

JOURNAL OF THE MYANMAR ACADEMY OF ARTS AND SCIENCE



Educational Psychology

Vol. XXII, No.9, June, 2025

Myanmar Academy of Arts and Science

Journal of the Myanmar Academy of Arts and Science

Vol. XXII. No.9

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THE MEDIATING ROLE OF PSYCHOLOGICAL CAPITAL IN THE RELATIONSHIP BETWEEN WORK ENVIRONMENT AND WORK ENGAGEMENT OF TEACHER EDUCATORS*

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Abstract

As work engagement is a desirable work experience that leads to positive consequences, educational organizations need to search for effective ways to teacher educators' work engagement. The main purpose of this study is to investigate the mediating effect of psychological capital on the relationship between work environment and work engagement of teacher educators in Myanmar. Data of 423 teacher educators were collected from two universities of education and eight education degree colleges by using a cluster sampling technique. The design of this study was cross sectional. Both quantitative and qualitative approaches were used in this study. The Work Environment Scale, Psychological Capital Questionnaire and Work Engagement Scale were used to evaluate the teacher educators' work environment, psychological capital and work engagement. The correlational analysis showed that job resources were positively related to psychological capital and work engagement whereas job demands were negatively related to psychological capital and work engagement. Furthermore, psychological capital was positively related to work engagement. In addition, the mediation analysis indicated that the psychological capital was fully mediated the relationship between resources and opportunities and work engagement. But it was partially mediated the relationship between organizational support and work engagement, the relationship between financial support and work engagement as well as the relationship between work load and work engagement. Therefore, the psychological capital had a mediating effect on the relationship between work environment and work engagement in this study. Moreover, the results of qualitative study found that work environment, workplace relationship, respect and recognition, passion for the job, availability of resources for the job, training, pay and remuneration were important factors that impact on the teacher educators' work engagement.

Keywords: Work Environment, Psychological Capital, Work Engagement

Introduction

Teachers are primary component for educational excellence, and the need to attract and retain highly capable individuals to the teaching profession is clear. Moreover, the quality teaching depends upon the discretionary efforts put forth by the teachers, the enthusiasm they show for their job and the willingness to achieve their personal goals as well as the goals of the educational institution they work for. Teachers' engagement plays an important role in students' learning outcomes and teaching effectiveness. Engaged teachers are better at overcoming work-related stress, take active roles in workplace and make contributions to their schools. Teachers experiencing work engagement are better able to cope with increasing demands, and can generate support (Bakker & Bal, 2010). As engaged teachers perform better in their work, it is needed to investigate what make teachers engage. The work environment is one of the factors that can contribute to the teachers' work engagement.

The Job Demands and Resources Model (Demerouti et al., 2001) proposed that the characteristics of work environment can be classified into job demands and job resources. Researches showed that teachers who are supported with job resources are more engaged regardless of the level of demands (Klusmann et al., 2008) and teachers who are engaged with their work are less likely to report their intention to leave the teaching profession (Klassen et al., 2012). The work experience of teachers is dependent on demands and resources, also the personal resources have positive effects on teachers work engagement. Together with job resources,

* First Prize (2023)

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personal resources are seen as the most important determinants of work engagement (Xanthopoulou et al., 2009). Personal resources can be helpful in the adaptation to work environments whereas job resources are work characteristics.

Recent studies particularly focused on the relationship between work engagement and several personal resources, such as organization-based self-esteem and self-efficacy (Xanthopoulou et al., 2007), while it is expected that the construct of psychological capital is also positively correlated with engagement (Sweetman & Luthans, 2010). Psychological capital exists of the personal resources: hope, optimism, resilience and efficacy (Sweetman & Luthans, 2010). Both job and personal resources are important predictors of work engagement, but, personal resources have received less attention. Indeed, investigation of personal resources is important not only because of its predictive power of work engagement, but also because they are highly malleable and largely under individuals' discretions, and thus are easier to develop.

Besides a direct link between psychological capital and work engagement, personal resources can strengthen the positive effects of job resources on work engagement (Xanthopoulou et al., 2009). The Conservation of Resources (COR) theory states that resources tend to create other resources, since individuals want to accumulate their resources rather than only protecting them (Hobfoll, 2002). Enhancing employees' personal resources can lead to a rise in work engagement. The role of personal resources has mainly examined in the relationship between unfavorable work characteristics and negative outcomes (Xanthopoulou et al., 2007), while it is expected that personal resources can also buffer the relationship between job resources and work engagement. Therefore, this study aimed to investigate the relationship between work environment and work engagement of teacher educators in Myanmar and whether this relationship is mediated by psychological capital.

Purposes of the Study

The main aim of the present study is to investigate the mediating effect of psychological capital on the relationship between work environment and work engagement of teacher educators in Myanmar.

The specific objectives are

- to ascertain the relationship among work environment, psychological capital and work engagement of teacher educators and
- to find out the factors influencing the work engagement of teacher educators.

Definitions of Key Terms

Work environment. The Job Demands and Resources model proposed that the characteristics of work environments can be classified in two general categories, job demands and job resources, which incorporate different specific demands and resources, depending on the context under study (Demerouti et al., 2001).

Psychological capital. Psychological capital is defined as one's positive appraisal of circumstances and probability for success based on motivated efforts and perseverance. (Luthans et al., 2007).

Work engagement. Work engagement refers to a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli & Bakker, 2004).

Related Literature Review

Work Engagement

The concept of work engagement was first introduced by Kahn (1990). Kahn (1990) defined work engagement as the harnessing of organizational members' selves to their work roles; an engaged people employ and express themselves physically, cognitively and emotionally during role performances. Schaufeli and colleagues (2002) also position engagement as the positive antipode of workplace burnout. However, they argue that instead of being two opposite poles, burnout and engagement are independent, yet negatively correlated states of mind. Consequently, they define work engagement as a productive, happy attitude at work that is characterized by vigor, dedication, and absorption (Schaufeli et al., 2002). *Vigour* reflects a desire to devote effort in one's work, perseverance in the face of job related obstacles, and an expression of high levels of energy and mental toughness while working. *Dedication* refers to a particularly intense work involvement and encompasses feelings of inspiration, pride, enthusiasm, significance and challenge. The final dimension of engagement is *absorption*. *Absorption* is characterised by being totally focused on one's work activities in a manner that time appears to pass speedily and one finds it increasingly difficult to disengage from his or her work.

Work Environment and Work Engagement

According to the Job Demands and Resources (JD-R) model, the characteristics of work environments can be classified in two general categories, job demands and job resources, which incorporate different specific demands and resources, depending on the context under study (Demerouti et al., 2001). Job resources are those features of the job which have the potential to mitigate the deleterious effects of job demands; can pave the way for effective task completion and goal accomplishment; and might provide opportunities for personal development and growth. Job demands are the physical, social, or organizational components of a job that necessitate prolonged physical or mental effort and are consequently linked to physiological or psychological expenses. Hakanen et al. (2006) found evidence of a positive relationship between work engagement and job resources. Their study on Finnish teachers revealed that job control, information, supervisory support, innovative climate and social support were all positively associated with work engagement. In another study, Bakker et al. (2007) reported similar findings. More particularly, they found that six job resources, namely, job control, supervisor support, climate, innovativeness, information and appreciation were positively and were significantly linked with teachers' levels of work engagement. When there is a lack of resources individuals cannot reduce the potentially negative influence of high job demands and they cannot achieve their work goals (Bakker et al., 2004). Bakker et al. (2004) concluded that when demands are high specifically workload, emotional demands, and work-home conflicts are elevated, it becomes difficult for employees to allocate their attention and energy efficiently because they have to engage in greater activation and/or effort and this, in turn, negatively affects their performance.

Psychological Capital and Work Engagement

Psychological capital, or PsyCap, is the positive psychological state of development of an individual. It is defined by (1) having self-efficacy, or the confidence to take on and put in the effort necessary to succeed at challenging tasks; (2) having optimism, or the positive attribution, about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) having resilience, or the ability to sustain and bounce back from problems and adversity to achieve success. (Luthans et al., 2007). Luthans et al., (2010) proposed that psychological capital would be positively related to work engagement. Their argument was based on JD-R model (Demerouti et al., 2001) that suggests that job and personal resources interact with job demands to predict work engagement, which in turn

predicts performance. Hodges (2010) found that psychological capital correlated directly and significantly with employee engagement. The four dimensions of PsyCap according to Sweetman and Luthans (2010) have a relation to the work engagement.

Methods

Sample of the Study

The participants for this study were chosen by using cluster random sampling technique. Data for 423 teacher educators were collected from two universities of education and eight education degree colleges. Participants were aged 25–58 of whom 55 were males and 368 were females.

Research Method

Design of this study was cross sectional. Both quantitative and qualitative approaches were used in this study.

Research Instrumentation

Work Environment Scale

Teacher educators' work environment was measured by Work Environment Scale developed by researcher. Work Environment Scale for teacher educators was developed by using the exploratory and confirmatory factor analyses. According to factor analysis results, there are 5 factors with a total of 50 items in the Work Environment Scale. The five factors are organizational support, resources and opportunities, work load, financial support and job security. The items were rated on 5-point Likert scale (1= never to 5= always). In order to confirm the exploratory factor analysis results, confirmatory factor analysis was carried out. After the results of exploratory factor analysis and confirmatory factor analysis of Work Engagement Scale, the final Work Engagement Scale consisted of five subscales with 42 items in this study. Confirmatory factor analysis showed that the fit indexes for $\chi^2/df = 1.916$, Tucker–Lewis index (TLI) = 0.907, comparative fit index (CFI) = 0.917, and root mean square error of approximation (RMSEA) = 0.047. The indicators of the model fit were accepted. Cronbach's alpha internal reliability coefficients were found as 0.927 for the Organizational Support factor, 0.869 for the "Resources and Opportunities" factor, 0.892 for "Work Load" factor, 0.831 for "Financial Support" factor, and 0.898 for "Job Security" factor. Cronbach's alpha reliability coefficient for the whole scale was found as 0.871.

Psychological Capital Questionnaire

Psychological Capital Questionnaire (PCQ) contains 24 items that are measured across the four dimensions of self-efficacy, hope, optimism and resilience on a five-point Likert scale (Luthans et al., 2007). To confirm the factor structure of PCQ, confirmatory factor analysis (CFA) was conducted. The two items with low loadings were removed from the model. Confirmatory factor analysis showed that the fit indexes for $\chi^2/df = 2.232$, Tucker–Lewis index (TLI) = 0.900, comparative fit index (CFI) = 0.914, and root mean square error of approximation (RMSEA) = 0.040. The final model (total 22 items with 4 factors) had reached the acceptable level of all fit indices in this sample. Cronbach's alpha internal reliability coefficients are found as 0.785 for self-efficacy, 0.706 for hope, 0.829 for resilience and 0.768 for optimism. Cronbach's alpha reliability coefficient for the whole questionnaire was found as 0.863.

Work Engagement Scale

The Utrecht work engagement scale (Schaufeli & Bakker, 2003) had 17 items comprising of six items for vigour, five items for dedication and six items for absorption on a five-point Likert

scale. To confirm the factor structure of the Utrecht’s Work Engagement Scale (UWES), CFA was conducted. Confirmatory factor analysis showed that the fit indexes for $\chi^2/df = 2.00$, Tucker–Lewis index (TLI) = 0.939, comparative fit index (CFI) = 0.950, and root mean square error of approximation (RMSEA) = 0.023. The indicators of the model fit were accepted. Cronbach’s alpha internal reliability coefficients are found as 0.718 for vigour, 0.852 for dedication and 0.667 for absorption. Cronbach’s alpha reliability coefficient for the whole scale was found as 0.797.

Instrumentation for Qualitative Study

Teacher educators selected for qualitative study were interviewed with semi-structured interview questions to explore the factors that are related to work environment and work engagement. The interview has been built based on quantitative result findings and theoretical framework of this study. The interview questions were constructed based on the following facts;

- (1) Conditions of work environment (Job Demands and Resources)
- (2) Coping with challenges in work environment
- (3) Antecedents of work engagement
- (4) Barriers of work engagement
- (5) Supports for work engagement

Data Analysis and Research Findings

Findings of Quantitative Study

Relationship Among Work Environment, Psychological Capital and Work Engagement of Teacher Educators

Pearson product-moment correlations were calculated to examine the relationship among work environment, psychological capital and work engagement and the criterion $p < .05$ was used to determine statistically significant relationship. Table 1 showed that the significant correlation among work environment (job demands, job resources), psychological capital and work engagement of teacher educators.

Table 1 Correlations among Work Environment (Job Demands, Job Resources), Psychological Capital and Work Engagement of Teacher Educators

	JR	OS	RO	FS	JS	WL (JD)	Psycap	WE
Job Resources (JR)	1.00	.842**	.799**	.597**	.493**	-.364**	.442**	.584**
Organizational Support (OS)		1.00	.654**	.276**	.204**	-.332**	.396**	.481**
Resources and Opportunities (RO)			1.00	.257**	.162**	-.328**	.451**	.473**
Financial Support (FS)				1.00	.245**	-.191**	.240**	.463**

	JR	OS	RO	FS	JS	WL (JD)	Psycap	WE
Job Security (JS)					1.00	-.112**	.061**	.164**
Workload (Job Demands, JD)						1.00	-.382**	-.688**
Psychological Capital (Psycap)							1.00	.581**
Work Engagement (WE)								1.00

Note. ** $p < .01$

As expected, job resources (organizational support, resources and opportunities, financial support and job security) were positively and significantly related to work engagement and psychological capital. However, job demands (work load) were negatively and significantly related to work engagement and psychological capital. In addition, psychological capital was positively and significantly related to work engagement. The higher the teacher educators' psychological capital, the more engaged they are in their work. It can be said that teacher educators who have sufficient job resources can be engaged more in work and can get high psychological capital. Teacher educators who have less job demands are more engaged in work and have high psychological capital.

Mediation Effect of Psychological Capital on Work Environment and Work Engagement Relationship

Mediation analysis was carried out using the approach described by Baron and Kenny (1986). To identify the presence of mediation, four conditions have to be met. 1. The independent variable (work environment) is a statistically significant predictor of the dependent variable (work engagement). 2. The independent variable (work environment) is a statistically significant predictor of the mediator variable (psychological capital). 3. The mediator (psychological capital) is a statistically significant predictor of dependent variable (work engagement). 4. The observed effect of the mediator on the relationship between predictor and dependent variable is examined either full or partial mediation model. Full mediation model resulted in the predictor-outcome variable relationship being non-significant. A partial mediation model resulted in a much weaker relationship between the predictor and the outcome variable.

To examine the mediating effect of psychological capital on the relationship between work environment and work engagement, a hierarchical multiple regression analysis was conducted. Summary of regression analyses were shown in Table 2. In Step 1, the findings of the standard multiple regression analysis showed that job resources (organizational support, resources and opportunities, and financial support) and job demands (work load) together made a significant predictive contribution to work engagement. Because of the relationship between the predictor (work environment) and the outcome variable (work engagement) was significant, the analysis was continued to Step 2 (see Step 1 in Table 2).

In Step 2, the findings of the standard multiple regression analysis revealed that job resources (organizational support, resources and opportunities, and financial support) and job demands (work load) together made a significant predictive contribution to psychological capital.

This finding was met the second condition that the independent variable (work environment) is a statistically significant predictor of the mediator variable (psychological capital) (see Step 2 in Table 2)

In Step 3a, the results of hierarchical multiple regression analysis showed that a significant relation between the mediator (PsyCap) and the outcome variable (work engagement) (see Step 3a in Table 2) In the Step 3b, the predictors (work environment) and mediator (psychological capital) together predicting the outcome variable (work engagement). The result of hierarchical multiple regression analysis showed that organizational support ($\beta = 0.104, p < .05$), financial support ($\beta = 0.263, p < .001$) and work load ($\beta = - 0.482, p < .001$) made statistically significant to work engagement whereas resources and opportunities ($\beta = 0.06, p = .115$) was non-significant (see Step 3b in Table 2).

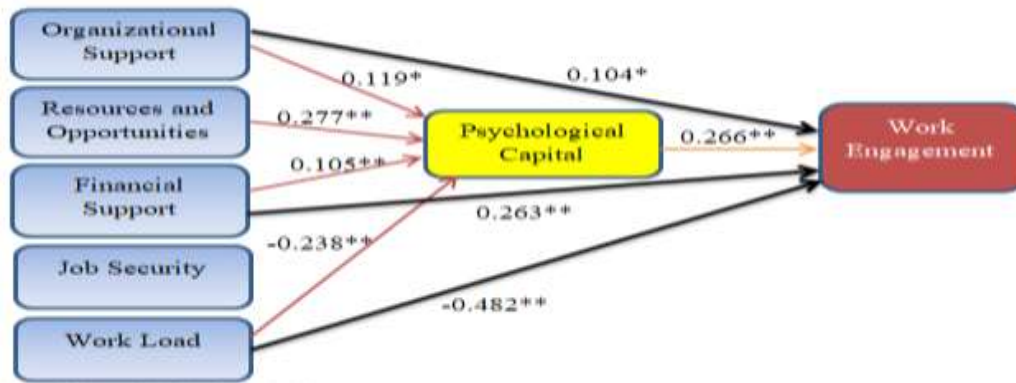
It can be said that psychological capital fully mediated the relationship between resources and opportunities and work engagement because the relationship became non-significant after the inclusion of the psychological capital. In addition, the psychological capital partially mediated the relationship between organizational support and work engagement, the relationship between financial support and work engagement as well as the relationship between work load and work engagement due to became significantly weaker relationship after the inclusion of the psychological capital (see Step 1 and Step 3b in Table 2). Therefore, psychological capital had a mediating effect in the relationship between work environment and work engagement. In addition, organizational support, resources and opportunities, financial support and workload still had directive predictive contribution to work engagement after the mediator effect was controlled for.

Table 2 Summary of Regression Analyses for the Prediction of Work Engagement of Teacher Educators

Predictors	Dependent Variables			
	Standard Multiple Regression Analyses		Hierarchical Multiple Regression Analysis	
	Step 1 Work Engagement	Step 2 Psychological Capital	Step 3a Work Engagement (Model 1)	Step 3b Work Engagement (Model 2)
	β	β	β	β
Psychological Capital	n.a	n.a	0.581**	0.266**
Organizational Support	0.135*	0.119*	n.a	0.104*
Resources and Opportunities	0.134*	0.277**	n.a	0.060
Financial Support	0.291**	0.105*	n.a	0.263**
Job Security	0.018	0.061	n.a	0.02
Work Load	-0.545**	-0.238**	n.a	-0.482**

Predictors	Dependent Variables			
	Standard Multiple Regression Analyses		Hierarchical Multiple Regression Analysis	
	Step 1 Work Engagement	Step 2 Psychological Capital	Step 3a Work Engagement (Model 1)	Step 3b Work Engagement (Model 2)
	β	β	β	β
<i>F</i>	145.23**	33.21**	214.826**	92.130**
<i>R</i> ²	0.635	0.285	0.338	0.686
<i>Adj R</i> ²	0.631	0.276	0.336	0.681
<i>R</i> ² Change				0.345

Note. ** $p < .001$, * $p < .05$



Note. ** $p < .001$, * $p < .05$

Figure 1 A Mediating Model of Psychological Capital on Work Environment and Work Engagement of Teacher Educators

Findings of Qualitative Study

A follow-up program was conducted to provide more detailed information about teacher educators’ work environment, psychological capital and work engagement and to investigate the significant factors which influence on work engagement of teacher educators. Teacher educators were identified into four groups based on their levels work environment and work engagement such as high work environment and high work engagement, high work environment and low work engagement, low work environment and high work engagement and low work environment and low work engagement. From the total of 423 teacher educators, 16 teacher educators were selected by using purposive sampling technique and four teacher educators were chosen for each group. A semi-structured interview schedule was designed and used to obtain information about teachers’ experience and knowledge of the factors that get them engaged to work.

From the analysis of interviews with the teacher educators, seven main themes were identified as important factors impact on the teacher educators’ work engagement: work environment, workplace relationship, respect and recognition, passion for the job, availability of resources for the job, training, pay and remuneration. A major theme that emerged from the interviews was that a good work environment influences individual to be engaged to work. Rich et

al. (2010) found in their study that employee engagement comes from many features within the organisation. Along with Anitha (2013) who in their study found that working environment was the leading factor that contributed to employee engagement. Conditions of the work environment play an important role to employee in whether they want to keep working in the organization. In this research, it was found that the working environment is a large driver for employee engagement. All the teacher educators identified work environment as a major factor that influence their engagement to work. But the researcher believed that even in a negative work environment, engagement still has the power to flourish because the teacher educators said to be engaged with their organization. It may be due to their positive attitudes towards their profession and they used their own psychological capital to be engaged in their work.

According to Khan (1990), in order for these employees to perform well they would need to work in a conducive and supportive work environment where teams and colleagues are able to work cooperatively, allowing them to feel safe to fully involve themselves in their work roles. The researcher found this to be absolutely accurate; in this research the relationship between the teacher educators and their co-workers was incredibly important to them. Teacher educators talked about how the cordial relationship and family-like relationship that exist amongst them serve as a factor to employee engagement. Positive working relationships and a supportive environment helped employee to work better. Teacher educators supported each other by sharing and teaching each other their knowledge and solving problems together. Teacher educators confirmed that communication, trust, and cooperation led to better engagement. The teacher educators also talked about treating each other with respect and recognition that it was a two way thing to have good relationships with work colleagues. Teacher educators considered being sent for training as a form of recognition and motivated them to work harder.

Most of the teacher educators said that what they love to do have influenced their choice of profession and performance in the teaching role. Most of the teachers expressed that job is important for them and the passion of work affects work engagement. Most of the teacher educators reported that having the resources needed for the job essentially influence employee engagement. Most of the teachers are of the view that when they are well provided with materials and resources they require in their teaching; such would get them engaged with their work.

Teacher educators also identified training as a factor influenced to employee engagement. The importance of training and career development was emphasized by Gruman and Saks (2011) when they commented that the performance management or career development was the human capital in an organisation and that it was of vital importance. Teacher educators talked about learning new skills about their jobs in response to the twenty first century technological changes have made them confident in profession and become engaged to their jobs. Pay and remuneration was highlighted by teacher educators as an important antecedent to employee engagement. Most of the teacher educators confirmed that pay rise will reduce teachers' turnover and encourage them to be engaged to work. This is because teacher educators believe they are poorly remunerated.

Discussion

The main purpose of this study was to investigate the mediating effect of psychological capital on the relationship between work environment and work engagement of teacher educators in Myanmar. A total of 423 teacher educators from two universities of education and eight education degree colleges took part in this study. Work Environment Scale, Psychological Capital Questionnaire, Work Engagement Scale and semi-structured interview questions were used as instruments for quantitative and qualitative study.

Pearson product-moment correlations were calculated to examine the relationship among work environment (job demands, job resources), psychological capital and work engagement. As expected, job resources (organizational support, resources and opportunities, financial support and job security) were positively and significantly related to work engagement and psychological capital. This finding was consistent with the previous studies that a positive relationship between work engagement and job resources (Hakanen et al., 2006; Bakker et al., 2007). However, job demands (work load) were negatively significantly related to work engagement and psychological capital. This finding was in line with the study of Schaufeli and Baker (2004) that workload negatively influenced work engagement. In addition, psychological capital was positively significantly related to work engagement. This finding supported the results of the previous studies found that a positive relation between PsyCap and work engagement (Simons & Buitendach, 2013; Sihag & Sirakwal, 2014). The higher the teacher educators' psychological capital, the more engaged they are in their work. It can be said that teacher educators who have sufficient job resources can be engaged more in work and can get high psychological capital. Teacher educators who have less job demands are more engaged in work and have high psychological capital.

Multiple regression analysis showed that psychological capital fully mediated the relationship between resources and opportunities and work engagement because the relationship became non-significant after the inclusion of the psychological capital. In addition, the psychological capital partially mediated the relationship between organizational support and work engagement, the relationship between financial support and work engagement as well as the relationship between work load and work engagement due to become significantly weaker relationship after the inclusion of the psychological capital. In addition, organizational support, resources and opportunities, financial support and workload still had directive predictive contribution to work engagement after the mediator effect was controlled for. Therefore, psychological capital had a mediating effect on the relationship between work environment and work engagement. This means that even in a negative work environment, engagement still has the power to flourish because the teacher educators used their own psychological capital to be engaged in their work.

For qualitative study, a follow-up program was conducted to investigate the significant factors which influence on work engagement of teacher educators. Moreover, it gives to provide more detailed information about teacher educators' work environment, psychological capital and work engagement. According to the qualitative study results, it was found that work environment, workplace relationship, respect and recognition, passion for the job, availability of resources for the job, training, pay and remuneration were important factors that impact on the teacher educators' work engagement.

Conclusion

As providing quality education with respect to global standards is vital in teacher education, teacher is the main person in imparting knowledge, skills, attitude and nurturing the new generations. As work engagement is a desirable work experience that leads to positive consequences, educational organization needs to search effective ways for teacher educators' work engagement. The key findings of this study are beneficial not only to teacher education sector in Myanmar, but also to the other education sector. The implications of the key findings provide significant benefits by understanding the important determinants of work engagement of teacher educators.

The results of this study have shown that psychological capital mediated in the relationship between work environment and work engagement among teacher educators. It can be said that even in a negative work environment, engagement still has the power to flourish because the teacher educators used their own psychological capital to be engaged in their work. Previous

research demonstrates that elements of psychological capital contribute to wellbeing and engagement (Avey et al., 2010; Avey et al., 2011).

Administrators can ensure that their teachers possess high levels of psychological capital (PsyCap) in two ways. The degree of PsyCap could be taken into consideration by administrators when hiring and choosing new teachers. By doing this, they will have a better chance of hiring engaged teachers. Luthans and Youssef (2007) stated that PsyCap is amenable to development. This implies that through interventions and training, administrators can concentrate on helping teachers develop resilience, hope, optimism, and self-efficacy.

To sum up this study offers new insights in how to promote work engagement levels in organization. Including psychological capital in the intervention programmes aimed to increase work engagement may facilitate the positive effect of work environment. As evidenced by the study, teacher educators who have high psychological capital level showed better result on work engagement compared to those with low psychological capital level. This study adds to the knowledge on strategies to foster well-being at work, showing that psychological capital may be used by organizations as well-being promoting factor. Findings of the present study point out important implications for the recruitment selection, training academics as well as professional development of teachers not only in educational institutions but also in other institutions of Myanmar.

Acknowledgements

We would like to thank Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-rector, Yangon University of Education) for their administrative support in conducting this research. We would like to show my deepest gratefulness to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her guidance, support and positive critiques. Our deepest appreciation goes to Professor Dr. Khin Zaw (Rector (Retired), Yangon University of Education), Professor Dr. Khin Thuza Saw (Principal (Retired), Thingangyun Education Degree College) and Dr. Kyaw Zan Hla (Associate Professor (Retired), Department of Educational Psychology, Yangon University of Education) for their kindness, support, reviews and positive encouragement. A special word of thanks to the teacher educators from Universities of Education and Education Degree Colleges for their cooperation to complete the questionnaires and interview.

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EXPLORING THE TEACHERS' PERCEPTIONS OF ONLINE TEACHING*

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Abstract

The primary purpose of this study was to investigate the teachers' perceptions of online teaching. The open-ended questionnaire survey method and qualitative research design were applied in this study. A total of 100 teacher educators from Yangon University of Education and senior assistant teachers who are currently post graduate students in Yangon University of Education participated in this study. The open-ended questionnaire consisted of 7 open-ended questions about teachers' perception of online teaching. Through the thematic analysis, four key themes such as efficiency of online teaching, benefits of online teaching, barriers to online teaching and needy support for online teaching were identified and each of these themes included three sub-themes. Under the efficiency of online teaching, three sub-themes emerged from the main theme: (i) digital literacy, (ii) engagement and (iii) restricted practical exposure. Under the benefits of online teaching, three sub-themes emerged from the main theme: (i) international cooperation & communication, (ii) flexibility and (iii) professional development. Under the barriers to online teaching, three sub-themes emerged from the main theme: (i) teacher-student relationship, (ii) technical issues & technological illiteracy and (iii) health issues. Under the needy support for online teaching, three sub-themes emerged from the main theme: (i) technical support, (ii) time, financial support and (iii) training programs. The findings of this study provided information for concerned authorities to reflect on, with the goal of implementing adjustments to their existing practices in light of the fact that online teaching continues to be an area of development in education.

