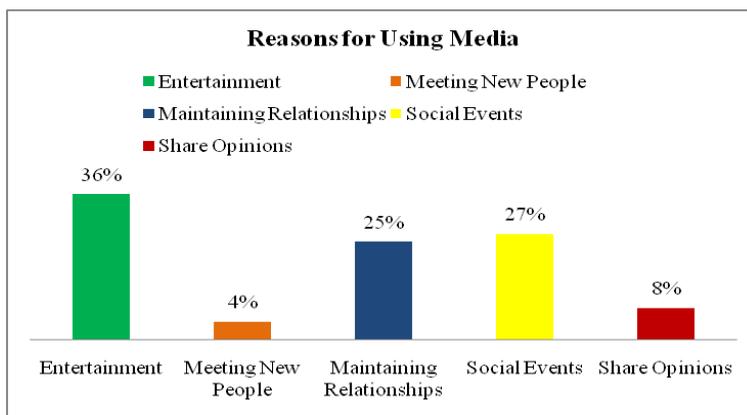


Figure 2. Reasons for using social media students were subscribed to

According to the results of Figure 2 showed that the majority of students (36%) used social media for entertainment. The least (4%) used social media for meeting new people. While 27% of student used social media for including social events, 25% of students used for maintaining relationships. The remaining 8% of students used social media for sharing opinions.

Research Question 3

On average how much time do you spend on social media daily?

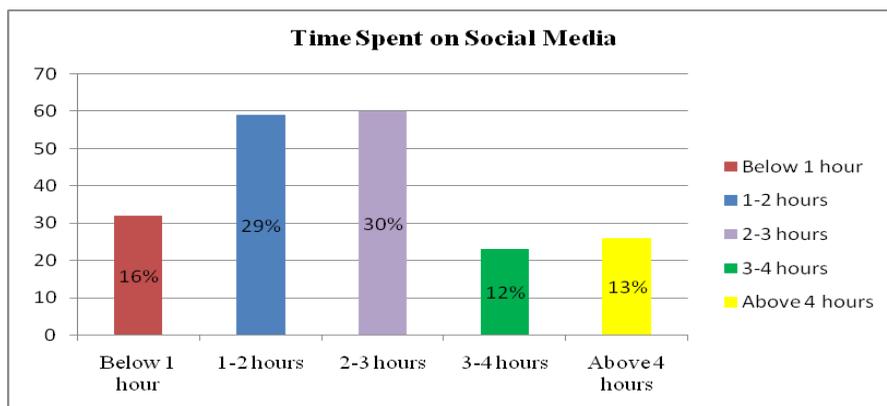


Figure 3. Average time spent on social media daily

Figure 3 showed that a majority of the respondents (30%) spent 2-3 hours on social media daily. 16% of students spent on social media below 1 hour; 29% , 1-2 hours, 13%, above 4 hours. The least of the participants (12%) spent 3-4 hours on social media daily.

Research Question 4

What issues do students mostly discuss on social media?

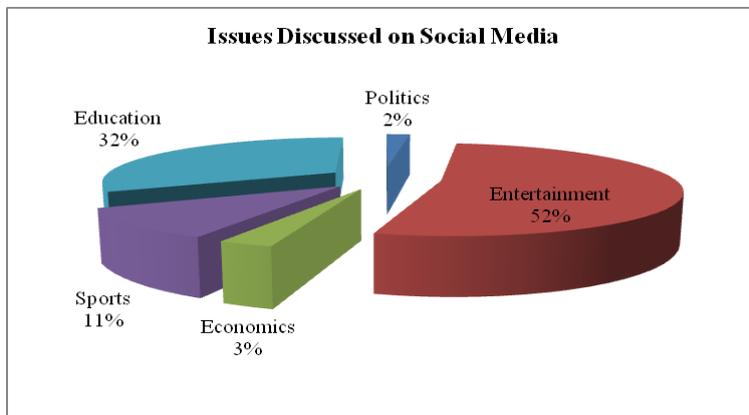


Figure 4. Issues discussed on social media

According to Figure 4, the least of the students (2%) used social media to discuss politics while most of the students (52%) used social media for discussing entertainment. When 32% of students said using social media to discuss education, another 11% of students used for sports. The left 3% of students used social media for discussing economics.

Descriptive Statistics for Social Media Addiction of Students

A total of 200 students (Male= 100, Female= 100) were selected as participants in this study. In terms of the descriptive statistics, minimum and maximum scores, mean and standard deviation of the students' social media addiction were presented in Table 1.

Table 1. Descriptive Statistics for Students' Social Media Addiction

Variable	N	Minimum	Maximum	Mean	SD
Social Media Addiction	200	15	47	32.21	5.02

As shown in Table 1, the maximum score, minimum score, mean and standard deviation of students' social media addiction were provided. The maximum score of students' social media addiction was 47 and minimum score was 15. The mean score was 32.21. Students were not addicted by social media.

Comparison of Students' Social Media Addiction by Gender

To find out the differences between male and female students in social media addiction, descriptive analysis was conducted. The means and standard deviations of male and female students were described in Table 2.