Keywords: Perception, Teacher Perception, Online Teaching

Introduction

During the COVID-19 global crisis, when the entire world's activities across all domains of human life were restricted, information and communications technology (ICT) played a supporting role in sustaining teaching-learning activities (Thaheem et al., 2022). On the other hand, ICT-integrated teaching and learning, such as online teaching, provided a flexible approach and better access to learning opportunities as a substitute for face-to-face instruction (Akram et al., 2021). According to Bennett and Lockyer (2004), as the number of online programs and course offerings grows, the teachers' roles and the teaching process also has been changed. Online teaching requires an increasing number of faculty members and support workers.

Being an essential part of the present time, educators currently facing a growing need and pressure to transition into online education are being compelled to critically reassess their fundamental beliefs regarding pedagogy, the dynamics of the learning process, and their responsibilities and functions as instructors (Wiesenberg & Stacey, 2013). The increasing enthusiasm for online education poses a significant challenge for higher education institutions, compelling them to reconsider their cultural, academic, organizational, and pedagogical frameworks to effectively adapt to a new teaching and learning paradigm (Howell et al., 2004).

* Second Prize (2023)

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In Myanmar, online learning has yet to be heard and known widely among people before the pandemic. During the pandemic, which made people stay home, the parents, the teachers and the students looked for the best way to continue learning at home. Due to the essence of internet access, online learning and online teaching can be effective (Myanmar Digital News, 2022). Spontaneously, online teaching has become increasingly prevalent, especially in the wake of the COVID-19 pandemic. It presents several advantages, but in addition to those, it poses a selection of difficulties and introduces several novel aspects for educators to consider. However, there is little research to explore teachers' perceptions of online teaching in Myanmar. In this regard, this study tends to provide a deep insight into understanding teachers' perceptions regarding efficiency, advantages, needed support for online teaching, and challenges they encounter.

Purposes of the Study

The primary purpose of the study is to investigate the teachers' perceptions of online teaching. The specific objectives of this study are:

1. To find out teachers' perceptions of the effectiveness of online teaching
2. To investigate teachers' perceptions of the advantages of online teaching
3. To find out teachers' perceptions of the challenges of online teaching
4. To investigate teachers' perceptions of the support required for effective online teaching

Definitions of Key Terms

Perception. Perception is the action of seeing and perceiving through the sensory organs. It can be in the form of image, imagination, thinking, opinion, idea or impression (Mok, 2003).

Teacher perception. Teacher perceptions are teachers' mental impressions of their work and pupils are influenced by their previous knowledge and life experiences, shaping their professional behavior (Papadakis & Kalogiannakis, 2020).

Online teaching. Teaching that is primarily conducted online is referred to as online teaching (Baran et al., 2011).

Review of Related Literature

As a result of nationwide lockdown, educators began to teach virtually as they had no other option. Online teaching has taken a trend during lockdown as there is no other option to teach students and complete their syllabus. Not only this, the online teaching has also been initiated to make the students busy during quarantine and to keep their mind at ease by providing different assignments and other works (Dubey & Singh, 2020).

Additionally, it resulted in a decrease in the utilization of transportation resources and associated expenditures. The use of this technology has facilitated several administrative duties, including the documentation of lectures and the monitoring of attendance. Online teaching can be administered to a large number of students without space constraints and by using multimedia technology; they can deliver the lecture in an effective way (Mukhtar et al., 2020). Faculty members felt they need to take an online lecture in short because in the online teaching methods, it is difficult to keep the students' attention for long as the students get distracted and bored in a short span of time (Almahasees et al., 2021). Faculty members felt difficulty in teaching

psychomotor skills and hands-on sessions such as laboratory and clinical skills (Mukhtar et al., 2020).

Teachers confronted obstacles like a lack of basic infrastructure at home, technological problems, etc. Thus, it is appropriate that virtual teaching can only be effective with knowing the positive and negative perceptions and obstacles teachers face toward e-learning, as they are frontline employees of any educational foundation. With this backdrop, research endeavors need to scrutinize school teachers' perceptions as well as challenges concerning online teaching so that educational institutions and policymakers can use their experiences to bring about requisite changes by incorporating newer methods and techniques of teaching and learning during and after the pandemic (Kamal & Illiyan, 2021).

Method

Participants of the Study

The participants of this study were 50 teacher educators from Yangon University of Education and 50 senior assistant teachers who are current post graduate students in Yangon University of Education. The sample was chosen by using purposive sampling.

Research Method

The design and method used in this study were qualitative research design with interview questions method.

Instrumentation

The open-ended questionnaire consisted of 7 open-ended questions about teachers' perceptions of online teaching. All the items used in this study were conducted in the Myanmar language version. Then, experts review was conducted for face validity and content validity of the instruments by the experts in the field of educational psychology and educational test and measurement from Yangon University of Education. Next, some items were modified according to their suggestions and recommendations.

Qualitative Data Analysis Method

In the study, the thematic analysis was conducted in order to analyze the qualitative data. The responses of open-ended questions, the participants' qualitative data were assigned into codes that capture the essence of responses operationally and the frequency of the occurrence of codes has been analyzed. After developing codes, the next step involved defining and naming themes. By identifying broader patterns of shared meaning across the data set, coded data can be developed into a theme on illuminating the research question (Charmaz, 2001). In the study, participated teacher educators were coded as **TE**, and senior assistant teachers were coded as **ST**.

Results of Qualitative Study

This section presents the results of the survey conducted with the selected participants. The participants' entire response to each question was translated into English in spite of having certain probable grammatical changes. However, the original structure of the responses was retained as much as possible. Through the thematic analysis, four key themes were identified. Each of these themes included three sub-themes (see Table 1).

Table 1 Coding Scheme for teachers' perceptions of online teaching

Main themes	Sub-themes
Efficiency of Online Teaching	- Digital literacy
	- Engagement
	- Restricted practical exposure
Benefits of Online Teaching	- International cooperation & communication
	- Flexibility
	- Professional Development
Barriers to Online Teaching	- Teacher-Student Relationship
	- Technical Issues & Technological illiteracy
	- Health Issues
Needy Support	- Technical Support
	- Time, Financial Support
	- Training Programs

Efficiency of Online Learning:

According to qualitative analysis, three sub-themes emerged from the main theme (Efficiency of Online Learning): (i) digital literacy, (ii) engagement and (iii) restricted practical exposure. The following excerpts can best represent the information given by teacher educators and senior assistant teachers.

Digital literacy

Code - ST-1

Gender - Female

“Online teaching allows students and teachers to develop their technological skills and important digital literacy skills that are increasingly valuable in today's digital age”.

Code – TE-2

Gender - Female

“Undoubtedly, online teaching is a significant opportunity for enhancing one's digital literacy skills. Participating in online courses and educational activities automatically provides learners with exposure to a diverse range of digital tools, platforms, and resources”.

Code – TE-3

Gender - Male

“Teachers who may not have sufficient technological skills struggle to navigate and utilize the various online platforms and tools required for virtual teaching”.

Based on the above responses, it can be seen that digital literacy is absolutely essential for teachers who are teaching online, as it forms the foundation for effective and engaging online instruction. And then, digital literacy is being enhanced through online teaching as teachers have to use various digital tools and platforms to deliver their lessons.

Engagement

Code – TE-4

Gender - Female

“It is effective for student learning only if it can be supplemented with online resources and activities to further enhance their understanding and engagement”.

Code – ST-5

Gender - Female

“In the realm of online teaching, where physical presence is limited, creating opportunities for meaningful engagement becomes even more crucial”.

Code – ST-6

Gender - Female

“Engagement sparks student interest and motivation in the subject matter. When students find the online learning experience engaging and relevant, they are more likely to be enthusiastic about their studies”.

Based on the above responses, it can be seen that student engagement is key to a successful and effective online teaching environment. It is important for teachers to create interactive and stimulating online learning environments that encourage student engagement through various methods such as interactive assignments, group activities, and real-time discussions.

Restricted practical exposure

Code – TE-7

Gender - Male

“It may not be effective for certain subjects or hands-on activities which may require in-person interaction and supervision to ensure effective learning outcomes”.

Code – ST-8

Gender - Female

“It may lack the same level of personal interaction and hands-on learning opportunities that face-to-face classroom offers”.

Based on the above responses, it is obvious that restricted practical exposure in online teaching refers to the challenges and limitations faced by teachers and students when attempting to provide or gain hands-on, experiential learning experiences in a virtual or remote learning environment. This concept underscores the difficulty of replicating physical, in-person practical experiences in an online setting.

Benefits of Online Teaching:

According to qualitative analysis, three sub-themes emerged from the main theme (Benefits of Online Teaching): (i) international cooperation & communication, (ii) flexibility and (iii) professional development. The following excerpts can best represent the information given by teacher educators and senior assistant teachers.

International cooperation and communication

Code- TE-9

Gender - Female

“Online teaching opens up avenues for collaboration among teachers from different parts of the world. Through virtual platforms and online communities, educators can share resources, exchange ideas, and foster a global network of professional support”.

Code- ST-10

Gender - Male

“Online teaching allows teachers to reach a wider audience and connect with students from different parts of the world. This not only enhances cultural exchange but also helps diversify perspectives and encourage global collaboration”.

Code- TE-11

Gender - Female

“Online teaching allows teachers to communicate with their students through various channels such as chat, discussion boards, and video conferences. This creates opportunities for personalized feedback, one-on-one support, and ongoing dialogue that can promote better understanding and collaboration”.

Based on the above responses, it can be seen that international cooperation and communication play a pivotal role in enhancing the quality and effectiveness of online teaching. International cooperation and communication leverage the digital environment to connect learners and educators from around the world. Incorporating international cooperation and communication into online teaching enhances the quality of education by promoting cross-cultural understanding, critical thinking, and collaboration on a global scale.

Flexibility

Code- ST-12

Gender – Female

“Online teaching ensures that students can continue their academic progress even during times of crisis (COVID-19 pandemic) or when physical (face-to-face) classrooms are inaccessible”.

Code- TE-13

Gender – Male

“Due to various reasons such as geographical distance, time constraints, or health concerns, online teaching provides a convenient and flexible alternative that ensures continuous learning opportunities for students.”

Code- TE-14

Gender – Female

“Online teaching provides flexibility in terms of scheduling and location, enabling teachers to work from the comfort of their homes or while travelling”.

Based on the above responses, it is obvious that flexibility is one of the most beneficial factors of online teaching. Online teaching allows teachers to create flexible schedules, accommodating both their own availability and students’ needs. It also offers flexibility in regarding time and location and allowing students to access educational materials and resources from anywhere.

Professional development

Code- TE-15

Gender – Male

“Teachers can continuously update their skills and stay up-to-date with the latest digital tools and technologies through teaching online”.

Code- TE-16

Gender – Female

“Ongoing professional development opportunities should be offered to ensure that teachers stay up-to-date with the latest tools and techniques for online teaching”.

Code- ST-17

Gender – Female

“As educators engage in online teaching, they gain confidence in their ability to adapt to new technologies and deliver effective instruction in a virtual setting”.

Based on the above responses, it can be seen that professional development in online teaching is a dynamic and essential process. It equips educators with the skills, knowledge, and mindset required to excel in the ever-evolving landscape of virtual education, ultimately benefiting both instructors and their students.

Barriers to Online Teaching:

According to qualitative analysis, three sub-themes emerged from the main theme (Barriers to Online Teaching): (i) teacher-student relationship, (ii) technical issues & technological illiteracy and (iii) health issues. The following excerpts can best represent the information given by teacher educators and senior assistant teachers.

Teacher-student relationship

Code- TE-18

Gender – Female

Without the physical presence and immediate feedback from the teacher, students may become distracted or lose interest in their learning material”.

Code- ST-19

Gender – Female

“Lack of face-to-face interaction and physical presence in a classroom setting may hinder students' engagement and ability to fully grasp the complex concepts”.

Code- TE-20

Gender – Male

“Students can easily resort to cheating during online exams or assignments. They may provide unreliable reasons for their actions, such as technical difficulties or misunderstanding the instructions, to justify their dishonesty”.

Based on the above responses, it is obvious that one challenge of teaching online is the lack of personal interaction with students. This can make it difficult to gauge their understanding and address their individual needs.

Technical issues and technological illiteracy

Code- TE-21

Gender – Female

“Technical issues such as unreliable internet connections or incompatible devices can disrupt the learning process”.

Code- ST-22

Gender – Male

“Power outages disrupt online teaching sessions, leading to missed lessons and reduced learning opportunities”.

Code- TE-23

Gender – Female

“Teachers who may not have sufficient technological skills and then struggle to navigate and utilize the various online platforms and tools required for virtual teaching”.

Based on the above responses, it can be seen that teachers face technical issues such as poor internet connectivity, electricity and may lack of technological knowledge that can lead to disruption in online teaching.

Health issues

Code- ST-24

Gender – Female

“Health problems can arise when teaching online due to the sedentary nature of the job”.

Code- TE-25

Gender – Female

“Long-term computer use can cause eye strain, back pain, and poor posture.”

Code- TE-26

Gender – Male

“Prolonged screen time, sitting for long periods, and lack of physical activity can all contribute to health problems such as eye strain, back pain, and decreased overall well-being”.

Based on the above responses, it can be seen that online teaching can bring about a range of health-related issues for teachers due to prolonged screen time and sedentary work environments.

Needy Support:

According to qualitative analysis, three sub-themes emerged from the main theme (Needy Support): (i) technical support, (ii) time, financial support and (iii) training programs. The following excerpts can best represent the information given by teacher educators and senior assistant teachers.

Technical support

Code- TE-25

Gender – Female

“Teachers need a stable and reliable internet connection to conduct virtual classes, upload and download teaching materials, and communicate with students”.

Code- ST-26

Gender – Male

“Electricity is one of the most essential supports required to facilitate effective online teaching. Without a steady supply of electricity, teachers would not be able to power their computers, laptops, or any other device necessary for online instruction”.

Code- ST-27

Gender – Female

“Teachers need to be provided with the necessary devices, such as laptops or tablets, to ensure seamless online instruction”.

Code- TE-28

Gender – Female

“Having a supportive administration and resources such as online teaching resources, lesson plans, and materials can further enhance teachers' ability to facilitate online teaching successfully”.

Code- ST-29

Gender – Male

“Providing a dedicated team of technical support staff can help address any technical issues that teachers may encounter during their online teaching sessions”.

Based on the above responses, it can be seen that it is necessary to facilitate stable power supply, a stable and reliable internet connection and access and equity to technical devices. Moreover, teachers need constant assistance to troubleshoot any technical issues that may arise during their online classes. Therefore, it is crucial for schools and institutions to provide the necessary support and resources to help teachers succeed in their new teaching environment.

Financial support

Code- ST-30

Gender – Male

“Without adequate financial support, online teaching may be hindered, resulting in a less effective learning experience for students”.

Code- TE-31

Gender – Female

“Offering incentives such as grants or stipends for educators who successfully complete online teaching certification programs can help motivate them to further enhance their skills in this area”.

Based on the above responses, it can be seen that time and financial support are crucial factors in ensuring the success of online teaching including incentives.

Training programs

Code- TE-32

Gender – Female

“Teachers require comprehensive training programmes. These programmes should cover not only the technical aspects of online teaching to enhance their digital literacy skills but also effective instructional strategies and methods for engaging students in a virtual learning environment”.

Code- ST-33

Gender – Female

“Many teachers may not have received proper training or guidance on how to effectively use information and communication technology (ICT) tools for online teaching”.

Based on the above responses, it can be seen that well-prepared technological training which includes both technical and digital skills should be provided teachers to enable the effective online teaching.

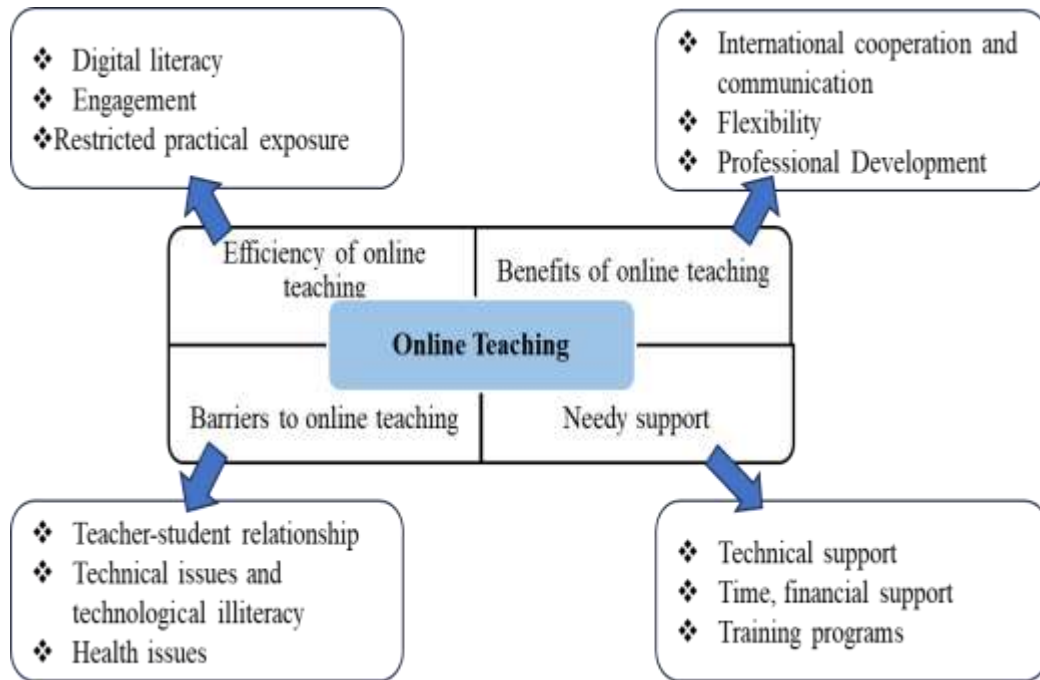


Figure 1 Summary Results of Teachers’ Perceptions of Online Teaching

Discussion

Findings reveal that four main themes were identified through qualitative analysis. They were efficiency of online teaching, benefits of online teaching, barriers to online teaching and needy support. Then, there were also three sub-themes for each main theme. Concerning with the efficiency of online teaching, there were three sub-themes such as digital literacy, engagement and restricted practical exposure. Participant teachers perceived that online teaching can improve digital literacy skills. This result is consistent with the study that digital literacy is urgently required for teachers to reach optimal levels of digital skills so as to undergo effective online teaching (Cristina, 2021). Most participant teachers said that , it is needed for students to be engaged for effective online teaching. Akram et al. (2022) also stated that technology-incorporated teaching such as online teaching also assists them in enhancing their instructional practices effectively, making the learning process exciting and interactive, and keeping learners motivated. And then, they perceived that there may be fewer hands-on learning opportunities may be less in online teaching. This is consistent with the finding that faculty members felt difficulty in teaching psychomotor skills and hands-on sessions such as laboratory and clinical skills (Mukhtar et al., 2020).

Concerning the benefits of online teaching, there were three sub-themes such as international cooperation and communication, flexibility, and professional development. Participant teachers perceived that teachers can collaborate and communicate with people from different parts of the world which enhances cultural diversity. This result is consistent with the study that online teaching opens up opportunities for students to access a wider range of educational resources and experts from around the world, enriching their learning experience. And have access to

a wide range of educational resources and materials (Rosalina et al., 2020). Most participant teachers said that online teaching provides flexibility regardless of place and time constraints for both teachers and students. This is consistent with the finding that the utilization of ICT for teaching-learning purposes enables teachers and students to stay connected and facilitates learners irrespective of their location and time (Thaheem et al., 2022). Teachers also feel comfortable guiding and discussing with their students within or outside the universities through several digital platforms such as WhatsApp, Facebook, and Google groups (Hodgson & Shah, 2016). They perceived that online teaching can support for their professional development such as advancing their digital skills and gaining confidence in adapting new technologies. When faculty members see online learning as academically respected and recognized within their college or university, they are more confident and motivated to teach online and create high-quality courses (Arlie, 2016).

Concerning the barriers to online teaching, there were three sub-themes such as teacher-student relationship, technical issues, illiteracy, and health issues. Participant teachers perceived that students can be disturbed during lessons and can easily cheat due to a lack of personal interaction with teachers. This result is consistent with the study that in online learning, teachers' control over students is low and students' attitude of negligence has been witnessed to a great extent (Adedoyin & Soykan, 2020). Most participant teachers said that technical issues such as electricity outages, unreliable internet connections, incompatible devices and teachers who lack technological literacy are major obstacles to effective online teaching. This is consistent with the findings that there are many factors in developing countries; lack of ICT infrastructure (Akram et al., 2022), electricity and internet (Akram et al., 2021), technological knowledge and expertise (Asad et al., 2020). Dede et al. (2008) also stated that teachers' knowledge of online technologies present obstacle to online professional development. And then, the participant teachers perceived that health problems can arise while teaching online. According to Dayal (2023), educators who are engaged in remote teaching have expressed feelings of isolation, prolonged exposure to screens, difficulties in managing heightened stress levels, and fatigue resulting from an augmented workload.

Concerning with the needy support for online teaching, there were three sub-themes such as technical support, incentive support and training programs. Participant teachers perceived that stable internet connection, steady supply of electricity, access to electronic devices, a team of technical support and support from administrators. Support for technology is essential for developing effective online teaching strategies. When choosing which technology platforms to use, structuring the course in the online learning environment, making sure technologies work, troubleshooting when problems occur, assisting students with their technological issues, and setting up the technological infrastructure, faculty members require ongoing assistance, especially during the transition phase (Baran & Correia, 2014).

Most participant teachers said that online teaching can be effective if they have adequate time and financial support such as the provision of incentives. Shah et al. (2020) explored that few teachers reported fruitful results of adopting ICT in their teaching practices, while other teachers could not find time and feasibility to apply ICT in their teaching practices due to the limited time and tight working schedule. Allen and Seaman (2017) also suggested that a constructive dialogue about online teaching support and quality is needed because faculty members are concerned about the time and effort put into it and the lack of support and incentives from organizations. And then,

the participant teachers perceived that they require comprehensive training programs which include not only digital literacy skills but also pedagogical strategies for effective online teaching. Teachers need opportunities to reflect on the ways in which content, online technologies, and pedagogical methods interact within their own classrooms, so programs that support and develop teachers are crucial (Kohler, 2018).

The findings of this study provided information for concerned authorities to reflect on, with the goal of implementing adjustments to their existing practices in light of the fact that online teaching continues to be an area of development in education. In order to reduce obstacles to online teaching and to be effective online teaching, the following points were recommended.

Recommendations

1. Concerned educational authorities should efficiently formulate effective policies to incorporate ICT in teaching-learning practices that meet the country's current needs and academic situations at all levels.
2. Teachers should be provided with the opportunities to enhance their digital literacy and to expand their technological, pedagogical and content knowledge (TPACK).
3. Stakeholders should pay extra attention to making sure that ICT is successfully used in schools, and teachers should be rewarded for their efforts with incentives or awards.
4. Reward systems in which leadership recognition, tenure and promotion, and money stipends for additional work. and commitment to online education should be part of faculty members' careers.
5. Teachers should use a variety of resources and activities such as simulations, interactive websites, online museum exhibitions, social media, and gamification such as Twinkle, Quiz, Kahoot.
6. Strategies like regular check-ins, group discussions, video demonstrations, virtual rehearsals, individualized feedback sessions and collaborative projects should provide with clear guidelines and expectations for online participation to keep students engaged.
7. Alternative methods for fostering emotional support through virtual platforms and digital communication tool such as zoom, skype should be utilized in online teaching.
8. Educational authorities should prioritize the provision of necessary resources and support system for effective online teaching.
9. Educational stakeholders should operate backup power sources such as generators or battery backups to mitigate the impact of power outages.
10. School administrators and local internet providers should work together for providing internet access involving distribution of mobile hotspots.
11. Teachers should have access to a support network of colleagues and administrators to provide invaluable guidance and assistance for challenges of online teaching.
12. Teachers should take free online courses through online to improve their digital literacy skills.
13. Once the needs are analyzed and problematic areas are noted, alternative solutions should be negotiated with all the stakeholders and related precautions need to be taken.

14. Lastly, online and face-to-face teaching approaches should be incorporated to create a flexible learning environment that matches students' different requirements.

Limitations of the Study and Future Research

This study was conducted with a cross-sectional study design, so longitudinal studies should be conducted to be more reliable, generalized, and more valid data. This study included only one university of education. To be more representative, future research should be conducted with the remaining universities of education and basic schools. Moreover, participants comprised only teacher educators and senior assistant teachers. Additionally, more empirical studies among other populations, such as other in-service teachers, adolescents, basic education students, and other university students, should be studied to explore the importance of online teaching in the digital age.

Acknowledgements

We would like to offer our respectful gratitude to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-rector, Yangon University of Education) for allowing us to do this study. And we would like to express our honorable gratitude to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her great support and expert guidance for our study. Then, we would like to give special thanks to all participants of this study.

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HAPPINESS, DAILY STRESS AND PSYCHOLOGICAL HARDINESS AMONG ADOLESCENTS*

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Abstract

The main purpose of the study is to explore happiness, daily stress and psychological hardiness among adolescents. A total sample of 350 students was randomly selected from Shwegyin Township, Bago Region (East). The population in the study included Grade Nine, Grade Ten and Grade Eleven students with the age between 13 and 18 years. In order to find out happiness, daily stress and psychological hardiness, Humboldt Happiness Scale - Adolescent Version (HHS-AV) developed by Reynolds (2011), A Shortened Version of the Adolescent Stress Questionnaire (ASQ-S) developed by Byrne, Anniko, Boersma, Wijk, and Tillfors (2018), and Dispositional Resilience Scale: A Short Hardiness Measure (DRS-15) developed by Bartone (2013) were used. Independent samples *t*-test results revealed that there was no significant difference in total happiness by gender. But there were significant differences in positive affect subscale and cheerfulness subscale of happiness by gender. Independent samples *t*-test results also revealed that there was significant difference in daily stress by gender. According to independent samples *t*-test results, there was no significant difference in total psychological hardiness by gender. But there was significant difference in challenge subscale of psychological hardiness by gender. ANOVA results pointed out that there were significant differences in happiness, daily stress and psychological hardiness by age and grade. The results of Pearson's correlation showed that there were significant negative correlations between happiness and daily stress, daily stress and psychological hardiness. Furthermore, happiness was significantly and positively correlated with psychological hardiness. Again, multiple regression analysis showed that daily stress was significant negative predictor of happiness whereas psychological hardiness was significant positive predictor of happiness. It is hoped that the findings of the study will be useful to teachers, educators and parents to know the causes of daily stress and its negative impacts on adolescents and then find different nurturing ways to create happy and hardy adolescents.

Keywords: Happiness, Daily stress, Psychological hardiness

Introduction

Education is the sheet anchor and cradle of the personality. The aim of education is not only imparting bookish knowledge but also to make youth good citizens by bringing about their physical, mental, emotional and intellectual development. For all people, life is filled with joy and sorrow, success and failure, health and sickness, wealth and poverty. Mental health is an important component of overall health for all people and fundamental to individuals' well-being and optimal function (WHO, 2005).

Happiness is a central factor of mental health. Happiness can be comprehended as an outcome of life and has a major influence on positive mental health. In psychology, happiness is often used interchangeably with subjective well-being. Happiness is known as a feeling of prosperity, euphoria, or satisfaction. Happiness deals with people's perception of their emotional state, satisfaction with life.

Although most adolescents report positive levels of happiness, many adolescents experience stress while developing during this transitional period. Experiences of accumulated

* Third Prize (2023)

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stress are predictors of psychological problems and distress and can threaten adolescents' healthy development and well-being (Compas & Reeslund, 2009, as cited in Ness, 2013).

Stress is basic to life and it is related to many areas of psychology. Stress is known as the process of adjusting to or dealing with circumstances which disrupt, or threaten to disrupt a person's physical or psychological functioning. Stress can cause physical, psychological and behavioral problems. Moreover, stressful conditions can lead to a range of health problems and decreases in performance (Ness, 2013).

It is necessary to have stress-overcoming personality trait for effective performance. There are certain personal characteristics in the individuals that increase their inner resistance against stress and thereby protect them from stress-related diseases. One of such personality traits is psychological hardiness, which enables the individual to deal with stressful situations. Psychological hardiness was first considered by Kobasa. Psychological hardiness is the fundamental principle for resilience and a stable personality dimension, approach to life, and comprehensive cognitive appraisal mechanism.

Hardiness is a way to bounce back when facing with stress. Psychological hardiness is an important element that plays a basic role in man's life quality and to create a balance among different dimensions of it. A psychologically hardy student is strong, chalks out a plan of action to cope up, faces the stressful situations (like examinations, assignments, project work, etc.) and considers those stressful situations as learning opportunities (Narad, 2018). Although there has been number of researches about happiness and stress, there is no research that has done about the relationship among happiness, daily stress and psychological hardiness of adolescents.

Significance of the Study

Happiness, daily stress and psychological hardiness include important roles in adolescents' mental health and development. Knowledge about psychological hardiness provides important information about how adolescents achieve and maintain good mental health and well-being in the face of stress and adversity. Though all adolescents are psychologically, biologically and physically mature, it is important to examine how the influence of these aspects changes individually and leads to various health outcomes in life (Ness, 2013).

Today, happiness is an important factor in human life. Moreover, happiness is not only important to personal lives but also important to global community. A happy life is full of happiness, trust, commitment and power. According to Lyubomirsky, Diener, and King (2005), there are several major reasons why happiness is important to study. First, on the individual level, happiness can help people maintain their physical health and overcome their psychological difficulties, such as stress. Second, on the group or community level, happiness can help promote a better relationship between people and community life. Third, on a more general social level, happiness can serve as an important indicator of the success of policy implementation. Happiness may also protect against negative mental health. Therefore, happiness is worth promoting, not only because of its value to an adolescent's life as a whole, but also because an individual's subjective well-being can have positive impact on their remaining life expectancy and on their society as a whole.

Nowadays, happiness in educational environment has magnificent role in case of quality and planning education. Enjoying the education, activating sense of curiosity and increasing creativity in students are significantly related to their educational environment status. Many

adolescents today experience numerous potential stressors throughout the process of growth and development. As they grow older, they also experience the stressors linked to concerns about the future, about financial issues, and the challenges associated with the transition from adolescent dependency to adult autonomy (Ciairano, Menna, Molinar, & Sestito, 2009).

As Myanmar continues with its national reconciliation and attempts to move on from the internal conflict of the past, it needs all of its civilians to be of healthy body and mind. If not, dormant mental health issues could jeopardize the future. A society is a collection of individuals. If all of the individuals are stressed and have poor hardiness, an unhealthy society will surely follow. Individuals are the building blocks of the future, yet they cannot play their part if they are broken by stress or wracked with doubt. Daily stressors make adolescents stressful. Today, most suicides can be found in adolescents. The teachers and educators need to know the causes of stress among adolescents and need to give stressed adolescents much support to help them develop mentally, emotionally and physically.

In encountering problems and difficulties, hardiness primarily relates to the positive agreement and adjustment. So, it has become as an important variable in psychological research. The individual who has the characteristics of hardiness takes control when a change occurs and tries to determine what course of action to take. The promotion of psychological hardiness in society is of vital importance, particularly for the youth. Without psychological hardiness, people with poor stress responses can become angry and aggressive. Negative coping strategies such as drug and alcohol abuse have harmful effects on society, as well as on the individual. Therefore, positive coping strategies of stress in Myanmar should be studied.

In adolescents, it is important to own hardiness because adolescents have complex problems. Adolescents face with life's challenges that are complex and they need to prepare themselves to become physically and psychologically healthy adults. Psychological hardiness can help adolescents in managing such problems and stress. Adolescents with high psychological hardiness can cope effectively in dealing with stress. They can face and overcome that stress by using various coping strategies. Various kinds of stressors appear every day, every time and everywhere. Only happy and hardy adolescents can see the world with positive point of view.

Adolescents with no hardiness will be victims of stress and they will be losers in life. So, it is important for teachers, educators and administrators to notice these problems occur in current situation. They need to have the knowledge about happiness and hardiness and need to know widely about the relationship among happiness, daily stress and psychological hardiness of adolescents not only to gain academic progress but also to create happy life for their students. This situation demands the researchers to study happiness, daily stress and psychological hardiness among adolescents.

Purposes of the Study

The main purpose of the study is to explore happiness, daily stress and psychological hardiness among adolescents.

The specific objectives are

- to study happiness, daily stress and psychological hardiness of adolescents by gender, age and grade,

- to find out the relationship among happiness, daily stress and psychological hardiness of adolescents, and
- to explore whether daily stress and psychological hardiness predict happiness of adolescents.

Definitions of Key Terms

Happiness. Happiness has been defined as the affective balance between positive and negative affect with happiness resulting when positive affect outweighs the occurrence of negative affect (Bradburn, 1969).

Daily stress. Daily stress is defined as mundane hassles, strains, or annoyances associated with routine has the potential activities and transactions of everyday life. Daily stress is relatively minor, but to disrupt the flow of everyday life and add to overall levels of stress (Sweeney, 2013).

Psychological hardiness. Psychological hardiness is a constellation of personality characteristics that function as a resistance resource in the encounter with stressful life events (Kobasa, Maddi, & Kahn, 1982, as cited in Eroz & Onat, 2018).

Methodology

Sample of the Study

The population of the study comprised of Grade Nine, Grade Ten and Grade Eleven students from Shwegyin Township, Bago Region (East). The sample was chosen from the population by using simple random sampling technique. A total of 350 participants (13-18 age groups) from Shwegyin Township, Bago Region (East) participated in the study.

Research Method

In this study, descriptive survey design was used.

Research Instrumentation

To explore happiness, daily stress and psychological hardiness among adolescents, three instruments were adopted. One instrument was Humboldt Happiness Scale - Adolescent Version (HHS-AV) constructed by researcher Reynolds (2011), another was A Shortened Version of the Adolescent Stress Questionnaire (ASQ-S) developed by researchers Byrne et al. (2018) and the last was Dispositional Resilience Scale: A Short Hardiness Measure (DRS-15) developed by Bartone (2013).

Happiness questionnaire consisted of (28) items containing three subscales: optimism and positive self-worth, positive affect (reverse keyed items) and cheerfulness. Optimism and positive self-worth subscale consisted of (12) items, positive affect subscale consisted of (9) items and cheerfulness subscale consisted of (7) items. Each item of the questionnaire had a four-point Likert scale (1 = always never, 2 = some of the time, 3 = often, 4 = almost always). The questionnaire contained positive as well as negative items. So, the scoring key for positive items was 1, 2, 3, 4 and that for negative items was reversed 4, 3, 2, 1. High scores on the scale were an indication of high happiness and low scores on the scale were an indication of low happiness.

Daily stress questionnaire consisted of (27) items containing nine subscales: stress of home life (4 items), stress of school performance (3 items), stress of school attendance (2 items), stress

of romantic relationships (3 items), stress of peer pressure (4 items), stress of teacher interaction (3 items), stress of future uncertainty (3 items), stress of school/leisure conflict (3 items) and stress of financial pressure (2 items).

Each item of the questionnaire had a five-point Likert scale (1 = not at all stressful, 2 = a little stressful, 3 = moderately stressful, 4 = quite stressful, 5 = very stressful). The questionnaire contained positive items. So, the scoring key for the positive items was 1, 2, 3, 4, 5. High scores on the scale were an indication of high stress and low scores on the scale were an indication of low stress.

The instrument for measuring psychological hardiness consisted of 15 items with three subscales: commitment (5 items), control (5 items) and challenge (5 items). Each item of the questionnaire had a four-point Likert scale (1 = not at all true, 2 = a little true, 3 = quite true, 4 = completely true). The questionnaire contained positive as well as negative items. So, the scoring key for the positive items was 1, 2, 3, 4 and the scoring key for the negative items was reversed 4, 3, 2, 1. High scores on the scale were an indication of high hardiness and low scores on the scale were an indication of low hardiness.

Data Analysis and Research Findings

Descriptive Statistics of Adolescents' Happiness

Table 1 Descriptive Statistics of Adolescents' Happiness

Variable	No. of Students	Mean	SD
Happiness	350	78.60	11.25

According to the descriptive statistics shown in Table 1, the mean value of happiness was above average (78.60). This result pointed out that adolescents are active, romantically involve and they also have multiple close friendships, life satisfaction and good health.

Table 2 Descriptive Statistics of the Subscales of Adolescents' Happiness

Variables	No. of Items	Mean	Mean (%)	SD
Optimism and Positive Self-worth	12	34.36	71.59	15.21
Positive Affect	9	24.75	68.75	9.84
Cheerfulness	7	19.49	69.60	13.21

The results shown in Table 2 indicated that the mean percentage of optimism and positive self-worth subscale was the highest (71.59), that of cheerfulness subscale was the second-highest (69.60), and that of positive affect subscale was the lowest (68.75) among the subscales of happiness.

Comparison of Adolescents' Happiness by Gender

To find out whether the differences in adolescents' happiness with regard to gender was significant or not, independent samples *t*-test was used and reported in Table 3.

Table 3 Results of Independent Samples *t*-test of Adolescents' Happiness by Gender

Variables	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>p</i>
Optimism and Positive Self-worth	Male	167	33.68	7.18	-1.669	.096
	Female	183	34.98	7.38		
Positive Affect	Male	167	25.66	3.44	4.745***	.000
	Female	183	23.92	3.44		
Cheerfulness	Male	167	18.95	3.31	-2.613**	.009
	Female	183	19.98	3.97		
Happiness (Total)	Male	167	78.30	10.30	-.481	.631
	Female	183	78.88	12.08		

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

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

Based on the results shown in Table 3, the mean values of total happiness for both males and females were nearly the same and not significant. The results indicated that parents and teachers considered being happy as a fundamental step for success and they nurtured equally both male and female adolescents to be happy. Moreover, both male and female adolescents obtained equal opportunities. There was significant difference in positive affect subscale ($t(348) = 4.745, p < .001$). The mean scores of males were higher than those of females in positive affect subscale. There was significant difference in cheerfulness subscale ($t(348) = -2.613, p = .009$). The mean scores of females were higher than those of males in cheerfulness subscale. But, there was no significant difference in optimism and positive self-worth subscale.

Comparison of Adolescents' Happiness by Age

To find out whether there was a significant difference in adolescents' happiness by age, descriptive statistics and one-way analysis of variance (ANOVA) were computed.

Table 4 Descriptive Statistics of Adolescents' Happiness by Age

Variables	Age	<i>N</i>	Mean	<i>SD</i>	<i>F</i>	<i>p</i>
Optimism and Positive Self-worth	13-14	113	38.61	5.84	40.125***	.000
	15-16	125	30.98	6.23		
	17-18	112	33.85	7.64		
Positive Affect	13-14	113	25.54	3.75	13.148***	.000
	15-16	125	25.26	2.32		
	17-18	112	23.39	4.06		
Cheerfulness	13-14	113	21.52	3.44	31.669***	.000
	15-16	125	18.10	3.02		
	17-18	112	18.99	3.77		

Variables	Age	N	Mean	SD	F	p
Happiness (Total)	13-14	113	85.67	9.09	41.637***	.000
	15-16	125	74.34	8.55		
	17-18	112	76.23	12.50		

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

According to Table 4, students with the age between 13 and 14 had the highest mean score, students with the age between 17 and 18 had the second highest mean score and students with the age between 15 and 16 had the lowest mean score in the optimism and positive self-worth subscale, cheerfulness subscale, and total happiness. And, in positive affect subscale of happiness, the mean scores of students with the age between 13 and 14, and students with the age between 15 and 16 were slightly differences. The mean scores of students with the age between 17 and 18 had the lowest mean score in it.

Based on the result of ANOVA, the significant differences were found in the optimism and positive self-worth ($F(2,347) = 40.125, p < .001$), in positive effect ($F(2,347) = 13.148, p < .001$), in cheerfulness ($F(2,347) = 31.669, p < .001$) and in total happiness ($F(2,347) = 41.637, p < .001$).

Comparison of Adolescents' Happiness by Grade

To find out whether there was a significant difference in adolescents' happiness by grade. Descriptive statistics and one-way analysis of variance (ANOVA) were computed.

Table 5 Descriptive Statistics of Adolescents' Happiness by Grade

Variables	Grade	N	Mean	SD	F	p
Optimism and Positive Self-worth	Grade Nine	116	38.65	5.79	50.614***	.000
	Grade Ten	113	30.08	5.73		
	Grade Eleven	121	34.26	7.57		
Positive Affect	Grade Nine	116	25.49	3.71	13.641***	.000
	Grade Ten	113	25.40	2.35		
	Grade Eleven	121	23.44	3.94		
Cheerfulness	Grade Nine	116	21.57	3.45	38.986***	.000
	Grade Ten	113	17.70	2.69		
	Grade Eleven	121	19.17	3.79		
Happiness (Total)	Grade Nine	116	85.71	9.01	47.819***	.000
	Grade Ten	113	73.18	7.98		
	Grade Eleven	121	76.86	12.31		

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

According to Table 5, Grade Nine students had the highest mean score, Grade Eleven students had the second highest mean score and Grade Ten students had the lowest mean score in optimism and positive self-worth subscale, cheerfulness subscale, and total happiness. And, in

positive affect subscale of happiness, the mean scores of Grade Nine students and that of Grade Ten students were slightly differences and Grade Eleven students had the lowest mean score in it.

Based on the result of ANOVA, the significant differences were found in optimism and positive self-worth ($F(2,347) = 50.614, p < .001$), in positive effect ($F(2,347) = 13.641, p < .001$), in cheerfulness ($F(2,347) = 38.986, p < .001$) and in total happiness ($F(2,347) = 47.819, p < .001$).

Descriptive Statistics of Adolescents' Daily Stress

Table 6 Descriptive Statistics of Adolescents' Daily Stress

Variable	No. of Students	Mean	SD
Daily Stress	350	65.26	16.90

According to the descriptive statistics shown in Table 6, the mean value of daily stress was below average (65.26). This result pointed out that adolescents were experiencing frustration, fear, conflict, pressure, hurt, anger, sadness, inadequacy, guilt, loneliness and confusion in their daily life. Teachers and parents need to pay attention to the problems faced by adolescents and need to give the stressed adolescents much support to develop mentally, emotionally and physically.

Table 7 Descriptive Statistics of the Subscales of Adolescents' Daily Stress

Variables	No. of Items	Mean	Mean (%)	SD
Home Life	4	10.76	53.79	18.72
School Performance	3	6.77	45.12	15.83
School Attendance	2	3.79	37.89	17.25
Romantic Relationships	3	6.31	42.04	17.67
Peer Pressure	4	10.21	51.03	13.96
Teacher Interaction	3	6.80	45.33	16.44
Future Uncertainty	3	7.42	49.47	17.30
School/Leisure Conflict	3	7.51	50.06	17.02
Financial Pressure	2	5.71	57.06	21.97

The results shown in Table 7 indicated that the mean percentage of financial pressure subscale was the highest (57.06) and that of school attendance subscale was the lowest (37.89) among the subscales of daily stress.

Comparison of Adolescents' Daily Stress by Gender

To find out whether the differences in adolescents' daily stress with regard to gender was significant or not, independent samples *t*-test was used.

Table 8 Results of Independent Samples *t*-test of Adolescents' Daily Stress by Gender

Variables	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>p</i>
Home Life	Male	167	9.45	2.85	-6.617***	.000
	Female	183	11.95	4.06		
School Performance	Male	167	6.83	2.09	.434	.664
	Female	183	6.72	2.61		
School Attendance	Male	167	3.74	1.41	-.477	.634
	Female	183	3.83	1.97		
Romantic Relationships	Male	167	6.44	2.57	.927	.355
	Female	183	6.18	2.73		
Peer Pressure	Male	167	9.76	2.43	-2.880**	.004
	Female	183	10.61	3.04		
Teacher Interaction	Male	167	6.29	2.20	-3.739***	.000
	Female	183	7.26	2.60		
Future Uncertainty	Male	167	7.15	2.45	-1.868	.063
	Female	183	7.67	2.70		
School/Leisure Conflict	Male	167	7.44	2.17	-.458	.647
	Female	183	7.57	2.86		
Financial Pressure	Male	167	5.49	2.18	-1.752	.081
	Female	183	5.90	2.20		
Daily Stress (Total)	Male	167	62.60	13.74	-2.843**	.005
	Female	183	67.69	19.05		

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

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

For the total daily stress, the average mean score of male students was 62.60 and that of female was 67.69. The mean score of female students exceeds 5.09 points than that of male students. According to the table 4.15, the result of *t*-test showed that there was significant difference in total daily stress ($t(348) = -2.843, p = .005$). So, female students experienced more daily stress than male students. The results indicated that female adolescents were more experiencing stress academically, socially and emotionally than male adolescents. Moreover, they felt insecurity, jealousy and aggression than male adolescents in daily life.

Comparison of Adolescents' Daily Stress by Age

To find out whether there was a significant difference in adolescents' daily stress by age, descriptive statistics and one-way analysis of variance (ANOVA) were computed.

Table 9 Descriptive Statistics of Adolescents' Daily Stress by Age

Variables	Age	N	Mean	SD	F	p
Home Life	13-14	113	8.73	3.12	28.481***	.000
	15-16	125	11.78	3.14		
	17-18	112	11.66	4.13		
School Performance	13-14	113	5.49	2.32	30.514***	.000
	15-16	125	7.66	2.16		
	17-18	112	7.07	2.10		
School Attendance	13-14	113	2.97	1.50	26.539***	.000
	15-16	125	4.50	1.74		
	17-18	112	3.82	1.56		
Romantic Relationships	13-14	113	4.88	2.17	29.990***	.000
	15-16	125	6.71	2.00		
	17-18	112	7.29	3.10		
Peer Pressure	13-14	113	8.65	2.42	33.424***	.000
	15-16	125	11.30	2.37		
	17-18	112	10.55	2.90		
Teacher Interaction	13-14	113	5.75	1.98	21.461***	.000
	15-16	125	7.74	2.37		
	17-18	112	6.81	2.61		
Future Uncertainty	13-14	113	6.76	2.81	5.868**	.003
	15-16	125	7.86	1.85		
	17-18	112	7.59	2.95		
School/Leisure Conflict	13-14	113	6.17	2.40	26.769***	.000
	15-16	125	8.02	1.69		
	17-18	112	8.29	2.95		
Financial Pressure	13-14	113	5.06	2.37	7.889***	.000
	15-16	125	5.89	1.73		
	17-18	112	6.15	2.35		
Daily Stress (Total)	13-14	113	54.45	13.95	42.998***	.000
	15-16	125	71.46	13.61		
	17-18	112	69.24	17.78		

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

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

According to Table 9, students with the age between 15 and 16 had the highest mean score, students with the age between 17 and 18 had the second highest mean score and students with the age between 13 and 14 had the lowest mean score in home life subscale, school performance subscale, school attendance subscale, peer pressure subscale, teacher interaction subscale, future

uncertainty subscale and total daily stress. Students with the age between 17 and 18 had the highest mean score, students with the age between 15 and 16 had the second highest mean score, and students with the age between 13 and 14 had the lowest mean score in romantic relationships subscale, school/leisure conflict subscale and financial pressure subscale of daily stress.

Based on the result of ANOVA, the significant differences were found in home life ($F(2,347) = 28.481, p < .001$), in school performance ($F(2,347) = 30.514, p < .001$), in school attendance ($F(2,347) = 26.539, p < .001$), in romantic relationship ($F(2,347) = 29.990, p < .001$), in peer pressure ($F(2,347) = 33.424, p < .001$), in teacher interaction ($F(2,347) = 21.461, p < .001$), in future uncertainty ($F(2,347) = 5.868, p < .01$), in school/leisure conflict ($F(2,347) = 26.769, p < .001$), in financial pressure ($F(2,347) = 7.889, p < .001$), and in total daily stress ($F(2,347) = 42.998, p < .001$).

Comparison of Adolescents’ Daily Stress by Grade

To find out whether there was a significant difference in adolescents’ daily stress by grade, descriptive statistics and one-way analysis of variance (ANOVA) were computed.

Table 10 Descriptive Statistics of Adolescents’ Daily Stress by Grade

Variables	Grade	N	Mean	SD	F	p
Home Life	Grade Nine	116	8.78	3.15	28.565***	.000
	Grade Ten	113	11.96	3.13		
	Grade Eleven	121	11.54	4.05		
School Performance	Grade Nine	116	5.46	2.30	38.499***	.000
	Grade Ten	113	7.94	2.01		
	Grade Eleven	121	6.93	2.14		
School Attendance	Grade Nine	116	2.94	1.49	38.195***	.000
	Grade Ten	113	4.74	1.65		
	Grade Eleven	121	3.71	1.56		
Romantic Relationships	Grade Nine	116	4.88	2.15	30.458***	.000
	Grade Ten	113	6.77	1.95		
	Grade Eleven	121	7.24	3.06		
Peer Pressure	Grade Nine	116	8.69	2.43	35.717***	.000
	Grade Ten	113	11.50	2.23		
	Grade Eleven	121	10.45	2.91		
Teacher Interaction	Grade Nine	116	5.78	2.00	24.403***	.000
	Grade Ten	113	7.91	2.27		
	Grade Eleven	121	6.74	2.62		
Future Uncertainty	Grade Nine	116	6.78	2.81	5.920**	.003

Variables	Grade	N	Mean	SD	F	p
	Grade Ten	113	7.92	1.71		
	Grade Eleven	121	7.56	2.94		
School/Leisure Conflict	Grade Nine	116	6.20	2.39	26.329***	.000
	Grade Ten	113	8.07	1.65		
	Grade Eleven	121	8.24	2.91		
Financial Pressure	Grade Nine	116	5.04	2.36	8.308***	.000
	Grade Ten	113	5.97	1.71		
	Grade Eleven	121	6.09	2.31		
Daily Stress (Total)	Grade Nine	116	54.54	13.86	46.334***	.000
	Grade Ten	113	72.79	13.19		
	Grade Eleven	121	68.50	17.57		

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

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

According to Table 10, Grade Ten students had the highest mean score, Grade Eleven students had the second highest mean score and Grade Nine students had the lowest mean score in home life subscale, school performance subscale, school attendance subscale, peer pressure subscale and teacher interaction subscale, future uncertainty subscale and total daily stress. The mean scores of Grade Eleven students had the highest mean score, that of Grade Ten students had the second highest mean score, and Grade Nine students had the lowest mean score in romantic relationships subscale, school/leisure conflict subscale and financial pressure subscale of daily stress.

Based on the result of ANOVA, the significant differences were found in home life ($F(2,347) = 28.565, p < .001$), in school performance ($F(2,347) = 38.499, p < .001$), in school attendance ($F(2,347) = 38.195, p < .001$), in romantic relationship ($F(2,347) = 30.458, p < .001$), in peer pressure ($F(2,347) = 35.717, p < .001$), in teacher interaction ($F(2,347) = 24.403, p < .001$), in future uncertainty ($F(2,347) = 5.920, p < .01$), in school/leisure conflict ($F(2,347) = 26.329, p < .001$), in financial pressure ($F(2,347) = 8.308, p < .001$), and in total daily stress ($F(2,347) = 46.334, p < .001$).

Descriptive Statistics of Adolescents' Psychological Hardiness

Table 11 Descriptive Statistics of Adolescents' Psychological Hardiness

Variable	No. of Students	Mean	SD
Psychological Hardiness	350	42.91	5.45

According to the descriptive statistics shown in Table 11, the mean value of psychological hardiness was above average (42.91). This result pointed out that adolescents can solve the problems positively, see the world with positive point of view and bounce back when facing with

stress. Teachers and parents need to encourage adolescents to consider stressful situations as learning opportunities and not to give up on them to achieve success.

Table 12 Descriptive Statistics of the Subscales of Adolescents' Psychological Hardiness

Variables	No. of Items	Mean	SD
Commitment	5	14.50	2.77
Control	5	15.82	2.12
Challenge	5	12.59	2.43

The results shown in Table 12 indicated that the mean score of control subscale was the highest (15.82), that of commitment subscale was the second-highest (14.50), and that of challenge subscale was the lowest (12.59) in psychological hardiness.

Comparison of Adolescents' Psychological Hardiness by Gender

To find out whether the differences in adolescents' psychological hardiness with regard to gender was significant or not, independent samples *t*-test was used.

Table 13 Results of Independent Samples *t*-test of Adolescents' Psychological Hardiness by Gender

Variables	Gender	<i>N</i>	Mean	SD	<i>t</i>	<i>P</i>
Commitment	Male	167	14.51	2.96	.039	.969
	Female	183	14.50	2.60		
Control	Male	167	15.66	2.19	-1.337	.182
	Female	183	15.96	2.06		
Challenge	Male	167	13.11	2.13	3.926***	.000
	Female	183	12.11	2.58		
Psychological Hardiness (Total)	Male	167	43.28	5.56	1.214	.226
	Female	183	42.57	5.34		

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

Based on the results shown in Table 13, the mean values of total psychological hardiness for both males and females were nearly the same and not significant. The results indicated that both male and female adolescents live in supportive environment. There were no differences in nurturing ways for them to have hardy characters well. But, there were significant differences in challenge ($t(348) = 3.926, p < .001$). The mean scores of males were higher than those of females in challenge. But, there were no significant differences in commitment and control subscales.

Comparison of Adolescents' Psychological Hardiness by Age

To find out whether there was a significant difference in adolescents' psychological hardiness by age, descriptive statistics and one-way analysis of variance (ANOVA) were computed.

Table 14 Descriptive Statistics of Adolescents' Psychological Hardiness by Age

Variables	Age	N	Mean	SD	F	p
Commitment	13-14	113	16.04	2.03	46.437***	.000
	15-16	125	12.97	2.67		
	17-18	112	14.66	2.63		
Control	13-14	113	16.42	2.38	13.555***	.000
	15-16	125	15.08	1.71		
	17-18	112	16.04	2.03		
Challenge	13-14	113	13.13	2.15	26.854***	.000
	15-16	125	11.41	2.49		
	17-18	112	13.37	2.10		
Psychological Hardiness (Total)	13-14	113	45.59	4.03	53.754***	.000
	15-16	125	39.46	5.47		
	17-18	112	44.06	4.68		

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

According to Table 14, students with the age between 13 and 14 had the highest mean score, students with the age between 17 and 18 had the second highest mean score and students with the age between 15 and 16 had the lowest mean score in commitment subscale, control subscale and total psychological hardiness. And, the mean scores of students with the age between 13 and 14, and students with the age between 17 and 18 are slightly differences and students with the age between 15 and 16 had the lowest mean score in challenge subscale of psychological hardiness.

Based on the result of ANOVA, the significant difference was found in commitment ($F(2,347) = 46.437, p < .001$), in control ($F(2,347) = 13.555, p < .001$), in challenge ($F(2,347) = 26.854, p < .001$) and in total psychological hardiness ($F(2,347) = 53.754, p < .001$).

Comparison of Adolescents' Psychological Hardiness by Grade

To find out whether there was a significant difference in adolescents' psychological hardiness by grade, descriptive statistics and one-way analysis of variance (ANOVA) were computed.