Table 2. Descriptive Statistics for Social Media Addiction of Students by Gender

Variable	Gender	N	Mean	SD
Social Media Addiction	Male	100	33.2	5.22
	Female	100	31.22	4.63

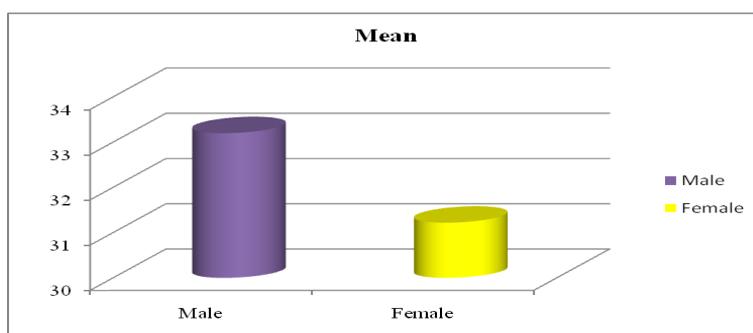


Figure 5. Bar Chart for Mean Comparisons of Social Media Addiction of Students by Gender

Table 2 and Figure 5 showed that there were differences in mean scores of social media addiction of students by gender. The mean scores of males were higher than that of females.

And then, to find out the differences significantly, the independent sample *t* test was also computed. The results were shown in the following Table 3.

Table 3. Results of Independent Sample *t* test for Social Media Addiction by Gender

Variable	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Social Media Addiction	2.84	198	.005	1.98

* The mean difference is significant at the 0.05 level.

According to Table 3 results, a significant difference was found in students' social media addiction by gender ($p = .005$). Male students had higher social media addiction than female students.

Comparison of Students' Social Media Addiction by Level of Education

To explore the differences between Second Year and Fourth Year student teachers in social media addiction, descriptive analysis was also computed. The mean and standard deviations of students were described in Table 4.

Table 4. Mean Comparison for Social Media Addiction of Students by Level of Education

Variable	Level of Education	N	Mean	SD
Social Media Addiction	Second Year	100	32.93	4.997
	Fourth Year	100	31.49	4.963

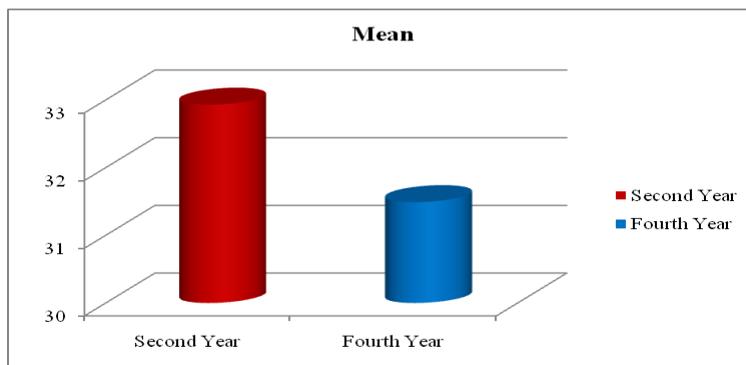


Figure 6. Bar Chart for Mean Comparisons of Social Media Addiction of Students by Level of Education

According to the results of Table 4 and Figure 6, the mean scores of second year students were found greater than those of fourth year students in social media addiction because the mean score of second year students (Mean =32.93) were higher than fourth year students (Mean = 31.49).

To study whether there was a significant difference in social media addiction between second year and fourth year students or not, independent sample *t* test was used. The results of *t* test for comparison of social media addiction by level of education were shown in Table 5.

Table 5. Results of Independent Sample *t* test for Social Media Addiction by Level of Education

Variable	<i>T</i>	<i>df</i>	<i>p</i>	Mean Difference
Social Media Addiction	2.044	198	.042	1.44

* The mean difference is significant at the 0.05 level.

Table 5 showed that there was significant difference in social media addiction by level of education ($p = .05$). According to this result, second year students had higher social media addiction than fourth year students.

Suggestions

Social media is really convenient and important communicate network for all the people nowadays. The people can use it to know friends and keep contact with friends that came from different countries that came from different countries. The people can also share our ideas so quickly so that all the things could develop so fast because people could tell their ideas. The people could also learn new things on social media by watching or reading the things that people shared onto the social media. People could also sell things on social media freely which could reduce the expenditure of advertisements. Social media changed the people's life so much.

However, there are many young people who cannot control themselves and are addicted to social media. Addiction to social media has many serious effects, including poor study habits, living away from reality and bad health. Addiction to social media makes the youth have bad grades in studies. Because of social media, many students who were excellent students have become bad students. And last but not least, using social media too much will have a serious impact on health. Because the young are addicted to social media, they will go to bed late to read news on Facebook or chat with friends. Staying up is really harmful to the health, especially, the brain. If the young do not sleep enough, their health will be affected seriously by losing weight or always feeling tired. Moreover addiction to social media can cause depression in the young. The mental problems are very dangerous to the young people because these mental problems cause the young people lose their minds and eventually, choose death.

Although using social media has many benefits in our lives, addiction to social media is not good. It will have awful influences on studying, make the young people live way from reality and have bad effects on health. In order to avoid being addicted to social media, young people should spend more time playing sports, studying and taking part in activities in schools.

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