Table 15 Descriptive Statistics of Adolescents' Psychological Hardiness by Grade

Variables	Grade	N	Mean	SD	F	p
Commitment	Grade Nine	116	15.98	2.08	57.210***	.000
	Grade Ten	113	12.63	2.49		
	Grade Eleven	121	14.83	2.63		
Control	Grade Nine	116	16.36	2.36	15.996***	.000

Variables	Grade	N	Mean	SD	F	p
	Grade Ten	113	14.94	1.65		
	Grade Eleven	121	16.12	2.03		
	Grade Nine	116	13.17	2.20		
Challenge	Grade Ten	113	11.22	2.41	31.357***	.000
	Grade Eleven	121	13.31	2.11		
	Grade Nine	116	45.52	4.03		
Psychological Hardiness (Total)	Grade Ten	113	38.79	5.17	68.334***	.000
	Grade Eleven	121	44.26	4.64		
	Grade Nine	116	45.52	4.03		

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

According to Table 15, Grade Nine students had the highest mean score, Grade Eleven students had the second highest mean score and Grade Ten students had the lowest mean score in commitment subscale, control subscale and total psychological hardiness. The mean scores of Grade Nine students and that of Grade Eleven students are slightly different and the mean score of Grade Ten students had the lowest mean score in challenge subscale of psychological hardiness.

Based on the result of ANOVA, the significant difference was found in commitment ($F(2,347) = 57.210, p < .001$), in control ($F(2,347) = 15.996, p < .001$), in challenge ($F(2,347) = 31.357, p < .001$) and in total psychological hardiness ($F(2,347) = 68.334, p < .001$).

The Relationship among Happiness, Daily Stress and Psychological Hardiness

In order to examine the relationship between happiness, daily stress and psychological hardiness, Pearson’s correlation was conducted in Table 17

Table 16 Correlation among Happiness, Daily Stress and Psychological Hardiness

Variable	Happiness	Daily Stress	Psychological Hardiness
Happiness	1	-0.564***	0.566***
Daily Stress		1	-0.534***
Psychological Hardiness			1

Note. ***Correlation is significant at the 0.001 level (2-tailed).

According to the results of the Table 16, the coefficient of correlation value ($r = -0.564$) showed that there was a significant negative correlation between happiness and daily stress at 0.001 level. This meant that if the students are high in happiness, their daily stress will be low and vice versa.

It was found that psychological hardiness was significantly and positively correlated with happiness, but significantly and negatively correlated with daily stress. It could be interpreted that individuals with high psychological hardiness tend to be high in happiness and those with high psychological hardiness tend to possess low daily stress.

Regression Analysis for Prediction of Adolescents’ Happiness from Daily Stress and Psychological Hardiness

In order to evaluate the prediction of happiness from daily stress and psychological hardiness, simultaneous multiple regression was conducted.

Table 17 Regression Analysis for Predictive Powers of Daily Stress and Psychological Hardiness on Happiness

Variable	B	β	t	R	R ²	Adj R ²	F
Constant	61.752		10.778***	0.645	0.416	0.413	123.777***
Predictor Variable							
Daily Stress	-0.244	-0.367	-7.554***				
Psychological Hardiness	0.764	0.370	7.627***				

Note. ***Regression is significant at the 0.001 level (2-tailed).

Multiple regression analysis from Table 17 pointed out that the results were statistically significant $R^2 = 0.416$, $F(2,347) = 123.777$, $p < .001$. The adjusted R^2 was 0.413. This indicated that 41.3% of the variance in happiness was explained by daily stress and psychological hardiness. Daily stress was the significant negative predictor of happiness and psychological hardiness was the positive predictor of happiness ($\beta = -0.367$ and $\beta = 0.370$, $p < .001$). So, it could be interpreted that individuals who experience high daily stress possess low happiness and those with high psychological hardiness experience high happiness.

The model could be explained in the following equation:

$$H = 61.752 - 0.244DS + 0.764PH$$

H = Happiness, DS = Daily Stress, PH = Psychological Hardiness

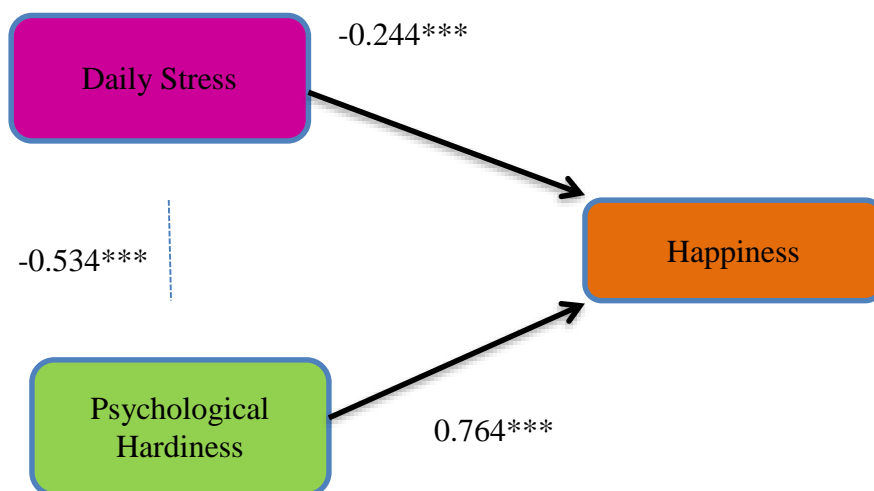


Figure 1 Predictive Power of Daily Stress and Psychological Hardiness on Happiness

Note. The dotted line represents the correlation between two variables.

The straight lines represent the β weights.

Conclusion

It is important for the teachers and parents to realize how they should nurture their children to be emotionally happy people besides being psychologically hardy people. There is an urgent need for adolescents to be able to face the rapid changes and challenges in this world. If they have happiness and psychological hardiness, they can face daily stress and possess successful and happy life.

Limitations of the Study

The first limitation was that findings are based on the self-report data with only one time assessment of adolescents' subjective experiences of happiness, daily stress and psychological hardiness, which may lead to potential self-report biases, such as social desirability. The second limitation was that the design of the research was cross-sectional. In the case of the study of happiness, daily stress and psychological hardiness among adolescents, longitudinal research design was more desirable. Due to the scarcity of time and resources, such design was not used for the study. The final limitation was that the research area is restricted - Shwegyin Township, Bago Region and the participants were drawn from four schools only. Though four schools were already drawn from different regions to enhance validity, the generalizability of the findings remains speculative. Since, only 350 students from Grade Nine, Grade Ten and Grade Eleven were administered, the result may not represent all the adolescents in Myanmar.

Acknowledgements

We would like to acknowledge Dr. Kay Thwe Hlaing (Rector) Yangon University of Education) for her administrative support, inspiration, valuable comments perfect guidance, great support and providing facilities during this study. We would like to offer our respectful appreciation to Dr. May Myat Thu (Pro-rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-rector, Yangon University of Education) for their administrative supports, official permission and encouragement. We would like to offer our sincere and hearty gratitude to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her motherly love, unending patience, critical reviews, excellent judgment, forbearance, continuous encouragement, great support and regular availability to us throughout our study.

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THE RELATIONSHIP BETWEEN EARLY NUMERACY SKILLS AND EXECUTIVE FUNCTIONS OF GRADE 1 STUDENTS*

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Abstract

The main aim of the present study is to assess the relationship between early numeracy skills and executive functions of Grade 1 students. In this study, descriptive survey method and quantitative research design were used. This study was conducted with a sample of 310 (150 males and 160 females) Grade 1 students from Selected Basic Education High Schools in Sagaing Township. The required sample was selected by using random sampling technique. Scale for Early Numeracy Skills of Grade 1 (ENS-G1) students and Behaviour Rating Inventory of Executive Functions (BRIEF) were used as the instruments. As a result of descriptive statistics, the early numeracy skills and executive functions of Grade 1 students were somewhat satisfactory. The result of independent samples *t*-test on the whole scale of the early numeracy skills and executive functions of Grade 1 students by gender revealed that there were no gender differences. ANOVA results showed there were no significant differences in executive functions for all age groups of Grade 1 students, but there were significant differences in early numeracy skills according to age at 0.05 level. Moreover, the results of independent samples *t*-test revealed that there were no significant differences for early numeracy skills of Grade 1 students by selected schools, but there were significant differences for executive functions of Grade 1 students by selected schools at 0.01 level. And then, there were significant differences by father's education and mother's education in both early numeracy skills and executive functions of Grade 1 students and it also revealed that the mean scores of graduated father's and graduated mother's children were significantly higher than non-graduated father's and non-graduated mother's children in executive functions. Finally, the results of Pearson correlation also showed that there was a significant positive relationship between early numeracy skills and executive functions of Grade 1 students.

Keywords: Early Numeracy Skills, Executive Functions.

Introduction

Children are the future of every nation, and the progress of any nation depends upon the education that they acquire today—the same kind of education they will apply on themselves or their nation's future. So, it is necessary for any nation to take special care of children by providing them with an excellent education. No doubt, education is a power that influences individuals' lives. Education is a giant industry that equips citizens for the future with various survival skills and 21st century skills to be able to live in harmony in society.

According to Khin Zaw (1974), the world today is in the greatest period of change in history, but not many of its educational programs at any level are relating their objectives and methodologies to the changing needs of the world. Two very general factors, "information explosion" and "population explosion," are the real causes of most if not all recent changes in education. These factors simply mean "More people to Teach" and "More to Learn" (Footlick, 1966, cited in Khin Zaw, 1974). Moreover, today is the age of science and technology.

Therefore, the role of mathematical skills, that are the basis of science and technology, is so important. Even in the field of liberal arts, it is important to master early numeracy skills because of the use of statistical methods in research for higher education. So, it is crucial to cultivate these early numeracy skills since early childhood for the development of every country.

* Special Award (2023)

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Early mathematical and numeracy skills include the general understanding of numbers and basic mathematical concepts (Harris & Petersen, 2019; Toll & Van Luit, 2014). Early mathematical and numeracy skills are the building blocks of all future mathematical classes. Early numeracy skills are also skills that are already being used by most young children daily through play and everyday interactions. These are skills that begin in early childhood and are the foundation for the rest of elementary mathematics and into upper-level mathematical classes as well. These numeracy skills must be introduced at an early age so students are able to continue to build higher level mathematical classes, such as algebra and geometry, depend on a strong foundation of number sense and number skills (Jordan et al., 2009).

Without these skills, students will have to continue to struggle with higher mathematical concepts. Students need to learn how to solve problems, one of the basic early mathematical skills, for all areas of academics and life outside of school. Early numeracy skills also coincide with language and critical thinking development (Toll & Van Luit, 2014; Vilorio, 2014). When children first enter school, they lack language and critical thinking skills. Therefore, the main responsibility of schools is to teach these skills to children.

Executive functioning skills are necessary to persevere in mathematical activities and academic tasks. Executive functions are the cognitive abilities that control and regulate most of what people do in day-to-day life (Diamond, 2013). And then, executive functions are higher level abilities such as planning, goal setting, and impulse controlling, shifting, and updating (Kroesbergen et al., 2009). Kroesbergen et al.'s (2009) research found that executive functions are crucial for counting skills and are more closely correlated to early mathematical success. Students who have stronger executive functions perform better in early mathematical skills than students with a higher IQ.

Executive functions could be used as an indicator for identifying at-risk students for mathematics (Kroesbergen et al., 2009). By teaching students' executive functions alongside early numeracy skills, students will be more prepared to learn advanced mathematical skills throughout their school career. Students not only need a foundation of early numeracy skills, but they also need to build a foundation of executive functions to have a successful academic future (Guhl, 2019).

Therefore, the focus of this study is to explore the relationship between executive functions and early numeracy skills of Grade 1 students.

Main Aim

The main aim of the present study is to assess the relationship between early numeracy skills and executive functions of Grade 1 students.

Specific Objectives

The specific objectives are as follows:

- to study early numeracy skills and executive functions of Grade 1 students
- to compare early numeracy skills and executive functions of Grade 1 students by gender, age, selected schools, father's education, and mother's education
- to find out the relationship between early numeracy skills and executive functions of Grade 1 students

Definitions of Key Terms

- Early numeracy skills** : Early numeracy skills refers to a set of skills at the early stages of the development of number sense, including understanding the meaning of numbers, and the different relationships among numbers (Clarke & Shinn, 2004).
- Early numeracy skills** : Early numeracy skills are the general understanding of numbers and basic mathematical concepts (Harris & Petersen, 2019; Toll & Van Luit, 2014).
- Executive Functions** : Executive functions are the cognitive abilities that control and regulate most of what we do in day-to-day life (Diamond, 2013).

Review of Related Literature

Early Numeracy Skills

Piaget (1953, cited in Alder, 1963) found there were levels of development at which these processes of adaptation could occur and mature during his research. These levels are known as his four stages of cognitive development. The first is the sensorimotor stage, which occurs between birth and 2 years (Alder, 1963). During this stage, children develop object permanence, which is the concept of an object existing even out of sight. The next stage is the preoperational stage, occurring between 2 and 7 years of age (Alder, 1963). This stage is characterized by the use of language for symbolic representations. According to Piaget, children in this stage have a vague sense of logic, and their mental operations only move in one direction (Copeland, 1974). The next stage is the concrete operational stage, which occurs between the ages of 7 and 12 years (Copeland, 1974). This stage is defined by logical thought based on concrete experiences, hence the name of the concrete operational stage. This stage also sees the development of two-directional thinking, which allows for the concept of conservation to develop. The final stage is the formal operational stage, which develops around 12 years of age and represents the highest level of logical thinking (Copeland, 1974). Hypothetical reasoning and symbolic thought highlight this stage. The ages of all of these stages are flexible, but nevertheless provide valuable insight for educators into the cognitive operations of children.

Relating these theories to first grade mathematics, Piaget's stages of development prove most helpful for educators. For first graders, from the age span of 6 to 7, it is clear that this stage involves a two-stage transition; the preoperational stage and the concrete operational stage. Understanding both stages and the transition between them is critical for developing strong mathematical understanding.

Texas Essential Knowledge and Skills (TEKS) of early numeracy for Grade 1 students are based on Piaget's stages of development. The first TEKS objective is "(1) Number, operation, and quantitative reasoning, where the student needs to describe and compare quantities by using whole numbers" (TAC, 2006). The second TEKS objective to investigate is "(2) Number, operation, and quantitative reasoning where the student needs to recognize and solve problems in addition and subtraction situations" (TAC, 2006). The last TEKS objective to look at is "(3) Measurement, where the student needs to compare the attributes of length, area, weight/mass, capacity, and temperature directly, and the student needs to select and use non-standard units to describe length" (TAC, 2006).

In the late 1970s, Stan Deno and his research team began to identify alternative assessment methods to address the limitations of using individually administered, norm-referenced, and broad achievement tests with students with learning disabilities to monitor educational goals. The

approach that was developed was curriculum-based measurement (CBM), which refers to sets of standardized, short-duration, authentic assessments used to gauge a student's growth in academic skills over time (Deno, 1985, cited in Feldmann, 2012).

Curriculum-based measurement is intended to provide data to meaningfully guide instruction, which in turn leads to increased learning (Howell & Nolet, 1999). CBM will likely continue to fill a practical need based on its key features of feasibility, repeatability, sensitivity to change, and utility in developing measurable performance goals.

Using curriculum-based measurement to measure children's early numeracy skills based on the above key features, children's skills can be effectively measured. Therefore, if the early numeracy skills of Grade 1 students in Myanmar are to be measured, they should be measured based on the curriculum and other previous early numeracy skills tests. In this study, scale for Early Numeracy Skills of Grade 1 (ENS-G1) students based on the curriculum and other previous early numeracy skills tests was used as the instrument.

Executive Functions (EFs)

The study of executive functions and the role of the frontal lobe in human behavior is extensive and dates back as early as the mid-eighteenth century, when Harlow (1868) first described a patient's changing behavior as a result of a brain injury. His descriptions represent a metaphor for the role of the frontal lobe. He describes the frontal lobe as serving as an executive, responsible for making decisions, forming goals, planning, organizing, devising strategies for attaining goals, and changing and devising new strategies when initial plans fail.

Although the construct of EFs was first introduced by Luria in 1966, theoretical consensus about the construct has been slow to develop. The complex nature of EFs, along with a historical lack of consensus regarding their definition, leads to wide variation in how EFs are studied and measured. Nevertheless, many of the current theories and conceptualizations share common roots based on Luria's (1966) model of EFs. Based on the roots of Luria's model, there have been two broad approaches to the development of executive function frameworks.

According to Luria (1966), the brain consists of three functional units, and it is the third unit in which EF mechanisms operate. The first functional unit is located mainly in the brain stem and is responsible for regulating and maintaining arousal of the cortex. The second functional unit is responsible for encoding, processing, and storing information and encompasses the temporal, parietal, and occipital lobes. The third functional unit is located in the anterior region of the brain (frontal lobes), and its functions include programming, regulating, and directing behavior.

Within the third unit, the prefrontal cortex is considered by Luria to be a superstructure that regulates or controls mental activity and behavior. Many current theories that describe how information is processed and used to direct behavior to achieve a goal include some variation of these cognitive mechanisms.

Methodology

Sampling

The participants were 310 Grade 1 students from Selected Basic Education High Schools in Sagaing Township. Selected participants consist of **150 males** and **160 females**. The profile of participants is shown in Table 1.

Table 1 Profile of Participants in the Study

No	Profile of Participants			Total
1	Gender	Male	150	310
		Female	160	
2	Age	6 years old	75	310
		7 years old	131	
		8 years old	71	
		9 years old	33	
3	Grade	Grade 1		310

Research Method

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

Research Instrumentation

Firstly, the instrument to measure Early Numeracy Skills of Grade 1 students was developed by researcher. This process was undertaken by following the guidelines of existing standardized tests, such as AIMSWEB Test of Early Numeracy (Grade 1) developed by **Pearson (2005)** and Grade 1 textbook for mathematics and teachers’ guide. In this study, the researcher adapted the Early Numeracy Skills components of AIMSWEB Test, Grade 1 text manual and teacher guide book, and the Texas Essential Knowledge and Skills (TEKS) of early numeracy for Grade 1 students based on Piaget’s stages of development. Scale for Early Numeracy Skills consists of 7 sub-scales and 70 items. The seven scales are Oral Counting (OC), Number Identification (NI), Number Discrimination (ND), Missing Number (MN), Order Plan (OP), Measurement (M), and Computation (C). The purpose of the scale is to examine the early numeracy skills of Grade 1 students.

After preparing the instruments for Early Numeracy Skills, expert review was conducted for face validity and content validity by 15 experts who have sound knowledge and a close relationship with this study area from the fields of Educational Psychology and Early Childhood Education. According to the value advices of the experts, the irrelevant items were revised. In order to determine the reliability and validity of the instrument, pilot testing was conducted with Grade 1 students from Basic Education Schools. The pilot study was done with the sample of 100 students from No. (1) Basic Education High School (Branch) Katha Township. According to the pilot study, the internal consistency of the scale was **0.85**.

Secondly, the questionnaire for executive functions of Grade 1 students was mainly constructed from Behavior Rating Inventory of Executive Functions developed by Gioia et al., (2000). The BRIEF (Gioia et al., 2000) was an 86-item parent report questionnaire designed to assess executive functioning in children ages 5–18. Parents rate if their child’s behavior is “never,” “sometimes,” or “often” a problem, with higher ratings indicative of greater perceived impairment. The BRIEF was composed of eight sub-scales (Initiate, Working Memory, Plan/Organize, Organization of Materials, Monitor, Inhibit, Shift, and Emotional Control). The BRIEF was normed on 1,419 control children and 852 children from referred clinical groups. Adequate test-retest reliability, internal consistency, content and construct validity, and convergent and discriminate validity have been demonstrated (Pizzitola, 2002, cited in Gioia et al., 2000). Specifically, test-retest reliability statistics range from .79 to .88 during a two-week period, and internal consistency was reported as ranging from .80 to .98 (Gioia et al., 2000).

The instrument used in the recent research was created by modifying the items in the above measure in accordance with Myanmar culture, it was a five-point Likert scale (Strongly Disagree = 1, Disagree = 2, Undecided = 3, Agree = 4, Strongly Agree = 5) and included a total of 55 items (54 (negative items) + 1 (positive items)) in the instrument. The BRIEF was composed of 8 sub-scales (Initiate, Working Memory, Plan/Organize, Organization of Materials, Monitor, Inhibit, Shift, and Emotional Control). According to the pilot study, the internal consistency of the questionnaire was **0.91**.

Quantitative Data Collection Procedure

After getting ethical approval from the Ministry of Education, the consent forms were sent to the headmaster and parents of the respondents. And then, the numeracy skills and executive functions of Grade 1 students were investigated, and the data were collected. Moreover, the other influencing factors on the students' numeracy skills and executive functions, such as age, gender, etc., were also explored.

Among the two instruments, the executive functions questionnaire collected information from parents of Grade 1 students by using the rating scale method. The scale for early numeracy skills of Grade 1 students was collected by an individual interview between each child and the researcher because children of this age have developed such good listening and speaking skills that they listen carefully and answer the questions about themselves, rather than the reading and writing skills they should have to answer self-report questionnaires. At the elementary level, listening and speaking skills are more important and favored than reading and writing skills. (Basic Competencies of Myanmar Language Primary Level, 2008, cited in Yu Mon Thaw, 2017).

Data Analysis and Findings

After collecting the required data, the early numeracy skills and executive functions of Grade 1 students were analyzed.

Comparison for Early Numeracy Skills and Executive Functions of Grade 1 Students

By using the descriptive procedure with the obtained data, early numeracy skills and executive functions of Grade 1 students were estimated.

Table 2 Descriptive Statistics for Early Numeracy Skills and Executive Functions of Grade 1 Students

Variables	<i>N</i>	Minimum	Maximum	Mean	Mean (%)	<i>SD</i>
Early Numeracy Skills	310	31	70	66.63	95.19%	3.684
Executive Functions	310	73	270	198.73	73.60%	39.696

Descriptive analyses revealed that the mean percentage and standard deviations of early numeracy skills and executive functions for the whole sample were 95.19% (*SD*=3.684) and 73.60% (*SD*=39.696) respectively (see Table 2). These findings showed that early numeracy skills and executive functions of Grade 1 students were somewhat satisfactory.

Table 3 Mean Percentage and Standard Deviation for Sub-scales of Early Numeracy Skills and Executive Functions of Grade 1 Students

Variables	Sub-scales	No. of Items	Mean	Mean (%)	SD
Early Numeracy Skills	Oral Counting	10	9.93	99.3%	.517
	Number Identification	10	9.94	99.4%	.422
	Number Discrimination	10	9.88	98.8%	.417
	Missing Number	10	9.90	99.0%	.796
	Order Plan	10	8.65	86.5%	1.474
	Measurement	10	8.63	86.3%	1.433
	Computation	10	9.71	97.1%	.597
Executive Functions	Inhibit	5	19.40	77.6%	3.944
	Shift	6	21.34	71.13%	5.073
	Emotional Control	9	31.81	70.69%	6.283
	Initiate	7	23.56	67.31%	6.345
	Working Memory	8	30.43	76.08%	6.462
	Plan/Organize	7	25.31	72.31%	5.166
	Monitor	6	21.06	70.2%	5.643
	Organization of Materials	7	25.81	73.74%	5.761

According to the results of Table 3, it can be clearly seen that the mean percentage of number identification was the highest and measurement was the lowest in the early numeracy skills of Grade 1 students. Therefore, it can be said that Grade 1 students can perform the number identification sub-scale better than other sub-scales of early numeracy skills. And then, the mean percentage of inhibit was the highest and initiate was the lowest in executive functions. So, Grade 1 students can perform the working memory sub-scale better than other sub-scales of executive functions, according to the results.

Table 4 Comparison for Early Numeracy Skills and Executive Functions of Grade 1 Students by Gender

Variables	Gender	N	Mean	SD	t	p
Early Numeracy Skills	Male	150	66.95	3.827	1.489	.138
	Female	160	66.33	3.530		
Executive Functions	Male	150	200.89	38.060	.931	.353
	Female	160	196.69	41.187		

The result of independent samples *t*-test on the whole scale of the early numeracy skills of Grade 1 students by gender revealed that there was no gender difference (see Table 4). This finding is consistent with previous early numeracy skills research conducted by Howell and Kemp (2009). They found that there was no difference between females and males on most of the components of early numeracy skills. Moreover, according to SEA-PLM 2019 results in mathematical literacy of Grade 5 students, mean differences were not statistically significant in Myanmar by gender (UNICEF & SEAMEO, 2020).

And then, the result of *t*-test on the whole scale of executive functions of Grade 1 students by gender revealed that there was also no gender difference too (see Table 4). The finding is consistent with the results of Ashley Darcy (2014).

Table 5 Comparison for Sub-scales of Early Numeracy Skills of Grade 1 Students by Gender

Sub-scales	Gender	N	Mean	SD	t	p
Oral Counting	Male	150	9.95	.398	.581	.561
	Female	160	9.91	.608		
Number Identification	Male	150	9.94	.508	-.078	.938
	Female	160	9.94	.322		
Number Discrimination	Male	150	9.88	.400	-.158	.875
	Female	160	9.89	.434		
Missing Number	Male	150	9.88	.996	-.428	.669
	Female	160	9.92	.549		
Order Plan	Male	150	8.73	1.423	.943	.347
	Female	160	8.57	1.520		
Measurement	Male	150	8.82	1.216	2.327*	.021
	Female	160	8.44	1.593		
Computation	Male	150	9.76	.598	1.531	.127
	Female	160	9.66	.594		

Note * The mean difference is significant at 0.05 level.

Based on the results shown in Table 5, there was statistically significant differences in measurement sub-scale only whereas the others sub-scales were not significantly different by gender (see Table 5). According to the results, it was found that male students developed more on the measurement sub-scale than female students.

Table 6 Comparison for Sub-scales of Executive Functions of Grade 1 Students by Gender

Sub-scales	Gender	N	Mean	SD	t	p
Inhibit	Male	150	19.59	3.933	.806	.421
	Female	160	19.23	3.959		
Shift	Male	150	21.72	4.940	1.294	.197
	Female	160	20.98	5.183		
Emotional Control	Male	150	32.16	5.645	.942	.347
	Female	160	31.49	6.829		
Initiate	Male	150	24.18	6.096	1.667	.097
	Female	160	22.98	6.536		
Working Memory	Male	150	30.81	6.236	1.014	.311
	Female	160	30.07	6.666		
Plan/Organize	Male	150	25.51	5.074	.639	.523
	Female	160	25.13	5.261		
Monitor	Male	150	21.23	5.535	.489	.625
	Female	160	20.91	5.756		
Organization of Materials	Male	150	25.70	5.721	-.324	.746
	Female	160	25.91	5.814		

According to the results of Table 6, there were no significant differences in all the sub-scales of executive functions of Grade 1 students. The finding is consistent with the results of Ashley Darcy (2014). Burrage et al. (2008) found that the development of executive functions was based on experience, not on age or gender.

Table 7 Comparison for Early Numeracy Skills and Executive Functions of Grade 1 Students by Age Group

Variables	Age	N	Mean	SD	F	p
Early Numeracy Skills	6 years	75	65.81	3.794	3.519*	.015
	7 years	131	66.40	4.366		
	8 years	71	67.62	1.967		
	9 years	33	67.27	2.742		
Executive Functions	6 years	75	194.12	42.717	1.142	.332
	7 years	131	199.61	38.781		
	8 years	71	197.15	42.729		
	9 years	33	209.06	26.918		

Note * The mean difference is significant at 0.05 level.

Although there were no significant differences in executive functions for all age groups of Grade 1 students, there were significant differences in early numeracy skills according to age at 0.05 level. To obtain more detailed information of which age had significant differences, Post Hoc Test was executed by Games-Howell multiple comparison procedure (see Table 8).

Table 8 The Results of Multiple Comparison for Early Numeracy Skills of Grade 1 Students by Age Group

Variable	(I)Age	(J)Age	Mean Difference (I-J)	<i>p</i>
Early Numeracy Skills	8 years	6 years	1.806**	0.002
		7 years	1.215*	0.036

Note * The mean difference is significant at 0.05 level.

** The mean difference is significant at 0.01 level.

According to Table 8, it can be said that students at the age of 8 years were more willingness to learn and more practice than other age group. According to the result of multiple comparison analysis, early numeracy skills of Grade 1 students was dependent upon their age, but Grade 1 students' executive functions did not depend on their age according to the results of this study.

Table 9 Comparison of Early Numeracy Skills and Executive Functions by Selected School

Variables	School	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>p</i>
Early Numeracy Skills	School 1	170	66.62	4.404	-.077	.939
	School 2	140	66.65	2.567		
Executive Functions	School 1	170	204.42	37.81	2.813**	0.005
	School 2	140	191.81	40.953		

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

According to Table 9, although the results of independent samples *t*-test revealed that there were no significant differences for early numeracy skills of Grade 1 students among selected schools, there were significant differences for executive functions of Grade 1 students among selected schools at 0.01 level. It can be concluded that the mean scores of students from school 1 were higher than the mean scores of students from school 2 in executive functions.

Table 10 Comparison of Early Numeracy Skills and Executive Functions by Father's Education

Variables	Father's Education	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>p</i>
Early Numeracy Skills	Graduate	113	68.14	2.314	5.738***	.000
	Non-Graduate	197	65.77	4.034		
Executive Functions	Graduate	113	218.72	31.490	7.255***	.000
	Non-Graduate	197	187.26	39.435		

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

According to the results of independent samples *t*-test, there was significant differences by father’s education in early numeracy skills of Grade 1 students and it revealed that the mean scores of graduated father’s children were significantly higher than non-graduated father’s children in early numeracy skills. So, it can be said that father’s education was related to early numeracy skills of Grade 1 students. This finding was consistent with the previous research conducted by Yu Mon Thaw (2017). Therefore, father’s education can be considered as a factor that effect on early numeracy skills of Grade 1 students (See Table 10).

And then, there was significant differences by father’s education in executive functions of Grade 1 students and it also revealed that the mean scores of graduated father’s children were significantly higher than non-graduated father’s children in executive functions. So, it can be said that father’s education was related to executive functions of Grade 1 Students.

Table 11 Comparison of Early Numeracy Skills and Executive Functions by Mother’s Education

Variables	Mother’s Education	N	Mean	SD	t	p
Early Numeracy Skills	Graduate	137	67.89	2.427	5.584***	.000
	Non-Graduate	172	65.64	4.191		
Executive Functions	Graduate	137	217.25	31.111	8.005***	.000
	Non-Graduate	172	184.05	39.814		

According to the results of independent samples *t*-test, there were significant differences by mother’s education in early numeracy skills of Grade 1 students, and it revealed that the mean scores of graduated mother’s children were significantly higher than those of non-graduated mother’s children in early numeracy skills. So, it can be said that mother’s education was related to early numeracy skills of Grade 1 students. This finding was consistent with the previous research conducted by Yu Mon Thaw (2017). She found that father’s education and mother's education were related to students’ literacy and numeracy (Yu Mon Thaw, 2017). Therefore, mother’s education can be considered as a factor that affects the early numeracy skills of Grade 1 students (see Table 11).

And then, there were significant differences by mother’s education in executive functions of Grade 1 students, and it also revealed that the mean scores of graduated mother’s children were significantly higher than those of non-graduated mother’s children in executive functions. So, it can be said that mother’s education was related to executive functions of Grade 1 students.

Table 12 Correlation between Early Numeracy Skills and Executive Functions of Grade 1 Students

Variables	Early Numeracy Skills	Executive Functions
Early Numeracy Skills	-	.850*** .000 310
	.850*** .000 310	-

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

The table indicated that there was a significant positive relationship between early numeracy skills and executive functions of Grade 1 students at 0.001 level. So, it could be said that Grade 1 students who have higher executive functions had higher early numeracy skills. Moreover, the two variables were highly correlated with each other.

Conclusion, Discussion and Recommendations

Conclusion and Discussion

This study was conducted to find out the relationship between early numeracy skills and executive functions of Grade 1 students. A total of 310 Grade 1 students: 48.4% (150) males and 51.6% (160) females from two basic education schools in Sagaing Township were selected as participants for this study. As a result of descriptive statistics, the early numeracy skills and executive functions of Grade 1 students were somewhat satisfactory. The result of independent samples *t*-test on the whole scale of the early numeracy skills of Grade 1 students by gender revealed that there was no gender difference. This finding is consistent with previous early numeracy skills research conducted by Howell and Kemp (2009). They found that there was no difference between female and male in most of the components of early numeracy skills. Moreover, according to SEA-PLM 2019 results in mathematical literacy of Grade 5 students, mean differences were not statistically significant in Myanmar by gender (UNICEF & SEAMEO, 2020). And then, the result of *t*-test on the whole scale of executive functions of Grade 1 students by gender revealed that there was also no gender difference too. The finding is consistent with the results of Ashley Darcy (2014). According to the results of independent samples *t*-test on all sub-scales of early numeracy skills, there was statistically significant difference in measurement sub-scale only whereas the others sub-scales were not significantly different by gender. According to the results, it was found that male students developed more on the measurement sub-scale than female students.

And then, the result of independent samples *t*-test on the whole scale of the executive functions of Grade 1 students by gender revealed that there was no gender difference too. To know the results of all sub-scales of executive functions, independent samples *t*-test was computed. According to the results, there were no significant differences in all sub-scales of executive functions of Grade 1 students. The finding is consistent with the results of Ashley Darcy (2014). Ashley Darcy (2014) found that there was no significant difference in executive functions of young children by gender. Burrage et al. (2008) also found that the development of executive functions was based on experience, not on age or gender.

According to ANOVA result, although there were no significant differences in executive functions for all age groups of Grade 1 students, there were significant differences in early numeracy skills according to age at 0.05 level. To obtain more detailed information of which age groups had significant differences, Post Hoc Test was executed by Games-Howell multiple comparison procedure. According to the result, it can be said that students at the age of 8 years were more willingness to learn and practice than other age groups. According to the result of multiple comparison analysis, early numeracy skills of Grade 1 students were dependent upon their age. But Grade 1 students' executive functions did not depend on their age, according to this study.

To investigate the mean differences of the early numeracy skills of Grade 1 students by selected schools, independent samples *t*-test was conducted and there were no significant differences for early numeracy skills of Grade 1 students by selected schools, but there were significant differences for executive functions of Grade 1 students by selected schools at 0.01 level. It can be concluded that the mean scores of students from school 1 were higher than the mean scores of students from school 2.

And then, there were significant differences by father's education and mother's education in both early numeracy skills and executive functions of Grade 1 students and it also revealed that the mean scores of graduated father's and graduated mother's children were significantly higher than non-graduated father's and non-graduated mother's children in executive functions. So, it can be said that father's education and mother's education were related to both early numeracy skills and executive functions of Grade 1 students.

Moreover, according to the Pearson's Correlation, there was a significant positive relationship between early numeracy skills and executive functions of Grade 1 students at 0.001 level. So, it could be said that Grade 1 students who have higher executive functions had higher early numeracy skills. Therefore, the two variables were highly correlated with each other.

Therefore, parents should consider the fact that their children's early numeracy skills and executive functions should be supported by day-by-day experiences at home. Parents should spend more time with their children on early numeracy skills and executive functions related activities. Primary teachers should arouse children's interest in early numeracy skills and executive functions concept. Most important of all, for primary teachers and all the personnel in the field of early education, more attention should be given to implement teaching learning activities that are carefully planned to achieve learning objectives of developing children's early numeracy skills and executive functions development.

Recommendations for Future Research

To explore the early numeracy skills of Grade 1 students, the future researcher should consider variables not only executive functions but also parental support, gender and age etc. More research should be done on the Grade 1 students' early numeracy skills and executive functions with a study of longitudinal design to clarify the Grade appropriate differences in early numeracy skills and executive functions, and how their Grade level affects their level of early numeracy skills and executive functions. Further studies should be investigated for every Grade level to have comparison between different Grades. To be concluded, it is hoped that the findings presented in this study will provide some insights in the influence of early numeracy skills and executive functions in the future.

Acknowledgements

We would like to express our profound thanks to those who have granted the help accomplish of this paper. We would like to offer respectful gratitude to Headmistresses Daw Yi Yi Myint, No. (1) Basic Education Primary School in Sagaing Township and Daw Swe Zin Oo, Basic Education Practising High School (Shwe Min Wun) in Sagaing Township for their official permission to do this research and for their encouragement. Moreover, we wish to express our deep gratitude to all teacher educators, parents, and participants of this study.

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AN INVESTIGATION INTO SELF-CONFIDENCE AND ADJUSTMENT OF STAFF MEMBERS

Aye Aye Kyi Thant¹

Abstract

The main aim of this study is to investigate self-confidence and adjustment of staff members from University for the Development of the National Races of the Union (UDNR), Sagaing in 2021-2022 academic year. Survey research design and quantitative method were used in this study. The sample comprised 250 (Male=71 and female=179) staff members from UDNR. For research instruments, the staff members' self-confidence was measured by using Self-Confidence Scale developed by Kelsey Evelyn Perkins (2018) and their adjustment was measured by using The Adjustment Inventory developed by Huch M. Bell (1934). In order to investigate the differences in self-confidence and adjustment by gender, age, years of work experience, descriptive statistics, independent samples *t*-test, one-way analysis of variance (ANOVA) and Pearson's Product-Moment Correlation were used. The results of this study showed that there were statistically significant differences in internal self-confidence subscale, social and emotional adjustment subscales and overall adjustment of staff members by gender. Besides, there was statistically significant difference in emotional adjustment subscale by age. Pearson's Product-Moment correlation revealed that self-confidence was significantly and positively correlated with adjustment ($r = .307, p < 0.001$).

Keyword: Staff member, Self-Confidence, Adjustment.

Introduction

Significance of the Study

Self-confidence can play an important role not only in school life but also personal and social lives as well, and therefore, at every stage of life towards success. Rubio (2007) stated that cognition is the center of self-confidence, that success or failure is felt cognitively (as cited in Tunçel, 2015). Self-confident teachers feel comfortable in classroom, and can convey their messages to students without disturbing them. Their calm and confident nature and actions can promote students' self-confidence (Krashen, 1982; MacIntyre & Clement 1977; Oner, 2008, cited in Tunçel, 2015). This brings people to the conclusion that self-confidence is a sense (cognitive) just like anxiety and fear in humans. Many different factors may lead to anxiety and fear just like many different factors may increase or decrease self-confidence.

One of the most important psychological activities of human being is adjustment because life is a process of adjustment. According to Gill (2014), adjustment is a process which starts from birth and continues till death (as cited in Akande & Ikediashi, 2018). Adjustment could mean reactions to the demands and pressures of social environment imposed upon the individual. The demands may be external (social and educational) or internal (emotional) to which the individual has to react. A socially well adjustment person is not only efficient and happy in his environment, but also must have a sense of social feelings, he must be cooperative and sympathetic (Adler 1930, as cited in Kaur, 2015). A person has social efficiency if he follows the beliefs, values and the norms of the society. Adjustment is a major concern in all development stages, but is of great relevance during adolescent (Kaur, 2015). Dishion (1990), Feschbach (1987) and Green (1974) explored that good adjustments make the adolescents proud and self-satisfied, motivate them for

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future success, encourage them to be an independent thinking person and build their confidence and improve the mental health (as cited in Kaur, 2015).

In the modern society, human life is becoming very complex and conflicting day by day. Only when a person is well adjusted, he can survive without psychological stress which may result in maladjustment. Hence, adjustment is very important in one's life. Emotional adjustment is essential for creating a sound personality. It is the roof of personality adjustment and physical, intellectual, mental and esthetical adjustments are possible when emotional adjustment is made (Singh, Edbor & Dhingra, 2017).

Purpose of the Study

The main purpose of this study is to investigate into self-confidence and adjustment of staff members from University for the Development of the National Races of the Union (UDNR).

The following specific objectives of the study are established to know the impact of gender, age and work experience on staff members' self-confidence and adjustment.

- ✓ To examine the differences in self-confidence of staff members by gender, age and work experience,
- ✓ To investigate the differences in adjustment of staff members by gender, age and work experience, and
- ✓ To find out the relationship between self-confidence and adjustment of staff members.

Scope of the Study

Participants of this study were selected from staff members in University for the Development of the National Races of the Union during 2021-2022 Academic Year and this study is limited to investigate self-confidence and adjustment of staff members.

Definition of Key Terms

Self-confidence. Self-confidence is a belief that one is capable of successfully meeting the demands of a task (VandenBos, 2015).

Adjustment. Adjustment is the process by which a living organism maintains a balance between its needs and the circumstances that influence the satisfaction of these needs (L. F. Shaffer, 1961, cited in Sekar & Lawrence, 2016).

Operational definition of staff members. All staff members those who have been working in the University for the Development of the National Races of the Union are considered here as staff members.

Review of Related Literature

Nature of Self-Confidence

The concept of **self-confidence** is commonly used as self-assurance in one's personal judgment, ability, power, etc. One increases self-confidence from experiences of having mastered particular activities. It is a positive belief that in the future one can generally accomplish what one wishes to do. Self-confidence is not the same as self-esteem, which is an evaluation of one's own worth, whereas self-confidence is more specifically trust in one's ability to achieve some goal, which one meta-analysis suggested is similar to generalization of self-efficacy (Geetha, 2018).

Self-confidence definitions generally involve belief in one's own abilities to perform (Bandura, 1977; Chemers et al., 2000; Clark et al., 2008, as cited in Greenacre, Tung, & Chapman, 2014). As people learn and undertake decisions they gain specific feedback about their abilities and thus develop the beliefs in those abilities, with those beliefs described as self-confidence (Park et al., 2007, cited in Greenacre et al., 2014). The Oxford Dictionary defines self-confidence as “a feeling of trust in one's abilities, qualities, and judgment” (cited in Perkins, 2018). Self-confidence refers to individuals' beliefs that they can accomplish a given task or achieve a desired objective (Stankov et al., 2012, as cited in Ballane, 2019).

Self-confidence is one of the most important factors studied by psychological researchers to express ‘a powerful mediating process in multiethnic settings that affects a person's motivation to learn and use the language of the other speech community’. A straightforward definition of self-confidence is the amount of reliance one has about himself, that is, one's knowledge and one's abilities. Self-confidence seems to be among the first steps to progress, development, achievement and success. Additionally, self-confidence refers to the belief that a person has the ability to produce results, achieve goals or complete tasks proficiently. Accordingly, it is also a building block for success throughout one's career and a key- competency in the self-awareness cluster (Fitri, 2015). Furthermore, Norman and Hyland suggest that there are three elements to confidence:

- (1) Cognitive, the person's knowledge of their abilities;
- (2) Performance, the person's ability to do something;
- (3) Emotional, the learner's comfortable feeling about the former two aspects (as cited in Fitri, 2015).

Models of Self-Confidence

Perkins (2018) described the following models.

1. Integrated Model of Organizational Trust
2. The Model of Self-Trust and
3. The Integrated Model of Self-Confidence.

Self-Confidence Scale based on the last two models was used in this study. The last two models are as follows:

The Model of Self-Trust. Meyer et al. (1995) model may be used to explore the concept of self-trust, in other words, internally-perceived self-confidence, which will be called Internal Self-Confidence from this point forward (cited in Perkins, 2018). Perkins (2018) stated that, in this case, self-trust (i.e., Internal Self-Confidence) can be defined as the willingness of an individual to be vulnerable towards themselves – to take an action that benefits themselves despite the risk in doing so. Internal Self-Confidence, like trust, is an evaluative attitude with affective, behavioral, and cognitive components that targets the self. It is a willingness to take a risk that depends both people's propensity to trust, as well as how trustworthy they perceive themselves to be (in terms of ability, benevolence, and integrity).

In summary, according to the Model of Self-Trust, Internal Self-Confidence, as a broad, overarching construct, is influenced by three indicator factors: general self-efficacy, self-esteem, and self-compassion. The effect of each of these indicators is also influenced by one's level of optimism—or the belief or expectation of positive outcomes. Each of these factors is necessary for understanding and achieving Internal Self-Confidence, which is a prerequisite for realizing the

behavioral manifestation of self-confidence, which includes taking action and taking risks with themselves (Perkins, 2018).

The Integrated Model of Self-Confidence. While one's attitudes towards oneself in terms of abilities, qualities, and compassion are undoubtedly important in such outcomes as career success, progression, and promotions, internal perceptions of self-confidence are only part of the story. Subtle signals and behaviors are often thought to be indicative of an individual's level of self-confidence — and therefore their competence (Anderson et al., 2012; Locke & Anderson, 2015, as cited in Perkins, 2018). The literature discusses many confidence cues, some of which include: enduring and direct eye contact, strong and steady tone of voice, clear and articulate speech, lack of anxiety or nervousness, good posture and poise, assertiveness in speech and mannerisms, and expression of opinions, ideas, or viewpoints (Anderson, et al., 2012; Borno, 2000; Cramer et al., 2009; Kennedy, Anderson & Moore, 2013; Locke & Anderson, 2015, as cited in Perkins, 2018).

The process — one's level of internally perceived self-confidence (i.e., Internal Self-Confidence) is often reflected in verbal, nonverbal, and behavioral confidence cues (further referred to as External Self-Confidence). These confidence cues inform other's perceptions of that individual's competence, which affords that individual increased access to influence and power, and therefore heightened career success. In turn, this career success is likely to further increase the self-confidence (both internal and external) of said individual. Clearly, External Self -Confidence plays a substantial role in the outcomes of Internal Self-Confidence and whether or not such an attitude can influence one's career success (Perkins, 2018).

Nature of Adjustment

Adjustment, as a process describes and explains the ways and means of an individual's adaptation to himself and his environment. It is an organizational behavior in life situations at home, at school, at work in growing up and in ageing. It helps one to keep out basic impulses at tolerable levels, to believe in one's own abilities and to achieve desired goals. Thus, adjustment helps for self-initiated growth and development along intellectual, emotional, social, physical, and vocational dimensions. Adjustment refers to the psychological process through which people manage or cope with the demands and challenges of every day (Richard & Sumathi, 2015).

Ghaonta (2013) stated that the term adjustment mainly has the following forms in an individual's life. They are home adjustment, health adjustment, social adjustment, emotional adjustment and educational adjustment. In this study, The Adjustment Inventory was used to measure staff members' health adjustment, social adjustment, emotional adjustment.

Health Adjustment: Health also plays prime role in the development of one's personality. Physically healthy person always feels himself/herself well-adjusted in society than an unhealthy one. An unhealthy person always cries for his weakness and could not participate fully with others and he/she then becomes the victim of stress and strains and feels himself unable to adjust both physically and mentally in the society.

Social Adjustment: Social adjustment is an effort made by an individual to cope with standards, values and needs of a society in order to be accepted. It involves coping with new standard and value. In the technical language of psychology 'getting along with the members of society as best one can' is called adjustment. Social adjustment is the achievement of balance in social relationships usually aided by the appropriate application of social skills.

Emotional Adjustment: Emotional adjustment deals with the capability of an individual to be able to control and balance his emotions. A balanced personality is one which is emotionally adjusted. Emotional adjustment is the maintenance of emotional equilibrium in the face of internal and external stressors.

Models of Adjustment

There are several models describing the pattern of adjustment. Mangal (2012) explained some of the important models as follows:

- 1. The Moral Model.** This represents the oldest view-point about adjustment or maladjustment. According to this view, adjustment or maladjustment should be judged in terms of morality i.e. absolute norms of expected behavior.
- 2. The Medico-Biological Model.** This model holds genetic, physiological and biochemical factors responsible for a person being adjusted or maladjusted to himself and his environment.
- 3. The Psychoanalytic Model.** This model owes its origin to the theory of psychoanalysis propagated by Sigmund Freud (1938) and supported by psychologists like Adler, Jung and other neo-Freudians (as cited in Mangal, 2012).
- 4. The Sociogenic or Cultural Model.** According to this model, the society in general and culture in particular affects one's ways of behaving to such an extent that behavior takes the shape of adaptive or non-adaptive behavior turning one into an adjusted or maladjusted personality.
- 5. The Sociopsychological or Behaviouristic Model.** The sociopsychological or behaviouristic model in general emphasizes that
 - (a) Behavior is not inherited. Competencies required for successful living are largely acquired or learned through social experience by the individual himself.
 - (b) The environmental influences provided by the culture and social institutions are important but it is the interaction of one's psychological self with one's physical as well as social environment which plays the decisive role in determining adjustive success or failure.
 - (c) Behavior, whether normal or abnormal is learned by obeying the same set of learning principles or laws. Generally, every type of behavior is learned or acquired as and after-effect of its consequences. The behavior once occurred, if reinforced, may be learned by the individual as normal. As a result, one may learn to consider responses which are labelled normal or abnormal.
 - (d) Not only normal and abnormal behavior is learned, the labelling of behavior as normal or abnormal is also learned. Whether or not an individual is considered abnormal or maladjusted for a particular type of behavior depends upon the observer of the behavior and also upon the social context of the behavior.
 - (e) Maladaptive behavior may be treated by applying the principle of behavior modification, unlearning, deconditioning and correcting environmental situations responsible for its occurrence.

Method

Sample of the Study

Table 1 Number of Participants from University for the Development of the National Races of the Union

Staff Members	Male	Female	Total
Teachers	19	110	129
Office Staff	52	69	121
Total	71	179	250

Instrumentation

In this study, Self-Confidence Scale developed by Kelsey Evelyn Perkins (2018) and The Adjustment Inventory developed by Huch M. Bell (1934) were used to measure staff members' self-confidence and adjustment.

The answers of self-confidence questionnaire were coded in five-point Likert Scale (1=Strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree). Appraisal uses 24 items with two dimensions: internal self-confidence with 12 items and external self-confidence with 12 items.

The answers of the adjustment questionnaire were coded in three-point Likert Scale (1=No, 2=Unsure, 3=Yes). The adjustment questionnaire contains 30 items under three subscales: health adjustment (10 items), social adjustment (10 items) and emotional adjustment (10 items). In assigning the response of each item, the numerical values such as 1,2,3,4 and 5 were used in the case of the positive statements. The scoring was reversed in the case of negative statements.

All the measures used in this study were adapted to Myanmar version. After developing the two instruments, expert reviews were conducted to have content validity and the internal consistency was measured using Cronbach's Alpha value after piloting to determine the reliability of the scale. Experts' reviews were taken by eight experts in the field of Educational Psychology at UDNR and Sagaing University of Education (SUOE). After getting expert reviews, the instrument was modified. Then, pilot testing was done with a sample of 30 staff members from UDNR to know whether the instrument was reliable or not.

After Piloting, reliability analysis was computed. The reliability coefficients (Cronbach's alpha) for self-confidence and the adjustment questionnaire were 0.714 and 0.724 respectively.

Data Analysis and Findings

Table 2 Descriptive Statistics for Self-Confidence and Adjustment of Staff Members

Variable	N	Minimum	Maximum	Mean	SD
Self-Confidence	250	66	102	84.45	7.028
Adjustment	250	75	88	81.39	2.571

Descriptive analyses revealed that the means and standard deviations of self-confidence and adjustment for the whole sample are 84.45 ($SD = 7.028$) and 81.39 ($SD = 2.571$), respectively (see Table 2). These findings showed that self-confidence and adjustment of staff members in this study were somewhat satisfactory.

Table 3 Descriptive Statistics for Self-Confidence Subscales of Staff Members

Variables	N	Minimum	Maximum	Mean	SD
Internal Self-Confidence	250	30	58	45.10	4.360
External Self-Confidence	250	24	52	39.34	4.843

According to Table 3, mean score of internal self-confidence (45.10) is higher than that of external self-confidence (39.34) of staff members.

Table 4 Descriptive Statistics for Adjustment Subscales of Staff Members

Variables	N	Minimum	Maximum	Mean	SD
Health Adjustment	250	24	30	27.40	1.148
Social Adjustment	250	25	30	27.92	1.255
Emotional Adjustment	250	22	30	26.06	1.915

According to Table 4, mean score of social adjustment is the highest (27.92) and emotional adjustment subscale has the lowest mean score (26.06).

Table 5 The Results of Independent Samples *t*-test for Self-Confidence and Adjustment of Staff Members by Gender

Variables	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Self-Confidence	Male	71	85.37	6.772	1.303	248	.194
	Female	179	84.08	7.113			
Adjustment	Male	71	82.68	2.353	5.249***	248	.000
	Female	179	80.88	2.478			

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

According to Table 5, in comparing mean scores for self-confidence and adjustment between male and female, the mean score of male was slightly higher than that of female in self-confidence and adjustment. According to the *t*-test result, there was no significant difference in staff members' self-confidence by gender. According to the *t*-test result, there was statistically significant difference in adjustment between males and females at 0.001 level. Since the effect size (*d*) was approximately 0.74. According to Cohen (1988), the effect size was medium ($d > .5$).

Table 6 The Results of Independent Samples *t*-test for Self-Confidence Subscales of Staff Members by Gender

Variables	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Internal Self-Confidence	Male	71	46.08	4.056	2.258*	248	.025
	Female	179	44.72	4.426			
External Self-Confidence	Male	71	39.28	5.235	-.128	248	.898
	Female	179	39.37	4.694			

* The mean difference is significant at the 0.05 level.

According to the *t*-test result, there was no significant difference in external self-confidence by gender but there was significantly different in internal self-confidence by gender at 0.05 level (see Table 6). Since the effect size (*d*) was approximately 0.314. According to Cohen (1988), the effect size was small ($d > .2$). It means that male staff members had higher internal self-confidence than female staff members.

Table 7 The Results of Independent Samples *t*-test for Adjustment Subscales of Staff Members by Gender

Variables	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Health Adjustment	Male	71	27.55	.938	1.297	248	.196
	Female	179	27.34	1.218			
Social Adjustment	Male	71	28.24	1.236	2.562*	248	.011
	Female	179	27.79	1.244			
Emotional Adjustment	Male	71	26.89	1.916	4.440***	248	.000
	Female	179	25.74	1.819			

*The mean difference is significant at the 0.05 level.

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

According to the result of *t*-test, there was no significant difference in health adjustment subscale, but there were statistically significant differences in social adjustment subscale at 0.05 level by gender. Since the effect size (*d*) was approximately 0.363. According to Cohen (1988), the effect size was small ($d > .2$). Moreover, emotional adjustment subscale was at 0.001 level by gender (see Table 7). Since the effect size (*d*) was approximately 0.622. According to Cohen (1988), the effect size was medium ($d > .5$).

Table 8 Descriptive Statistics for Self-Confidence and Adjustment of Staff Members by Age

Variables	Age Group	<i>N</i>	Mean	<i>SD</i>
Self-Confidence	Below 30	42	83.64	7.067
	30-39	72	84.92	6.513
	40-49	77	85.01	6.768
	Above 49	59	83.71	7.944
Adjustment	Below 30	42	81.05	2.613
	30-39	72	81.54	2.621
	40-49	77	81.65	2.454
	Above 49	59	81.10	2.637

Table 9 The Results of One-Way ANOVA for Self-Confidence and Adjustment of Staff Members by Age

Variables		Sum of squares	<i>df</i>	Mean of squares	<i>F</i>	<i>p</i>
Self-Confidence	Between Groups	99.592	3	33.194	.669	.572
	Within Groups	12200.232	246	49.594		
	Total	12299.824	290			
Adjustment	Between Groups	16.662	3	5.554	.839	.474
	Within Groups	1628.702	246	6.621		
	Total	1645.364	249			

According to Table 9, One-Way ANOVA results showed that there were no significant differences in self-confidence and adjustment according to age group.

Table 10 Descriptive Statistics for Self-Confidence Subscales of Staff Members by Age

Variables	Age	N	Mean	SD
Internal Self-Confidence	Below 30	42	45.29	3.522
	30-39	72	44.79	4.405
	40-49	77	45.23	4.013
	Above 49	59	45.19	4.273
External Self-Confidence	Below 30	42	38.36	5.084
	30-39	72	40.13	4.386
	40-49	77	39.78	4.806
	Above 49	59	38.53	5.120

Table 11 The Results of One-Way ANOVA for Self-Confidence Subscales of Staff Members by Age

Variables		Sum of squares	df	Mean of squares	F	p
Internal Self-Confidence	Between Groups	10.108	3	3.369	.175	.913
	Within Groups	4723.188	246	19.200		
	Total	4733.296	290			
External Self-Confidence	Between Groups	138.940	3	46.313	1.998	.115
	Within Groups	5701.476	246	23.177		
	Total	5840.416	290			

According to Table 11, One-Way ANOVA results showed that there were no significant differences in self-confidence subscales according to age.

Table 12 Descriptive Statistics for Adjustment Subscales of Staff Members by Age

Variables	Age	N	Mean	SD
Health Adjustment	Below 30	42	27.29	1.215
	30-39	72	27.53	1.048
	40-49	77	27.27	1.242
	Above 49	59	27.49	1.089
Social Adjustment	Below 30	42	28.12	1.282
	30-39	72	27.97	1.175
	40-49	77	27.84	1.225
	Above 49	59	27.81	1.371
Emotional Adjustment	Below 30	42	25.64	1.722
	30-39	72	26.04	2.059
	40-49	77	26.53	1.840
	Above 49	59	25.78	1.876

Table 13 The Results of One-Way ANOVA for Adjustment Subscales of Staff Members by Age

Variables		Sum of squares	df	Mean of squares	F	p
Health Adjustment	Between Groups	3.466	3	1.155	.876	.454
	Within Groups	324.534	246	1.319		
	Total	328.000	249			
Social Adjustment	Between Groups	2.972	3	.991	.626	.599
	Within Groups	389.428	246	1.583		
	Total	392.400	249			
Emotional Adjustment	Between Groups	29.154	3	9.718	2.705*	.046
	Within Groups	883.822	246	3.593		
	Total	912.976	249			

*The mean difference is significant at the 0.05 level.

According to Table 13, the result of One-Way ANOVA showed that there were no significant differences in staff members' health adjustment and social adjustment by age. But, the result of One-Way ANOVA showed that there was significant difference in staff members' emotional adjustment subscale by age at 0.05 level. After making mean comparison among age groups, Tukey's HSD Multiple comparison procedure was again employed and the main effect for different age groups on staff members' emotional adjustment subscale was interpreted by using multiple comparison method.

Table 14 The Results of Tukey's HSD Multiple Comparison for Emotional Adjustment Subscale of Staff Members by Age

Variable	(I)Age Group	(j)Age Group	Mean Difference (I-J)	p
Emotional Adjustment	under 30	30-39	-.399	.700
		40-49	-.890	.071
		above 49	-.137	.984
	30-39	under 30	.399	.700
		40-49	-.491	.392
		above 49	.262	.860
	40-49	under 30	.890	.071
		30-39	.491	.392
		above 49	.753	.102
	above 49	under 30	.137	.984
		30-39	-.262	.860
		40-49	-.753	.102

Based on results of Post-Hoc Test by using Tukey HSD test, there was no significant difference in staff members' emotional adjustment subscale by age. Thus, it can be said that most staff members in UDNR had similar abilities of emotional adjustment in their departments since they can reduce well to their unstable emotions.

Table 15 Descriptive Statistics for Self-Confidence and Adjustment of Staff Members by Work Experience

Variables	Years of Work Experience	N	Mean	SD
Self-Confidence	Below 6	57	83.67	7.412
	6-10	44	84.23	6.007
	11-15	21	86.57	6.313
	16-20	47	84.57	6.209
	Above 20	81	84.49	7.881
Adjustment	Below 6	57	81.25	2.849
	6-10	44	81.23	2.400
	11-15	21	81.67	2.817
	16-20	47	81.79	2.303
	Above 20	81	81.27	2.569

Table 16 The Results of One-Way ANOVA for Self-Confidence and Adjustment of Staff Members by Work Experience

Variables		Sum of squares	df	Mean of squares	F	p
Self-Confidence	Between Groups	132.551	4	33.138	.667	.615
	Within Groups	12167.273	245	49.662		
	Total	12299.824	249			
Adjustment	Between Groups	12.512	4	3.128	.469	.758
	Within Groups	1632.852	245	6.665		
	Total	1645.364	249			

According to Table 16, a statistically significant difference was not found in self-confidence and adjustment of staff members by work experience.

Table 17 Descriptive Statistics for Self-Confidence Subscales of Staff Members by Work Experience

Variables	Work Experience	N	Mean	SD
Internal Self-Confidence	Below 6	57	44.84	4.471
	6-10	44	45.32	3.722
	11-15	21	45.24	4.560
	16-20	47	45.32	3.271
	Above 20	81	45.01	5.125
External Self-Confidence	Below 6	57	38.82	5.359
	6-10	44	38.91	4.085

Variables	Work Experience	N	Mean	SD
	11-15	21	41.33	3.261
	16-20	47	39.26	4.843
	Above 20	81	39.48	5.141

Table 18 The Results of One-Way ANOVA for Self-Confidence Subscales of Staff Members by Work Experience

Variables		Sum of squares	df	Mean of squares	F	p
Internal Self-Confidence	Between Groups	9.162	4	2.290	.119	.976
	Within Groups	4724.134	245	19.282		
	Total	4733.296	249			
External Self-Confidence	Between Groups	108.709	4	27.177	1.162	.328
	Within Groups	5731.707	245	23.395		
	Total	5840.416	249			

According to Table 18, ANOVA results showed that there were no significant differences in staff members' self-confidence subscales by work experience.

Table 19 Descriptive Statistics for Adjustment Subscales of Staff Members by Work Experience

Variables	Work Experience	N	Mean	SD
Health Adjustment	Below 6	57	27.32	1.152
	6-10	44	27.82	1.040
	11-15	21	27.52	.981
	16-20	47	27.30	1.196
	Above 20	81	27.26	1.181
Social Adjustment	Below 6	57	27.93	1.237
	6-10	44	27.73	1.353
	11-15	21	28.10	1.338
	16-20	47	28.02	1.189
	Above 20	81	27.91	1.247
Emotional Adjustment	Below 6	57	26.00	2.035
	6-10	44	25.68	1.762
	11-15	21	26.05	1.936
	16-20	47	26.47	1.767
	Above 20	81	26.09	1.982

Table 20 The Results of One-Way ANOVA for Adjustment Subscales of Staff Members by Work Experience

Variables		Sum of squares	df	Mean of squares	F	p
Health Adjustment	Between Groups	10.515	4	2.629	2.029	.091
	Within Groups	317.485	245	1.296		
	Total	328.000	249			
Social Adjustment	Between Groups	2.770	4	.693	.435	.783
	Within Groups	389.630	245	1.590		
	Total	329.400	249			
Emotional Adjustment	Between Groups	14.381	4	3.595	.980	.419
	Within Groups	898.595	245	3.668		
	Total	912.976	249			

According to Table 20, One-Way ANOVA results showed that there were no significant differences in staff members' adjustment subscales according to work experience.

Relationship between Self-Confidence and Adjustment

Table 21 Correlation between Self-Confidence and Adjustment

Variables	Self-Confidence	Adjustment
Self-Confidence	-	.307***
Adjustment	.307***	-

*** Correlation is significant at the 0.001 level (2-tailed).

According to Table 21, the result showed that there was significant correlation between self-confidence and adjustment of staff members in UDNR. As the result, self-confidence was significantly and positively correlated with adjustment of staff members ($r = .307, p < 0.001$). To be specific, the correlation analysis was conducted to find out the inter-correlation coefficient among subscales of self-confidence and adjustment. The results were described in Table 21.

Table 22 Inter-correlation among Subscales of Self-Confidence and Adjustment

Variables	Internal Self-Confidence	External Self-Confidence	Health Adjustment	Social Adjustment	Emotional Adjustment
Internal Self-Confidence	1				
External Self-Confidence	.164**	1			
Health Adjustment	.141*	-.107	1		

Variables	Internal Self-Confidence	External Self-Confidence	Health Adjustment	Social Adjustment	Emotional Adjustment
Social Adjustment	.204***	.153*	-.084	1	
Emotional Adjustment	.198**	.189**	-.070	.122	1

*** Correlation is significant at the 0.001 level (2-tailed).

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

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

Table 22 shows inter-correlation between subscales of self-confidence and adjustment of staff members. The results of Table 22 showed that there was significant positive relationship between internal and external self-confidence at 0.01 level. The result showed that there was significant positive relationship between internal self-confidence and health adjustment at the 0.05 level. Besides, there was significant positive relationship between internal self-confidence and social adjustment at the 0.001 level, and then there was significant positive relationship between internal self-confidence and emotional adjustment at 0.01 level. Moreover, there was significant positive relationship between external self-confidence and social adjustment at 0.05 level, and then there was significant positive relationship between external self-confidence and emotional adjustment at 0.01 level.

Conclusion, Discussion and Recommendation

The main purpose of this study was to investigate self-confidence and adjustment of staff members from the University for the Development of the National Races of the Union (UDNR). A survey study was conducted in 2021-2022 Academic Year. In this study, a total of 250 staff members from UDNR participated. The number of participants was 71 males and 179 females. Questionnaire Survey Method was used in this study.

According to the results of descriptive statistics, the mean score of staff members' self-confidence was 84.45 and the mean score of staff members' adjustment was 81.39. Independent samples *t*-test analysis and one-way analysis of variance (ANOVA) were computed to examine self-confidence and adjustment of staff members by means of demographic differences such as gender, age and work experience.

According to the results of descriptive analysis, the mean score of male staff members was slightly higher than that of female staff members in self-confidence. According to the *t*-test result, there was no significant difference in staff members' self-confidence by gender. The possible reason may be that all staff members have almost equal efforts to perform successful tasks in UDNR. Besides, the result showed that there was significant difference in internal self-confidence subscale between male and female staff members at the 0.05 level. It can be said that male staff members had higher internal self-confidence than female staff members. It may also be that the male staff members naturally have belief about themselves in their capabilities.

In order to know the difference in adjustment by gender, descriptive analysis and independent samples *t*-test were used. The results showed that since the mean score of male staff

members was higher than that of females in adjustment, there was statistically significant difference in adjustment between males and females at 0.001 level. Therefore, the results revealed that male staff members had higher adjustment than female staff members. It may be assumed that male staff members had high adjustment since the males are leaders of family and work place. Besides, the result showed that there was statistically significant difference in social adjustment subscale between male and female staff members at the 0.05 level. According to the results, it can be said that male staff members was higher than female staff members in social adjustment at UDNR. It may be that the males naturally have more harmonious relationship than females. And then, the result showed that there was statistically significant difference in emotional adjustment subscale between male and female staff members at the 0.001 level. According to the results, it can be said that male staff members are higher than female staff members in emotional adjustment at UDNR. It may be assumed that male staff members do not control their emotions than females.

For the mean comparisons of staff members' self-confidence by age group, descriptive analysis was used. The results of the descriptive analysis indicated that the staff members in the 40-49 age group had the highest mean score (85.01) and the staff members in the below 30 age group had the lowest mean score (83.64) among four age groups in staff members' self-confidence. Moreover, in order to test whether self-confidence was significantly different with respect to age group or not, one-way analysis of variance (ANOVA) was utilized. According to the One-Way ANOVA results, there were no significant differences in self-confidence by age group. It can be said that all staff members in UDNR have similar confidence to serve their duties. It may be that all the staff members possess efficient service in their work place respectively.

In order to know the difference in adjustment by age group, descriptive analysis was used. The results of descriptive analysis revealed that the staff members in the 40-49 age group had the highest mean score (81.65) and the staff members in below 30 age group had the lowest mean score (81.05) among four age groups in adjustment. To investigate whether adjustment was significantly different with respect to age group or not, one-way analysis of variance (ANOVA) was utilized. According to ANOVA results, there was no significant difference in adjustment by age group. It can be concluded that all staff members in UDNR have similar adjustment in themselves and their environment. It may be that all staff members in UDNR have mutual respect.

In order to know the mean difference in self-confidence by work experience, descriptive analysis was used. The results of descriptive analysis revealed that the staff members in 11-15 years of work experience had the highest mean score (86.57) and the staff members in below 6 years of work experience had the lowest mean score (83.67) in self-confidence. The One-Way ANOVA result showed that there were no significant differences in staff members' self-confidence by work experience. So, it can be said that all staff members have similar beliefs in their own abilities to perform by work experience. It may be that university is supportive all staff members for safe keeping in work place.

In order to know the mean difference in adjustment by work experience, descriptive analysis was used. The results of descriptive analysis revealed that the staff members in 16-20 years of work experience had the highest mean score (81.79) and the staff members in 6-10 years of work experience had the lowest mean score (81.23) in adjustment. To investigate whether adjustment was significantly different with respect to work experience or not, one-way analysis of variance (ANOVA) was utilized. According to One-Way ANOVA results, there were no significant differences in staff members' adjustment by work experience. Therefore, it can be

interpreted that the staff members possess similar adjustment in interpersonal relationship by years of work experience. It may be that all staff members tried to adjust in and out of work place with their coworkers.

In the correlation analysis, Pearson's Correlation revealed that self-confidence was significantly and positively correlated with adjustment of staff members ($r = .307, p < 0.001$). So it can be concluded that the higher the staff members' self-confidence, the better the adjustment they perform. And then, inter-correlation for the subscales of self-confidence and adjustment was also explored. The results showed that there was significant positive relationship between internal and external self-confidence at 0.01 level. And then there were significant positive relationships between internal self-confidence and social adjustment at 0.001 level, between external self-confidence and emotional adjustment at 0.01 level. Then, there was significant positive relationship between internal self-confidence and emotional adjustment at 0.01 level. Moreover, there were significant positive relationships between internal self-confidence and health adjustment, between external self-confidence and social adjustment at 0.05 level.

Suggestions for Future Researches

The current research is merely focused on staff members from UDNR. Therefore, to make the sample more representative, more staff members under Ministry of Education should be participated in both quantitative and qualitative studies.

It is suggested that longitudinal study may be conducted to confirm and validate the findings of this study. Moreover, the effect of other demographic variables on this study should be further studied and explored. The study of self-confidence and adjustment should be conducted in the other field of professions such as medical institutions, technological institutions and in the basic education in Myanmar, as the self-confidence and adjustment play an important role in person's life. It should be explored the relationship between self-confidence and academic achievement and then should be investigated the relationship between self-confidence and their academic adjustment.

As a conclusion, this research would be conducted for improvement of education activities as a part of important factors. It is expected that this study can help in all tasks of university. The researcher believed that it would be useful for educators, professors, administrators to know the staff members' difficulties and psychological needs, and then to promote staff members' capabilities by providing workshops, forums, seminars and training programmes concerning self-confidence and adjustment.

Acknowledgements

First and foremost, all my respect and gratitude is due to U Aung Thaik Tun (Rector), U Thaung Htike (Pro-Rector, Administration) and Dr. Moe Moe (Pro-Rector, Academic) from University for the Development of the National Races of the Union (UDNR) for granting me to conduct this study and never-ending support throughout this study. I would like to express thanks to the commitment, guidance and generous assistance of Dr. Yin Yin Myint (Retired and Part-time Professor, Department of Educational Psychology, UDNR). I would not have been able to do it without her help. I would like to express my respectful thanks to the external examiner, Dr. Myo Ko Aung (Professor/Head, Department of Educational Psychology, Sagaing University of Education) for his kind guidance and good will in assessing my research study and invaluable comments and suggestions. I am greatly indebted to Daw Nant Phwar Soe Lay (Professor and Head of Department, Department of Educational Psychology, UDNR) who kindly and insightfully pointed out all possible ways leading to the successful completion of the work. I would like to thank my supervisor Daw Nant San San Yi (Associate Professor, Department of Educational Psychology, UDNR) for her

forbearance, continuous encouragement and precious academic guidance. I owe a great debt to my all staff members of UDNR for their immersed help in conducting this study. I also owe a great debt to my colleagues and friends for their warm support and understanding. Finally, I would like to record my deep gratitude to my beloved father, husband and daughter for their financial and emotional support.

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THE IMPACT OF METACOGNITIVE AWARENESS ON ENGLISH READING COMPREHENSION ABILITY OF HIGH SCHOOL STUDENTS

Wint Wah Wah Tun¹, San Win²

Abstract

The primary purpose of this study is to investigate the impact of metacognitive awareness on English reading comprehension ability of high school students. The explanatory sequential mixed methods design was used in this study. As the quantitative study, data were gathered from a total of 1241 Grade 10 students across Myanmar. The Metacognitive Awareness Inventory (MAI) developed by Schraw and Dennison (1994) and the English Reading Comprehension Ability Test (ERCAT) developed with the IRT calibration by the researcher were used as the research instruments. The results and findings of quantitative study pointed out the significant contribution of metacognitive awareness on the prediction of English reading comprehension ability. As the follow-up qualitative study, an appropriate metacognitive intervention program for the improvement of English reading comprehension ability was developed and conducted with a heterogeneous group of 30 high school students. The results pointed out that if the students became more metacognitively aware their reading process, they could plan, monitor and control their reading tasks better and consequently, their English reading comprehension ability have become improved after the intervention. This study highlighted the functioning of metacognitive awareness in improving cognitive processes including reading comprehension and thus, it can hopefully help educators and students in Myanmar by providing the innovative and effective ways of teaching and learning English as a foreign language to some extent.

Keywords: Metacognitive Awareness, Reading Comprehension Ability, High School Students

Introduction

The ability to read effectively in a foreign language is an essential and vital skill not only in education but also in life beyond the school years (Eason, Goldberg, Young, Geist & Cutting, 2012). Whenever a person reads a text written either in a mother tongue or in a foreign language, comprehension involves more than the ability to spell correctly or decode words. Fielding and Pearson (1994) defined comprehension as a complex process involving knowledge, experience, thinking, and teaching. They contended that comprehension inherently involves inferential and evaluative thinking and not just the literal reproduction of the author's words. According to them, how well a reader constructs meaning depends in part on metacognition or their ability to think about and control their own learning and thinking process.

As reading is a complex and purposeful act of meaning making, it involves the actions and interactions of perceptual processes, cognitive skills, and metacognitive awareness. Metacognitive awareness is important for comprehending a text because it allows the reader to identify and study the parts of the text that he or she did not understand and it also enables the reader to become an accurate judge of his or her own learning (Dunlosky & Lipko, 2007). Therefore, metacognitive awareness has received a considerable attention by language teaching theoreticians, psychologists and researchers.

In Myanmar, reading comprehension texts take a large portion of the content of the English curriculum in contrary to other language elements; listening, speaking and writing. Moreover, they are considered as the base for the other skills specially, vocabulary and structure. This calls for more attention to this important language skill. However, in Myanmar high schools, teaching English reading still almost focus on main ideas and retrieving facts with shallow understanding of the content. Future opportunities for quality educational programming after high school may be limited if high school students are unable to get meaningful comprehension in English reading.

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Komariah, et. al (2015) pointed out focusing on the product of reading, rather than the process itself, is considered to be a key reason why students lack the abilities in English as a foreign language reading comprehension. Teachers are noticing gaps in reading comprehension, but are unable to implement research-based strategies to address these skill deficits (Gill, 2008). Teachers require scientifically validated intervention methods to provide effective and efficient teaching for high school students. Thus, by examining the impact of metacognitive awareness on English reading comprehension ability of high school students, this study may offer valuable insights to the most effective and efficient strategies for teachers and students in their teaching and learning English as a foreign language.

Purposes of the Study

The main purpose of the present study is

- to investigate the impact of metacognitive awareness on English reading comprehension ability of high school students

The specific objectives are

- to examine the metacognitive awareness of Myanmar high school students
- to explore the English reading comprehension ability of high school students
- to observe the relationship between high school students' metacognitive awareness and English reading comprehension ability
- to predict the impact of metacognitive awareness on the English reading comprehension ability of high school students.
- to evaluate the effectiveness of metacognitive training for the improvement of high school students' English reading comprehension ability.

Definitions of Key Terms

Reading Comprehension Ability. Reading comprehension ability is the ability to utilize lower order reading processes (including decoding and vocabulary knowledge) and higher order reading processes (including relation of text content to schema and conscious controllable processing) to understand concepts and ideas from text (Pressley, 2002).

Metacognitive Awareness. Based on the two-component model of metacognition, metacognitive awareness can be defined as the awareness of one's own knowledge, processes and cognitive states, i.e., knowledge of cognition, as well as of the regulation of those states which is in term as regulation of cognition (Balcikanli, 2011).

1. Knowledge of Cognition. Knowledge of cognition refers to what individuals know about their own cognition or cognition in general. It can be categorized into three different kinds of metacognitive awareness: declarative, procedural, and conditional knowledge (Brown, 1987).

2. Regulation of Cognition. Regulation of cognition refers to a set of activities which especially include planning, monitoring and evaluation in order to help students control their learning. It can be regarded as the control or executive aspect of the learning process as it can help the learners regulate and monitor their learning (Brown, 1987).

Related Literature Review

Metacognitive Awareness and Reading Comprehension

Predating the coining of the term "metacognitive awareness", metacognitive processes have been germane to reading comprehension with a very long history. Thorndike's (1917) study of reading as reasoning was among the first to document that the readers' awareness of their cognitive processes was the major emphasis in sense-making of reading text. Dewey (1910) and Huey (1968)

also accepted that comprehension of the text requires planning, checking, and evaluating activities, which are now labelled as component parts of metacognitive awareness (as cited in Baker & Beall, 2009). Since it was in the late 1970s and early 1980s, the perspective that the effective readers must have some awareness and control on their cognitive activities they engage in while they are reading has evolved.

Later, metacognitive awareness has become a relatively new label for a body of theory and research in the area of reading. Earlier research carried out by Baker and Brown (1984), for instance, had investigated several different aspects of the relationship between metacognitive awareness and effective reading. Then, the researchers gave special attention to readers' awareness during the reading process, i.e., their metacognitive awareness, that addresses the readers' knowledge and use of their own cognitive resources (Garner, 1987). Baumann, Jones, and Seifert-Kessel (1993) shared a similar perspective with Garner that metacognitive awareness involves the awareness of whether or not comprehension is occurring, and the conscious application of one or more strategies to correct comprehension.

Carrell (1998) asserted that reading comprehension depends on direct cognitive effort, referred to as metacognitive processing, which consists of both knowledge about and regulation of cognitive processes. Flippo and Lecheler (1987) argued that metacognitive awareness can be thought of as the readers' awareness of whether they understand what they have read or not and one way in which teachers can help the readers become metacognitively aware is by encouraging them to change their reading speeds and to direct attention levels according to what they perceive the difficulty of the text to be. Likewise, McNamara and Magliano (2009) who have studied reading processes and reading strategies for many years found that metacognitive awareness during the reading process can inform the readers about their progress, their insufficient comprehension levels, and whether they are unlikely to reach their reading goals.

According to Alexander and Jetton (2000), during reading, metacognitive awareness is expressed through the uses of strategy, which are procedural, purposeful, effortful, willful, essential and facilitative in nature. To sum up, when applied to the reading process, metacognitive awareness can be defined as the knowledge of the reader's cognition relative to the reading process and the self-control mechanisms they use to monitor and enhance comprehension. Through metacognitive strategies, a reader allocates significant attention to controlling, monitoring and evaluating the reading process (Sheorey & Mokhtari, 2001).

Metacognitive Practices in Reading Class

Consistent with Kintsch's (1998) words that reading comprehension is a complex and multifaceted ability, it certainly involves the reader's orchestration of a number of skills and strategies. It is metacognitive awareness that might be anticipated to help the reader aware and control their cognitive process while reading, i.e., become active, strategic and proficient comprehenders. Following Flavell's (1976) notion that metacognitive awareness is not innate and it can be acquired through learning, many researchers have focused on the practices of metacognitive awareness in reading classes and advocated some instructions that can be provided to develop students' metacognitive awareness and reading comprehension as well.

Previously, metacognitive awareness practices at schools have focused on two knowledge types: (1) knowledge in a specific domain, and (2) knowledge about self-as-learner (Lin, 2001). Other than general metacognitive strategies, Brown (1987) provided domain-specific metacognitive strategies for teaching reading such as clarifying the purposes of reading, identifying the important elements of the message, focusing on the main content, monitoring ongoing activities to determine whether comprehension is occurring, and recovering from disruptions and

distractions. Similarly, Pressley (2002) pointed out that in reading classes, practicing the metacognitive activities such as making predictions, generating questions, constructing mental images that represent the meanings of text, summarizing, monitoring understanding, etc., is essential for achieving reading comprehension.

A study conducted by Paris and Jacobs (1984) found that Informed Strategies Instruction (ISL) was effective in enhancing metacognitive knowledge and improving the comprehension monitoring of students, especially for the poor readers. At the same time, Palincsar and Brown (1984) were undertaking research on a different metacognitive approach, called Reciprocal Teaching (RT) which was designed to foster reading comprehension and to teach students to monitor their comprehension. Transactional Strategies Instruction (TSI) is another metacognitive approach that promotes the idea that students should be flexible users of various strategies available in order to enhance reading comprehension (Pressley, 2002). Klingner, Vaughn, Arguelles, Hughes and Leftwich (2004) developed Collaborative Strategic Reading (CSR) to teach multiple comprehension strategies alongside collaborative learning. Recently, Lam (2010) also suggested seven metacognitive strategies which placed special emphasis on language learning.

Besides, verbalizing self-questioning techniques and modeling the application of such questions can give the readers an idea of what metacognitive awareness looks like practically (TEAL, 2012). In addition, the recent study of Eluemuno and Azuka-Obieke (2013) suggested the direct explicit instruction of metacognitive strategies as an efficient way of promoting metacognitive practices in reading classes. The purpose of direct instruction is to provide explicit explanations on the notion and construct of metacognitive awareness so that students who used to be unaware of their own cognitive activities will become aware of their mental actions when they perform cognitive tasks.

Repeatedly, the literature has indicated the effective metacognitive practices including direct explanation, collaborative discussions, modelling, making predictions, questioning, summarizing and clarifying. The investigations of approaches have also revealed with strong empirical evidence that metacognitive and comprehension-related strategy instruction must be combined with effective teaching practices. While there is considerable evidence regarding the value of teaching individual strategies, it is also clear that the teaching of multiple strategies might be superior to the teaching of single strategies in developing reading comprehension (van Kraayenoord, 2010). It is suggested that metacognitive practices of multiple strategies allow students to develop a repertoire that they can learn to use flexibly according to the text type, task, and context.

Method

Research Method

In this study, explanatory sequential mixed methods research design was used and thus, this study was conducted with two phases: Phase (1) which was the quantitative study and Phase (2), the follow-up intervention as the qualitative study.

Firstly, to explore the metacognitive awareness and English reading comprehension ability of high school students, descriptive survey design and quantitative approaches were applied in the Phase (1) of the study.

In order to investigate whether English reading comprehension ability of high school students improved or not after the intervention, one group pre-test post-test experimental design was used in the follow-up study of the Phase (2).

Sampling

As the Phase (1) of the study, the participants were chosen by using stratified random sampling technique. Firstly, two states and three regions (30% of total states and regions) were selected. Next, from 10 high schools located in the selected states and regions, the participant students were randomly selected. Finally, 1241 students participated in the Phase 1.

And then, as the Phase (2), it was decided to conduct the intervention at School A since it possessed the heterogeneous group of students having different levels of English reading comprehension ability according to the quantitative results. By using purposive sampling method, 30 students from School A were purposefully selected as the participants in the intervention program. Specifically, 10 students from low ability group, 10 students from average ability group as well as 10 students from high ability group were participated in the follow-up qualitative study.

Research Instrumentation

In the Phase (1) of the study, the Metacognitive Awareness Inventory (MAI) developed by Schraw and Dennison (1994) and the English Reading Comprehension Ability Test (ERCAT) (Form A) developed by the researcher were used as the research instruments to collect the required data. The MAI was a Likert-scale instrument composed of 52 items and the ERCAT (Form A) was the 40-items ability test developed with IRT calibration method by utilizing BILOG-MG 3 Software.

In the follow up study of the Phase (2), the instruments used for the collecting data included K-W-L chart, The Reading Process Checklist, and English Reading Comprehension Ability Test (Form B) for post-test. The K-W-L chart (what I “Know”, what I “Want” to know, and what I have “Learned”) is one form of self-assessment instruments used to develop students’ metacognitive skills (Shepard, 2000). The Reading Process Checklist developed by El-Koumy (2002) was a checklist for self-assessment of one’s own cognitive task. The ERCAT (Form B) was the parallel test form of ERCAT (form A) and it also included 40 items selected by IRT calibration method.

Data Collection Procedure

For the Phase (1) of the study, Preliminary testing and field testing were conducted with the permissions of administrative personnel. Preliminary testing was completed with 316 Grade 10 students in July, 2019. The actual data collection was done with 1241 Grade 10 students across Myanmar during 2020-2021 Academic Year.

As the Phase (2), based on the quantitative results, a follow-up study was continued with 30 students within the period of January, 2022 to February, 2022 and the data were collected before, during and after the intervention by using the pre-determined instruments.

Data Analysis and Research Findings

Results and Findings of Quantitative Study (Phase 1)

Descriptive Statistics of High School Students’ Metacognitive Awareness

High school students’ metacognitive awareness was measured by Metacognitive Awareness Inventory (MAI) which included 52 items and divided into eight dimensions. The descriptive statistics corresponding to the eight dimensions and overall performance of student’s metacognitive awareness were reported in the following Table 1.

Table 1 Descriptive Statistics of High School Students' Metacognitive Awareness

Variables	N	Mean	Mean%	SD
Declarative Knowledge (8 items)	1241	20.05	62.7%	5.09
Procedural Knowledge (4 items)	1241	9.33	58.3%	3.13
Conditional Knowledge (5 items)	1241	12.6	63%	3.63
Planning (7 items)	1241	17.77	63.5%	4.39
Information Management (10 items)	1241	25.71	64.3%	5.98
Comprehension Monitoring (7 items)	1241	17.94	64.1%	4.47
Debugging (5 items)	1241	13.20	66%	3.56
Evaluation (6 items)	1241	15.32	63.8%	3.85
Metacognitive Awareness (52 items)	1241	131.91	63.4%	28.89

From descriptive analyses, it was revealed that the mean percentage of overall metacognitive awareness was 63.4% and thus, the metacognitive awareness of high school students in this study seemed to be satisfactory.

Descriptive Statistics of High School Students' English Reading Comprehension Ability

High school students' English reading comprehension ability was measured by the English Reading Comprehension Ability Test (ERCAT) (Form A). In order to identify the comprehension ability of high school students, the raw scores were firstly converted to the ability scaled scores. After transforming the raw scores to corresponding ability (θ) scaled scores, descriptive analyses were done and reported in Table 2.

Table 2 Descriptive Statistics of High School Students' English Reading Comprehension Ability

Variable	N	Mean	SD	Minimum	Maximum
English Reading Comprehension Ability	1241	0.013	1.195	-4.00	+4.00

According to Table 2, the mean value of high school students' English reading comprehension ability was 0.013 with standard deviation of 1.195. Since this ability mean value was nearly identical to the average ability score of 0, it may be concluded that Myanmar high school students had average ability to comprehend the text written in English.

Relationship between Metacognitive Awareness and English Reading Comprehension Ability of High School Students

Pearson product-moment correlations were calculated to examine the relationships between the variables (see Table 3).

Table 3 Correlations between the Metacognitive Awareness and English Reading Comprehension Ability of High School Students

	DK	PK	CK	P	IMS	CM	D	E	ERCA
DK	1	.651**	.647**	.666**	.683**	.642**	.654**	.674**	.576**
PK		1	.698**	.645**	.658**	.644**	.637**	.604**	.572**
CK			1	.684**	.717**	.682**	.686**	.649**	.556**
P				1	.736**	.711**	.664**	.627**	.542**

	DK	PK	CK	P	IMS	CM	D	E	ERCA
IMS					1	.733**	.701**	.694**	.584**
CM						1	.695**	.649**	.544**
D							1	.651**	.525**
E								1	.553**
ERCA									1

Note. ** $p < .01$

DK = Declarative Knowledge, PK = Procedural Knowledge, CK = Conditional Knowledge, P = Planning, IMS = Information Management Strategies, CM = Comprehension Monitoring, D = Debugging, E = Evaluation, ERCA = English Reading Comprehension Ability

Regression Analysis for the Prediction of English Reading Comprehension Ability of High School Students

To test the predictive contributions of the dimensions of metacognitive awareness to English reading comprehension ability, the standard multiple regression analysis was conducted.

Table 4 Summary of Regression Analysis for the Predictive Contributions of Metacognitive Awareness to English Reading Comprehension Ability

Predictors	B	β	t	R	R ²	Adj R ²	F
Constant	3.257			.667	.445	.441	123.25***
1. PK	0.296	0.181	5.434***				
2. DK	0.162	0.164	4.828***				
3. CK	0.099	0.072	1.984**				
4. E	0.157	0.121	3.622***				
5. IMS	0.113	0.135	3.450***				
6. CM	0.064	0.057	1.570*				
7. P	0.050	0.044	1.228				
8. D	0.016	0.011	0.323				

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

DK = Declarative Knowledge, PK = Procedural Knowledge, CK = Conditional Knowledge, P = Planning, IMS = Information Management Strategies, CM = Comprehension Monitoring, D = Debugging, E = Evaluation

Then, the resultant model can therefore be defined as in the following equation:

$$ERCA = 3.257 + 0.296PK + 0.162DK + 0.157E + 0.113IMS + 0.099CK + 0.064CM$$

where, ERCA = English Reading Comprehension Ability, PK = Procedural Knowledge,

DK = Declarative Knowledge, IMS = Information Management Strategies, E = Evaluation, CK = Conditional Knowledge, CM = Comprehension Monitoring

Intervention-based Data Analysis and Results (Phase 2)

Intervention Plan for Follow-up Study

Based on the findings of the field testing, the metacognitive intervention focusing on reading was performed with 30 Grade 10 students (15 males and 15 females) as the follow-up study. The summarized account on planning the intervention procedure for six-week metacognitive training was described in the following table (see Table 5).

Table 5 Summarized Account on Planning the Intervention

Intervention	Method	Strategy Oriented	Time Allowed per Session
English Reading Comprehension Ability Test (Pre-test)			2 hours
Week 1	Detached Strategy Training	Teaching 12 Metacognitive Reading Strategies	2 hours
Week 2	Blended Strategy Training	Predicting, Underlying, Consulting an external source, Self-questioning	2 hours
Week 3		Skimming, Focusing on understanding, Underlying, Note-taking, Self-questioning	2 hours
Week 4		Previewing, Slow Down and reread, Note-taking, Summarizing	2 hours
Week 5		Self-questioning, Making educated guess, Consulting an external source	2 hours
Week 6		Practicing all Strategies provided in the intervention	2 hours
Recap all the metacognitive knowledge and strategies			2 hours
English Reading Comprehension Ability Test (Post-test)			2 hours

After that, the intervention was carried out according to the intended intervention plan and specific lesson plans. The lesson plans were combined with reading passages, metacognitive strategies, worksheets, group work activities, self-assessment checklists, discussions, as well as question and answer method.

Results of K-W-L Chart

Students' response to K-W-L chart carried much information about their knowledge of cognition, i.e., their knowledge of what, when, and how to use strategies. Therefore, students' responses to K-W-L chart before and after the intervention were recorded as in Table 6 (see Table 6).

From the results of K-W-L chart, it can be concluded that most students showed some improvement in all forms of metacognitive knowledge, i.e., declarative knowledge, procedural knowledge and conditional knowledge, related to reading strategies after the intervention. Hence,

after the intervention, students can be expected to perform their reading comprehension tasks better than before as they were likely to possess a larger repertoire of strategies.

Table 6 Summarized Account on Students’ Responses to K-W-L Chart

Metacognitive Knowledge		Number of Strategies in Students’ Responses	Before Intervention	After Intervention
			What I “Know”	What I have “Learned”
			Number of Students (Percentage)	
Declarative	To describe the name of strategies they know	No response	13 (43%)	-
		1 – 3	11 (37%)	6 (20%)
		4 – 6	4 (13%)	17 (57%)
		7 – 10	2 (7%)	5 (16%)
		10 – 12	-	2 (7%)
Procedural	To describe their knowledge of how to use a particular strategy correctly	No response	21 (70%)	1 (3%)
		1 – 3	7 (23%)	15 (50%)
		4 – 6	2 (7%)	12 (40%)
		7 – 10	-	2 (7%)
		10 – 12	-	-
Conditional	To express their knowledge of when to use a particular strategy correctly	No response	18 (60%)	1 (3%)
		1 – 3	11 (37%)	9 (30%)
		4 – 6	1 (3%)	14 (48%)
		7 – 10	-	5 (16%)
		10 – 12	-	1 (3%)

Results of the Reading Process Checklist

Within each blended training period of intervention, the students were requested to check on the specific behaviour they were doing or they have done before, while and after reading the text passages. By making the comparison of the frequency of students’ responses to the Reading Process Checklist, it could be examined whether there was any progress on the students’ engagement in metacognitive processes. The percentage of the average response rates of students to the metacognitive skills, i.e., planning, self-monitoring, and evaluation strategies, within five weeks of blended intervention were illustrated in Figure 1.

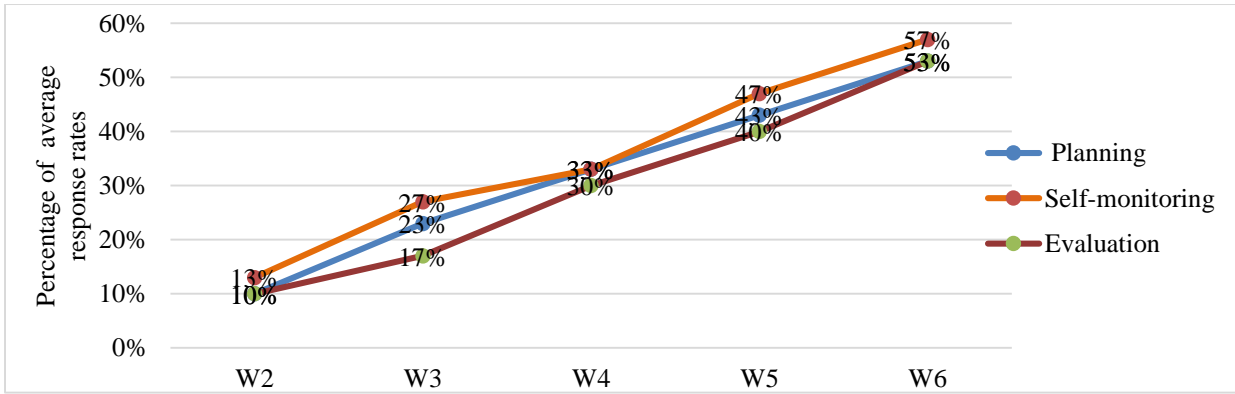


Figure 1 Percentage of Average Response Rates of Students to the Metacognitive Skills

As it can be seen in Figure 1, the most frequently used metacognitive skill of students when they conducted their reading process was self-monitoring strategies, beginning with 13% in week 2, rising slightly to 27% in week 3. It experienced nearly about 10% increase from week 3 to week 6 and the percentage of students who responded that they self-monitored their reading process became 57% in week 6. The second most frequently used metacognitive skill was found to be planning strategies, which began 10% in terms of percentage response rate, going up more than 40% in week 6. Regarding the percentage response rate of evaluation strategies, it rose slightly from 10% to 17% within the first two weeks, then steeply to 30% in week 4 and continued with the regular increase of about 10% in the remaining weeks. Although it got the lowest percentage of response rate compared to the other two metacognitive skills in the first four weeks, it recovered with 53% of response rate in week 6. From the results, a regular increase was found in the average response rate of students to their metacognitive skills while reading indicating that the students can become more aware of their cognitive tasks and can properly monitor and control their processing within their participation in intervention.

Results of English Reading Comprehension Ability Test

To examine the students’ English reading comprehension ability before and after the intervention, the paired samples *t*-test was conducted. According to the results of statistical analysis, the mean scores differed prominently at $p < 0.001$. Therefore, it can be said that English reading comprehension ability of students after the intervention was significantly higher than that of students before the intervention as it can be observed in Table 7.

Table 7 Paired Samples *t*-test Results of English Reading Comprehension Ability Before and After Intervention

Intervention	Mean	<i>N</i>	<i>SD</i>	Mean Difference	<i>t</i>	<i>df</i>	<i>p</i>
Before	-0.715	30	1.79	-0.876	-6.125***	29	.000
After	0.160	30	1.74				

Note. *** $p < .001$

Discussion and Recommendations

Metacognitive awareness plays an important role in educational settings, and consequently has been the subject of a great deal of research in educational psychology. Research has consistently shown that metacognitive awareness is positively related to academic achievement and it is one of the greatest influences on academic performance (Schraw, 1998; van der Stel & Veenman, 2010; Wang, Haertel, & Walberg, 1990). While related to the reading comprehension

process, many researchers pointed out that metacognition-based instruction was more beneficial than traditional reading and instruction (Hilden & Pressley, 2007; Huff & Nietfeld, 2009; Jacobs & Paris, 1987; Moely et al., 1992; Ramdass & Zimmerman, 2008; Veenman, 2013).

Therefore, this study was primarily intended to explore the impact of metacognitive awareness on high school students' English reading comprehension ability since high school students are those who may be supposed to operate formal operational thinking in performing their cognitive tasks. Firstly, English reading comprehension ability test and metacognitive awareness of high school students were examined. Then, the relationship of metacognitive awareness and English reading comprehension ability was investigated. Finally, it was also analyzed how high school students' metacognitive awareness has an impact on their comprehension ability.

As the Phase (1) of the study, a total of 1241 Grade 10 students (male = 586, female = 655) from the selected basic education schools across Myanmar participated in this study. English Reading Comprehension Ability Test (ERCAT-Form A) and Metacognitive Awareness Inventory (MAI) were used as research instruments. According to descriptive analyses, it can be concluded that the metacognitive awareness of high school students seemed to be satisfactory and Myanmar high school students had average ability to comprehend the text written in English.

Again, Pearson product-moment correlation was executed to find out the relationship between metacognitive awareness and English reading comprehension ability of high school students and the criterion $p < 0.05$ was used to determine statistically significant correlations. The results of bivariate correlations showed that the higher levels of the dimensions metacognitive awareness were significantly correlated with higher levels of English reading comprehension ability. Particularly, there was a relatively strong correlation between information management strategies and English reading comprehension ability ($r = .584^{**}$, $p < 0.01$) and similarly, between the declarative knowledge and English reading comprehension ability of high school students ($r = .576^{**}$, $p < 0.01$).

To test the predictive contributions of the dimensions of metacognitive awareness to English reading comprehension ability, the standard multiple regression analysis was conducted. According to the standard multiple regression analysis, the results pointed out that the six out of eight dimensions of metacognitive awareness made a significant predictive contribution to English reading comprehension ability, $F(8, 1232) = 123.25$, $p < 0.001$, and explained for 44.1% (adjusted R^2) of the variance in English reading comprehension ability.

Based on the findings of quantitative study, in order to examine whether metacognitive training on reading can enhance the comprehension ability of high school students, the follow-up intervention was conducted as the Phase (2) of the study. The follow up study was conducted with 30 students by using one group pre-test post-test experimental design. After six-week intervention, the results pointed out that the metacognitive knowledge and regulation of students over their reading process was seen to improve. According to the results of the paired samples t -test, it was observed that English reading comprehension ability of students after the metacognitive training with special focus on reading was significantly higher than that of students before the intervention at $p < 0.001$.

Therefore, it can be concluded that results and findings of quantitative analysis in this study have pointed out the significant contribution of metacognitive awareness on the prediction of English reading comprehension ability of Myanmar high school students. In addition, the metacognitive training for reading implemented in this study was found to make significant improvement in the high school students' English reading comprehension ability. Accordingly, the teachers and educators should consider to make their students become more metacognitively aware

to their cognitive tasks including reading comprehension so that they can maximize their performance in academic settings.

Conclusion

Reading comprehension is a deliberate action, requiring self-invoked plans, cognitive skills, awareness and deliberate use of before, during and after-reading comprehension monitoring and regulation strategies. For efficient reading, readers need to not only use their cognition but also benefit from their metacognitive awareness. However, all students still need to monitor and regulate their own reading process for better comprehension. When deciding how to and what to train students with, it is important to be aware of what they possess and what they need (Veenman et al., 2006). The results of the study revealed that students showed some variations in their level of metacognitive awareness. Because of the differences in students' metacognitive knowledge and skills, it is always beneficial to know about the characteristics of target group to be trained.

In fact, training students with metacognitive strategies to enhance their reading comprehension had better be done by teachers who are knowledgeable enough about metacognition and its training. In such instructional environments, students can progressively hand over the strategy use, experience whole-class discussions, work in small groups, and finally work at individual levels to build up their metacognitive knowledge and skills repertoire. Thus, it should be noted that it is necessary for the preservice and in-service teachers to be instructed with metacognitive strategies and guided how to teach them.

In Myanmar, it would also be suggested that teacher education institutions including Yangon University of Education, Sagaing University of Education, and all the Education Degree Colleges across the country should take the responsibility of training the pre-service and in-service teachers to become metacognitively aware and to engage in higher level cognitive processing activities so that they can become more innovative and effective in teaching their students. It can be expected that the more metacognitively aware the teachers, the more efficient they can be in helping their students to improve their academic performance.

Based on the quantitative and qualitative findings of this study, it should be suggested that training students with metacognitive strategies requires a well-designed intervention program, as well. This is because, teachers' being well-informed about metacognitive awareness and metacognitive strategies may not be enough to reach the ultimate goal. As learning emerges from the interaction of learners, materials and strategies, by paying attention to each component children's metacognitive strategy development can be supported as much as possible. So, training children with familiar texts can be helpful, because they not only activate children's background knowledge, but also lessen the mental load.

As a final recommendation, since this study spotlighted the current situations of high school students' metacognitive awareness and English reading comprehension ability, the findings of this study can be used as the knowledge base for teachers, educators and curriculum developers. This study could be beneficial to the students by providing the metacognitive ways of improving their comprehension ability. Additionally, the findings of this study could also help teachers by reminding them to adopt teaching methods that can promote the metacognitive awareness of their students. To sum up, this study could hopefully help high school teachers and students in Myanmar by providing the innovative and effective ways of teaching and learning English as a foreign language to some extent.

Acknowledgements

We would like to offer respectful appreciation to Dr. Kay Thwe Hlaing, Rector of Yangon University of Education, Dr. Nyo Nyo Lwin, Dr. May Myat Thu and Dr. Khin Khin Oo, Pro-rectors of Yangon University of Education, for their encouragement, administrative support, official permission and providing facilities throughout the research. We are grateful to Dr. Khin Hnin Nwe, Professor and Head of the Department of Educational Psychology, Yangon University of Education for her careful supervision, valuable comments, encouragement and kindness to our study. Finally, we would like to acknowledge all the participants for their cooperation in data collection for this study.

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AN INVESTIGATION INTO ACADEMIC ASPIRATION OF HIGH SCHOOL STUDENTS

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Abstract

Academic aspiration has been a prominent topic within education for many years. Academic aspirations are related to long term academic outcomes, such as academic achievement (graduation from high school, college enrollment and completion) (Redd, Brooks & McGarvey, 2001). The primary purpose of this study was to investigate the academic aspiration (especially in science) of high school students. Then, to investigate whether there would be significant differences between gender, school and district on Grade 10 students' academic aspiration were next interest. Descriptive survey research method and quantitative data analysis were used in this study. As a research instruments, Student Science Aspirations Questionnaire (SSAQ) developed by Dewitt et al., (2010) was applied. Student Science Aspirations Questionnaire (SSAQ) consisted of seven subscales with 34 items of 5-point Likert scale. The internal consistency coefficient (Cronbach's Alpha) of academic aspiration was 0.906. A total of 820 Grade 10 students from four Government Schools and eight Private Schools in four districts of Yangon Region participated in this study. The data collection was completed in the second week of January, 2016. In the analysis of data, descriptive statistics, independent sample t-test, Post Hoc test and one-way ANOVA were used in this study. The result of this study revealed that significant differences existed in the students' academic aspiration by gender. But, significant differences in academic aspiration were not found to be by school and district.

Keywords: Aspiration, Academic aspiration, Academic achievement, Science achievement

Introduction

Aspiration is a strong desire to achieve something. While putting in education sense, students' academic aspiration is important support for their development in education. The hope for future achievements makes immediate problems endurable. Students' aspirations are associated with both behavioral choices that facilitate academic success and academic attainment. Students' aspirations not only reflect academic success and students' skills but also create conditions that promote academic excellence and skills acquisition.

Student's aspirations strongly encourage their academic activities. A student with strong aspirations to attend university is likely to work harder at his school work and so achieve higher grades. Similarly, students who aspire to complete a university degree are more likely to put together effort in their studies and be confident that they can master material at school. As a result, they become more academically proficient. Academic achievement is very much related with academic aspiration. Academic achievement is very much related with academic aspiration.

In recent years, academic achievement has become the core of life. At the time of admission to job, to scholarship, to future studies, good academic results are the only recommendations. In the field of academic achievement, academic aspiration is quite important. Students' achievement depends on their aspiration. Therefore, academic aspiration plays an important role for students' development in education. With global scientific and technological growth occurring rapidly, new generations, students, should achieve in science.

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Science is one of the best vehicles for educating the child by helping him to sharpen his sense of curiosity, critical thinking and the use of scientific methods for identifying and solving students' scientific literacy. For these reasons, researcher decided to study the students' academic aspiration especially in science. Moreover, adolescence period is the transition stage that is clearly a time in which realistic goal setting in relation to achievement becomes increasingly important. Therefore, researcher studies the academic aspirations of high school students who are adolescents.

Purpose of the Study

The main purpose of this study is to study the academic aspiration of high school students.

Definitions of Key Terms

Aspiration. Aspiration refers to what students would like, hope or want to happen in the future for their education (Kulakarni, 2010).

Academic aspiration. academic aspiration can be defined as a strong desire to achieve academically (Kulakarni, 2010).

Academic achievement. Academic achievement is performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college and university (Steinmayr, 2014).

Science aspiration. Science aspiration refers to desire to pursue science further in schooling and as a potential career path (Dewitt et al., 2013).

Review of Related Literature

Aspiration as goal striving behavior is essential feature of modern competitive world. In the formation of one's aspiration what plays most important part is his level of aspiration. According to J.D. Frame, level of aspiration is the level of future performances in a familiar task which an individual, knowing his past performances in the task, explicitly undertakes to reach (as cited in Suslu, 2014). Aspirations are regarded as indicators of students' plans for future attainment. To be well-adjusted person, everyone must have relevant aspirations in life. People have different aspirations. Gender effect has a relevant role in determining one's aspiration level. Girls report higher aspirations for education than otherwise similar boys. Aspirations of boys are more sensitive to the home learning environment than those of girls. However, girls display more stable aspiration than boys (Taylor & Rampino, 2013). Aspiration depends on several factors on such as parents' aspiration, education, socioeconomic status and peer (Suslu, 2014).

Parents' expectations for their children's academic attainment have strong influence on students' plans and aspiration for post-secondary education. Hossler and Stage (1992) found a strong positive relationship between parents' expectations and students' aspirations. In addition, families with high educational aspirations for their children provide more out-of-school learning opportunities for them. Wilson found that the education of parents is known to have a strong independent effect upon students' aspiration (as cited in Khin Thuza Saw, 1991). Parents who have high level of education more involve in their students' school works to achieve. Swell and Shah (1968) found that high levels of parents' educational achievement influence high levels of academic aspiration and achievement of children (as cited in Suslu, 2014).

Socioeconomic status has an important role on academic aspiration and achievement of students. Family resources are important factors to overcome structural barriers for educational attainment (White & Glick, 2009). Parents from higher socioeconomic status more involve in their child's education. As a result, the strength of parental involvement enables the children to achieve education success at school. Parents from low socioeconomic status are more focused on providing for their children's basic needs than helping with homework or being involved in their children's school (Rockwell, 2011). They cannot encourage their children to set high aspirations for future and get achievement. Therefore, socioeconomic status is closely tied to aspirations and achievement (Barry, 2006).

Students' aspirations appear to be influenced not only by parents but also by peer. It has been suggested that students maintain their strong motivation to continue their education through their peers. The relative importance of peer approval increases as the individual grows into adolescent. Friendship becomes more stable at adolescence and the high school students have strong desire for peer group acceptance. Naturally, adolescents are used to discussing their ideas with friends and accept the advice of their friends. After sharing their deep-rooted feelings and ideas with their peers, students can understand each other more and can really help each other. Most of the students' aspirations are related to their friends' aspirations (as cited in Khin Thuza Saw, 1991).

There is the effect of academic aspiration on postsecondary choice (Kulkarni, 2010). In 1987, sociologist Dan Hossler developed three-step model which comprises three stages: predisposition, search and choice. The predisposition to attend or not to attend a postsecondary institution determines a number of factors and is maintained throughout an individual's life as his reference point. Students with higher levels of academic aspiration have higher reference points. Because these individuals start out with a high goal of educational attainment, they will perceive any attainment below this reference point as a loss. Conversely, an individual with low reference point would see the same attainment as a gain. So, students who have high aspiration will get high achievement (as cited in Kulkarni, 2010).

Previous Research Review

Khattab (2015) showed that students with high aspirations have higher school achievement than those with low aspirations. Singh (1984) found that rural students received marks than urban students and there was positively correlation between level of aspiration and achievement. Klimusova et al., (2013) showed that there was significant relationship between academic aspiration and school achievement.

Method

Sampling

By using random sampling technique, 410 Grade 10 students from four Public Schools and 410 Grade 10 students from eight Private Schools were chosen. So, total sample is 820 Grade 10 students in this study. Detailed lists of participants were presented in the following Table 1.

Table 1. Numbers of Participants from Selected Schools

No.	Districts	Schools		Male	Female	Total
1	East	Public School	School (1)	62	47	109
2		Private School	School (2)	12	24	36
3			School (3)	27	22	49
4	West	Public School	School (4)	46	45	91
5		Private School	School (5)	16	38	54
6			School (6)	37	26	63
7	South	Public School	School (7)	55	46	101
8		Private School	School (8)	15	20	35
9			School (9)	36	18	54
10	North	Public School	School (10)	33	76	109
11		Private School	School (11)	43	45	88
12			School (12)	17	14	31
Total				399	421	820

Research Method

In this study, descriptive survey, research method and quantitative data analysis were applied.

Research Instrumentation

In order to identify academic aspiration of participants, Student Science Aspirations Questionnaire (SSAQ) developed by Dewitt et al., (2010) was used. SSAQ comprised seven subscales: Aspiration in Science, Interest in Science Outside School, Experience in School Science, Parental Involvement, Parents' attitudes in Science, Peer Orientation and Future Plan. A total of 34 items were involved in the Student Science Aspirations Questionnaire (SSAQ). Students were asked to respond on five-point Likert scale. The items were adapted to Myanmar version. After preparing the items for each category, experts' review was conducted for face validity and content validity by 14 experts who have special knowledge and close relationship with the field of Educational Psychology at Yangon University of Education. Then, pilot study was done with a sample of 60 Grade 10 students (30 males and 30 females) from B.E.H.S (2) Behan on December 3, 2015 in order to determine the relevancy, appropriateness and clarity of the items included in the survey questionnaires. After the pilot study, the reliability analysis of the instrument was done by calculating the internal consistency coefficient. The internal consistency (Cronbach's alpha) of academic aspiration was 0.906. Thus, the computation of Cronbach's alpha showed that Student Science Aspirations Questionnaire (SSAQ) can be used as the reliable and valid research instrument for this study.

Data Analysis and Findings

Students' Academic Aspiration from all Selected Schools

To investigate the students' academic aspiration, descriptive and inferential statistics were carried out.

Table 2. Descriptive Statistics for Students' Academic Aspiration

Subscales of Academic Aspiration	<i>N</i>	Minimum	Maximum	Mean	Mean %	<i>SD</i>
Aspiration in Science	820	20	100	30.58	76.44	14.843
Interest in Science Outside School	820	20	100	10.87	72.48	16.723
Experience in School Science	820	20	100	12.34	82.24	13.936
Parental Involvement	820	24	100	22.24	88.96	10.883
Parents' attitudes in Science	820	20	100	11.43	76.23	16.862
Peer Orientation	820	20	100	11.53	76.89	14.759
Future Plan	820	31	100	34.03	75.62	8.798
Total Academic Aspiration	820	31	100	133.03	78.25	9.405

Since the numbers of items included in each subscale of academic aspiration were not the same, the mean scores were transferred to the corresponding mean percentages. According to the results, the mean percentage (88.96%) for parental involvement among the subscales of total academic aspiration was the highest. The mean percentage (82.24%) for experience in school science was the second highest. But the mean percentage (72.48%) of interest in science outside school was the lowest. So, it could be said that parents of selected students from Yangon Region were interested and provided supports in the education of their children. They expected their children to be outstanding students. Students learned science and had experience with science subjects well in schools. But, they were less interested in science outside the school. They have less time of studying science outside the school by reading science magazine, journals and by studying in internet websites.

Comparison of Students' Academic Aspiration by Gender

To find out the differences in the academic aspiration with regard to gender, descriptive statistics and *t*- test were applied. The results were mentioned in Table 3.

Table 3. Descriptive Statistics and Results of Independent Sample *t*- test for Students' Academic Aspiration by Gender

Subscales of Academic Aspiration	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>p</i>
Aspiration in Science	Male	397	29.86	16.347	-3.322**	.001
	Female	423	31.24	13.079		
Interest in Science Outside School	Male	397	10.84	17.559	-.339	.735
	Female	423	10.90	15.918		

Subscales of Academic Aspiration	Gender	N	Mean	SD	t	p
Experience in School Science	Male	397	12.11	14.928	-3.047**	.002
	Female	423	12.55	12.788		
Parental Involvement	Male	397	21.59	12.382	-6.784***	.000
	Female	423	22.85	8.574		
Parents' attitudes in Science	Male	397	11.15	17.944	-3.107**	.002
	Female	423	11.70	15.594		
Peer Orientation	Male	397	11.05	15.831	-6.161***	.000
	Female	423	11.99	12.985		
Future Plan	Male	397	33.12	9.906	-6.468***	.000
	Female	423	34.88	7.120		
Total Academic Aspiration	Male	397	129.71	10.367	-5.799***	.000
	Female	423	136.12	7.995		

Note. ** $p < .01$, *** $p < .001$

According to the results, the mean scores of selected female students were higher in total academic aspiration and all subscales of academic aspiration except in the subscale, interest in science outside the school, than those of selected male students. But the mean score in the subscale, interest in science outside the school, was the same. The result of *t*- test showed that there were significant differences in total academic aspiration and all subscales of academic aspiration except in the subscale, interest in science outside the school. It could be concluded that selected Grade 10 female students had more aspirations in science and experiences and learned science well in schools than male students. Moreover, parents of female students more eagerly involved in the education of their children than parents of male students. Female have more closer peer relationship and clear goal for their future than male peer group.

Comparison of Students' Academic Aspiration by School

In this study, the sample students were selected from Government Schools and Private Schools. So, the differences in academic aspiration with regard to school were calculated. The results were mentioned in Table 4.

Table 4. Descriptive Statistics and Results of Independent Sample *t*- test for Students' Academic Aspiration by School

Subscales of Academic Aspiration	Schools	N	Mean	SD	t	p
Aspiration in Science	Government	410	31.02	14.065	2.122*	.034
	Private	410	30.14	15.522		
Interest in Science Outside School	Government	410	10.74	16.545	-1.519	.129
	Private	410	11.01	16.873		

Subscales of Academic Aspiration	Schools	N	Mean	SD	t	p
Experience in School Science	Government	410	12.31	13.648	-.317	.751
	Private	410	12.36	14.233		
Parental Involvement	Government	410	22.06	10.724	-1.928*	.054
	Private	410	22.42	11.005		
Parents' attitudes in Science	Government	410	11.35	16.407	-.966	.334
	Private	410	11.52	17.307		
Peer Orientation	Government	410	11.62	13.776	1.136	.256
	Private	410	11.45	15.676		
Future Plan	Government	410	33.64	8.908	-2.790**	.005
	Private	410	34.41	8.614		
Total Academic Aspiration	Government	410	132.74	9.299	-.504	.614
	Private	410	133.30	9.518		

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

The result showed that mean scores of selected Grade 10 students from Private Schools were higher in interest in science outside the school, parental involvement, parents' attitudes in science, future plan and total academic aspiration than that of selected Grade 10 students from Government Schools. But, mean scores of students from Government Schools were higher in aspiration in science and peer orientation than that of students from Private Schools. The mean score in experience in school science was the same. From the result of *t*-test, there were significant differences in aspiration in science, parental involvement at 0.05 level and in future plan at 0.01 level. It could be said that selected Grade 10 students from Private Schools had more future plan with regard to science than selected Grade 10 students from Government Schools. Parents who place their children in Private Schools eagerly involved in school activities and education of their children. But, students from Government Schools more closer peer relationship and they had more aspiration in science than students from Private Schools.

Comparison of Students' Academic Aspiration by District

Since participants were selected from four districts in Yangon, differences in academic aspiration of Grade 10 students among districts were analyzed. For this purpose, the descriptive statistics and one-way ANOVA were conducted (See in table 5).

Table 5. Descriptive Statistics and ANOVA Results for Students' Academic Aspiration by District

Subscales of Academic Aspiration	Districts	Students	Mean	SD	F	p
Aspiration in Science	East	194	30.80	13.245	1.260	.287
	West	208	29.88	17.218		
	South	190	30.82	13.730		
	North	228	30.82	14.655		
Interest in Science Outside School	East	194	10.83	17.231	.046	.987
	West	208	10.85	17.972		

Subscales of Academic Aspiration	Districts	Students	Mean	SD	F	p
	South	190	10.92	16.464		
	North	228	10.89	15.368		
Experience in School Science	East	194	12.20	14.659	1.006	.389
	West	208	12.22	14.205		
	South	190	12.40	13.294		
	North	228	12.50	13.573		
Parental Involvement	East	194	21.94	11.775	4.084**	.007
	West	208	22.05	11.731		
	South	190	22.12	10.496		
	North	228	22.76	9.270		
Parents' attitudes in Science	East	194	11.30	17.662	1.989	.114
	West	208	11.32	17.007		
	South	190	11.28	16.970		
	North	228	11.78	15.800		
Peer Orientation	East	194	11.46	14.009	2.855*	.036
	West	208	11.20	15.819		
	South	190	11.67	13.802		
	North	228	11.79	14.969		
Future Plan	East	194	33.58	8.902	3.004*	.030
	West	208	33.76	9.448		
	South	190	34.04	9.027		
	North	228	34.65	7.721		
Total Academic Aspiration	East	194	132.12	8.994	2.430	.064
	West	208	131.29	10.565		
	South	190	133.23	9.209		
	North	228	135.18	8.666		

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

According to ANOVA results, there were significant differences in parental involvement at 0.001 level and in peer orientation and future plan at 0.05 level. There were no significant differences in other subscales and total academic aspiration.

To obtain more detailed information of which district had significant differences, post hoc test was conducted by Turkey's multiple comparison procedure. (See in table 6).

Table 6. Results of Post-Hoc Analysis for Academic Aspiration by District

Subscales of Academic Aspiration	(I) Districts	(J) Districts	Mean Difference (I-J)	p
Parental Involvement	North	East	3.279*	.011
		West	2.841*	.032
Peer Orientation	West	North	-3.888*	.030
Future Plan	North	East	2.361*	.030

Note. * $p < .05$

From the results, Parental Involvement of students from North District was higher than those of students from East and West Districts. Peer Orientation of students from North District is higher than those of students from West District. Future Plan of students from North District was higher than those of students from East District.

Conclusion

Aspiration refers to what students would like, hope or want to happen in the future for their education (Kulkarni, 2010). To be well-adjusted person, everyone must have relevant aspirations in life. Adolescence period is the transition stage that is clearly a time in which realistic goal setting in relation to achievement becomes increasingly important. A student who has strong aspiration is likely to work harder at schoolwork and achieve higher grades. Educational researchers have traditionally treated academic aspiration as an endogenous variable that is composed of several other underlying variables. These variables include many factors relating to the parents such as parents' aspirations for their children, parents' education and socioeconomic level. Family and peer group have the most influential power in the formation of students' aspirations. Moreover, in an increasingly globalized world, new generations, students, should develop and interest in science and technology.

The primary purpose of this study was to investigate the academic aspiration of high school students from Yangon Region. As a research instrument, Student Science Aspirations Questionnaire (SSAQ) developed by Dewitt et al., (2010) was applied. The instrument consists of seven subscales such as Aspiration in Science, Interest in Science Outside School, Experience in School Science, Parental Involvement, Parents' attitudes in Science, Peer Orientation and Future Plan with 34 items of 5-point Likert scale. A total of 820 Grade 10 students from four Government Schools and eight Private Schools in four districts of Yangon Region participated in this study.

According to results, significant gender difference was found in subscales and total academic aspiration. Female students set higher academic aspiration in science and learn science well in schools than male students. Parents of female students more provide supports, encouragements and they had more positive attitudes towards science than parents of male students. Female peer group's interest and giving training and information about science subjects with each other were higher than male peer group. Female students set clear plan for their future.

According to significant school difference, students from Government Schools have higher peer orientation and they had stronger aspiration in science than students from Private Schools. Students from Private Schools had clear future goal with regard to science than selected Grade 10 students from Government Schools. Most of the parents of children from Private Schools had high socioeconomic status. Thus, they can concentrate and eagerly involve in schools activities and education of their children.

In comparing districts, parents from North District more interested, concentrated and involved in the education of their children. They give more supports their children to achieve than parents from West and East Districts. Moreover, students from North District have more closely peer relationship and share academic information each other than students from West District. They have strong and clear plan for their future than students from East district.

Hosler and Stage (1992) found that parents' expectations for their children's academic attainment have strong influence on students' plans and aspiration. Parents can help their children plan ahead. So, parents need to place high expectations on their children with regard to their

education. Parents' care and attention influence the formation of children's aspirations. Work, play and other activities should be harmoniously balanced at home. If parents have positive attitudes and encourage their children to perform science well, students may have positive attitudes in science and improve academic aspiration. So, parents need to have positive attitudes in science. Aspirations of friends have a strong impact on the formations of educational, academic, occupational and life aspirations of adolescence. So, in adolescence, parents must care the children not to do mistake in making friends. Similarly, teachers must see that activity of the class is tailored in accordance with the aspiration level of the students.

Limitations

Although the results provide the objectives of the study, there were some limitations in this study. Results of this study were limited to Grade 10 students in Yangon Region. Therefore, the results may not be generalized other grades. Although this research was based on aspiration for science subjects, it should be conducted aspiration for other subjects. Demographic variables such as father's education, mother's education and annual income of family were asked. But completed responses were not obtained. So, these variables had not considered in this study. This study based only on self-reported data. Therefore, subscales involved in academic aspiration such as parental involvement, parents' attitudes in science, peer orientation were based on students' self-reported data. If researcher interviewed the parents as follow up study, these data may be more accurate.

Acknowledgement

I would like to express profound and respectful appreciation to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education) for administrative support during my effort. I would like to offer respectful gratitude to Dr. May Myat Thu (Pro-rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-rector, Yangon University of Education) for their official permission. I would like to convey my sincere and admirably gratitude to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her continuous encouragement, great support, altruism and valuable suggestions throughout my study. I would like to offer my honorable thanks to all participants in my study.

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THE EFFECTIVENESS OF HANDS-ON AND MINDS-ON ACTIVITIES IN PHYSICS LEARNING

Hsu Lei Yee Win¹, Khin Pyone Yi²

Abstract

The main purpose of this study is to find out the effectiveness of hands-on and minds-on activities in physics learning of high school students. In this study, experimental research design (both qualitative and quantitative) was used. Sixty Grade Nine students from BEHS (2) Lanmadaw, Yangon were chosen as the participants of this study by using purposive sampling. The participants were divided into two groups: experimental group and control group. There were thirty students in each group. The four physics activities were constructed from Grade 9 Physics Curriculum (2017-2018 Academic Year). Before conducting intervention by using hands-on and minds-on activities, students were administered the pretest (comprised 50 multiple-choice items) in order to assess their achievement on prior knowledge in physics learning. After intervention, students took the posttest in order to determine their ideas, thinking and problem solving ability on physics learning. In this study, the observation checklist including ten items was developed for treatment verification. The results showed that the mean scores of control group (27.23) for pretest was slightly higher than experimental group (26.50). However, the results of *t*-test showed that there was no significant difference between experimental group and control group for pretest. On the other hand, the mean scores of experimental (36.77) for posttest was higher than that of control group (26.67). According to this study, the *t*-test result showed that there was a significant difference between two group for posttest. In control group, the mean scores of pretest and posttest were (26.20) and (27.70). And, the *t*-test result showed that there was a significant difference between pretest and posttest scores in control group. And then, in experimental group, the mean scores of posttest (36.77) was higher than that of pretest (26.50). Moreover, the results of *t*-test also showed that there was a significant difference between pretest and posttest of experimental group. Thus, the results can be concluded that the experimental group performed better than the control group because students in experimental group studied their physics lessons with hands-on and minds-on activities.

Introduction

During the seventeenth century, the modern science of physics started to emerge and become a widespread tool used around the world. Many prominent people contributed to the buildup of this fascinating field and managed to generally define it as the science of matter and energy and their interactions. The study of physics is a fundamental science that helps the advancing knowledge of the natural world, technology and aids in the other sciences and in our economy.

Without the field of physics, the world today would be a complete mystery, everything would be different because of the significance physics has on our life as individuals and as a society. Physics is the natural science that involves the study of matter and its motion and behavior through space and time, along with related concepts such as energy and force. Physics is one of the fields of knowledge that underlies the physical universe and applies constantly to people's everyday lives. Physics is not a standalone field. Its tenets actually apply to a wide variety of fields.

Physics is also integral to engineering and is generally relevant for all the sciences. Many people are scared of studying physics because it has a reputation as a difficult subject. Specific

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aspects of physics that many people find daunting include the need to understand different mathematical equations and graphs and then be able to translate those concepts into real life.

Hands-on activities were perceived as an enjoyable and effective form of learning of almost all the major U.S science curriculum reforms of the late 1960s and early 1970s (Hodson, 1990). According to the U.S. National Science Education Standards (1995), students should have minds on and/or heads on experiences during hands on activities.

Minds-on activities, while taking hands-on activities, the teacher leads to discuss with students about the activities that they made. By asking questions and seeking answers, the students can develop their thinking processes and enhance their knowledge and understanding in their real life. Minds-on activities challenge students to actively develop their understanding of science concepts using logical inference and the application of concepts to the interpretation of real-world situations experimental and observational data.

So, hands-on and minds-on activities are important in physics learning. As students observe, measure, and manipulate, they are exploring content as well as the nature of science. Teaching physics with hands-on and minds-on inquiry may have more effects on student achievement. Hence, this study applied hands-on and minds-on activities and investigated their effect on students' physics learning.

Purpose of the Study

The main purpose of this study is to find out the effectiveness of hands-on and minds-on activities in physics learning of high school students.

The Specific objectives

1. To investigate the effectiveness of hands-on and minds-on activities in physics learning
2. To investigate any significant difference in the physics achievement of Grade 9 students exposed hands-on and minds-on activities and students exposed to traditional instruction by gender

Definitions of Key Terms

Hands-on. Students are actually allowed to perform science as they construct meaning and acquire understanding (David, & Peter, 1994).

Minds-on. Activities focus on core concepts, allowing students to develop thinking process and encouraging them to question and seek answers that enhance their knowledge and thereby acquire an understanding of the physical universe in which they live (David, & Peter, 1994).

Physics Learning. Atherton (2005) defined physics is the study of the natural world, covering the behavior of matter and energy. It explores the fundamental laws and principles that govern the universe, such as motion, energy, force, and gravity. It applies these laws and principles to explain the behavior of objects and systems.

Review of Related Literature

Teachers need to remember that a hands-on activity is 'useless if students' hands are on, but their heads are out' (Skamp, 2007). Hands-on and minds-on teaching methods involve the students in a total learning experience which enhances students' ability to think critically. Students

investigate experiment, gather data, organize results, and develop conclusions based on their own actions.

Many educators believe that the traditional measures of achievement should be replaced by use of alternative assessment and other performance-based assessment including hands-on and minds-on activities. The use of hands-on and minds-on activities for high school students was aimed more towards relating the activities to real world situations, rather than getting the students excited.

Hands-on activities are used to get students working in groups, manipulating various objects, asking questions that focus observations, and collecting data in an attempt to explain natural phenomena. To achieve significant learning, hands-on activities must become minds-on learning. Hands-on and minds-on teaching is giving rise to new ideas and techniques and is fostering creativity, intuition, and problem solving skills. The popularity of hands-on and minds-on teaching is also creating a need for more labs.

Physics is generally defined as the study of matter and motion. Physics encourages certain attitudes and carries a specific information content. Some of these attitudes and parts of the information are especially relevant to a developing society. Physics underlines all other basic sciences and is the basic for much of technology (Dayal, 2009, cited in Zitzewitz, 1999).

Method

Sixty Grade Nine students from No (2) Basic Education High School, Lanmadaw, Yangon were chosen as the participants of this study by using purposive sampling.

Research Method

In this study, experimental research design (both qualitative and quantitative) was used.

Instrumentation

Five measuring tools that have been used in this study were as follows:

Physics activities were constructed from Chapter 7 (Measurement of Heat), Chapter 10 (Reflection of Light) and Chapter 11 (Electricity and Magnetism) taught in Grade 9 Physics Curriculum. There were four activities such as specific heat capacity of a metal block, specific heat capacity of a liquid (oil), reflection at two plane mirror and conductors and insulators.

Before conducting intervention by using hands-on and minds-on activities, students were administered the pretest in order to assess their achievement on prior knowledge in physics learning. The 45 minutes pretest comprised 50 multiple-choice items.

After intervention, students took the posttest in order to determine their ideas, thinking and problem solving ability on physics learning. Students were allowed for 45 minutes to take the posttest.

In this study, the observation checklist including ten items was developed for treatment verification.

Procedure

First of all, Literature review concerning title and purposes was made from several available books, journals, reports and thesis. Grade 9 Physics Textbook prescribed by Basic Education Curriculum, Syllabus and Textbook Committee were studied thoroughly, together with the official instructional objectives and aims of teaching physics. Secondly, pretest, posttest and physics activities were constructed from Chapter 5 (Work and Energy), Chapter 7 (Measurement of Heat), Chapter 10 (Reflection of Light) and Chapter 11 (Electricity and Magnetism) in order to get the required data. Thirdly, the observation checklist was developed. And then the expert review was conducted. Based on the results of the pilot study, questions which were inappropriate and vague, and could get incomplete answers were revised and changed.

Data Analysis and Findings

In the quantitative study, the data obtained from the pretest and posttest achievement and attitude scores of all students were analyzed descriptively. This study involves analysis of pretest and posttest for experimental and control group. In the qualitative study, observation checklist, assessment criteria, and interview questions were used to investigate their physics process skills, improvement, feeling and ideas about the study of hands-on and minds-on activities.

Descriptive Analysis of Pretest and Posttest for Control Group and Experimental Group

Firstly, the data obtained from pretest and posttest were analyzed by using the independent samples *t*-test since it was assumed that there might be differences between experimental and control group in pretest as well as posttest. The results of test indicated the differences in means and standard deviations of experimental and control group with respect to pretest and posttest and showed whether these differences are significant or not (see Table 1).

Table 1. Analysis of Pretest and Posttest for Control Group and Experimental Group

Test	Groups	N	Mean	SD	<i>t</i>	<i>df</i>	Sig (2- tailed)
Pretest	Control	30	27.23	7.646	-.362	58	.719
	Experimental	30	26.50	8.042			
Posttest	Control	30	26.67	6.551	6.760***	58	.000
	Experimental	30	36.77	4.904			

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

Thus, it can be said that the scores obtained from the application of hands-on and minds-on activities were higher than those from the traditional method of teaching. This result demonstrates that hands-on and minds-on physics learning plays a role in regard to increase in academic achievement.

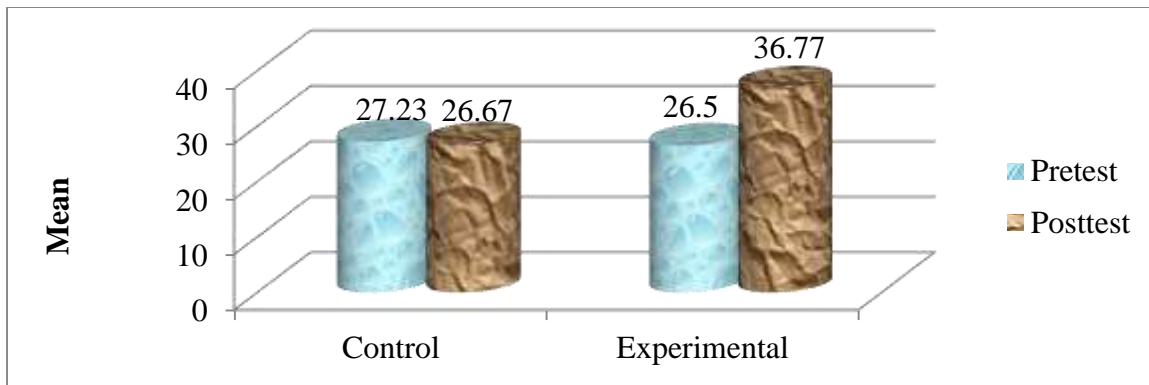


Figure 4.1 Analysis of Pretest and Posttest for Control Group and Experimental Group

Analysis of Control Group and Experimental Group for Pretest and Posttest

In Table 4.2 and Figure 4.2, results showed the means comparison of control group and experimental group for pretest and posttest.

Table 4.2 Analysis of Control Group and Experimental Group for Pretest and Posttest

Test	Groups	N	Mean	SD	<i>t</i>	<i>df</i>	Sig (2- tailed)
Control	Pretest	30	26.20	6.925	-.820	58	.416
	Posttest	30	27.70	7.240			
Experimental	Pretest	30	26.50	8.042	-5.970***	58	.000
	Posttest	30	36.77	4.904			

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

Moreover, the results of *t*-test also showed that there was a significant difference between pretest and posttest of experimental group at 0.001 significant level. Thus, the results can be concluded that the experimental group performed better than the control group because students in experimental group studied their physics lessons with hands-on and minds-on activities. In the use of hands-on and minds-on activities, the students gained more interest and achieve higher scores than in traditional method of teaching (explanation).

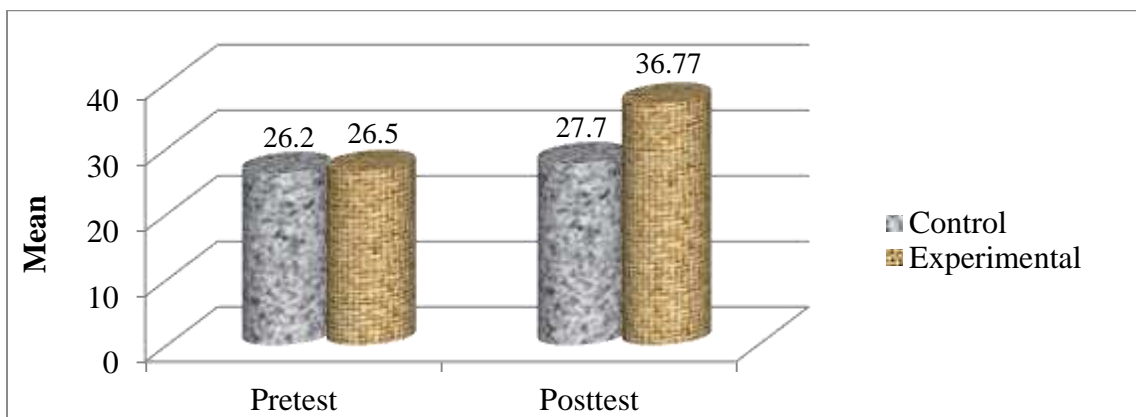


Figure 4.2 Mean Comparison of Pretest and Posttest for Control Group and Experimental Group

Interpretation of Science Process Skills

While doing physics activities, students' physics process skills (criteria) for each activity were assessed according to scoring rubric and observation checklists.

Activity 1 (Specific Heat Capacity of a metal block)

In this activity, there were six criteria. In observing, all groups achieved score 3 as they could use appropriate objects such as calorimeter, stirrer, insulating support and outer jacket, metal block, stove, beam balance and weight box, thread, thermometer (-10° - 110° C) and hot water bath.

Table 3 Scores Attained for Science Process by Groups on Activity 1 (Specific Heat Capacity of a Metal Block)

Process (Criteria)	Group					
	1	2	3	4	5	6
Observing	3	3	3	3	3	3
Manipulating (Handle the equipment)	3	3	3	3	3	3
Measuring	3	3	2	3	2	2
Data Recording	2	2	2	2	2	2
Inferring & Classifying	3	3	3	2	3	2
Communicating	2	2	2	2	2	2
Total	16	16	15	15	15	14

Activity 2 (Specific Heat Capacity of a Liquid (Oil))

In this activity, there were six criteria. In observing, all groups achieved score 3 as they could use appropriate objects such as calorimeter, stirrer, insulating support and outer jacket, liquid (oil), stove, beam balance and weight box, thread and thermometer (-10° - 110° C).

Table 4.4 Scores Attained for Science Process by Groups on Activity 2 (Specific Heat Capacity of a Liquid (Oil))

Process(Criteria)	Group					
	1	2	3	4	5	6
Observing	3	3	3	3	3	3
Manipulating (Handle the equipment)	3	3	3	3	3	3
Measuring	3	3	2	2	2	2
Data Recording	2	2	2	2	2	2
Inferring & Classifying	3	3	3	2	3	2
Communicating	2	2	2	2	2	2
Total	16	16	15	14	15	14

Activity 3 (Reflection at Two Plane Mirrors)

In this activity, there were six criteria. In observing, all groups achieved score 3 as they could use appropriate objects such as drawing board, drawing paper, two plane mirrors, protractor, pins and cello tape.

Table 5 Scores Attained for Science Process by Groups on Activity 3 (Reflection at Two Plane Mirrors)

Process (Criteria) \ Group	Score					
	1	2	3	4	5	6
Observing	3	3	3	3	3	3
Manipulating (Handle the equipment)	3	3	3	3	3	3
Measuring	3	3	2	3	2	2
Data Recording	2	2	2	2	2	2
Inferring & Classifying	3	3	3	2	3	2
Communicating	2	2	2	2	2	2
Total	16	16	15	15	15	14

Activity 4 (Conductors and Insulators)

In this activity, there were six criteria. In observing, all groups achieved score 3 as they could use appropriate objects such as drawing board, drawing paper, two plane mirrors, protractor, pins and cello tape.

Table 6 Scores Attained for Science Process by Groups on Activity 4 (Conductors and Insulators)

Process (Criteria) \ Group	Score					
	1	2	3	4	5	6
Observing	3	3	3	3	3	3
Manipulating (Handle the equipment)	3	3	3	3	3	3
Measuring	2	3	3	3	2	2
Data Recording	2	2	2	2	2	2
Inferring & Classifying	3	3	3	2	3	2
Communicating	2	2	2	2	2	2
Total	15	16	16	15	15	14

The Observation Checklist for Experimental Group

This observation checklist was used for experimental group to study the students’ behavior while doing activities. There are 10 items in the observation checklist. Students’ performance behavior was observed while doing activities by using observation checklist.

For item 1, 95% of students paid attention to the teacher’s attention. For item 2, 93% of students could choose appropriate materials concerned with activities and also use them correctly while doing activities. For item 3, 98% of students obeyed the procedures that have to perform in doing activities. For item 4, 98% of students were interested in the activities because they can study with authentic materials about the activities. For item 5, 92% of students can follow the activities easily.

For item 6, 100% of students seem to enjoy the activities. They do the activities happily and learn the lessons very well. For item 7, 18% of students asked for help from the teacher when they needed. Most students didn't ask for help to perform every activity. For item 8, 94% of students got the science concepts and information while doing the activities. For item 9, all of students share materials with each other. For item 10, 99% of students could do the activities from the beginning to the end successfully until they get the correct results.

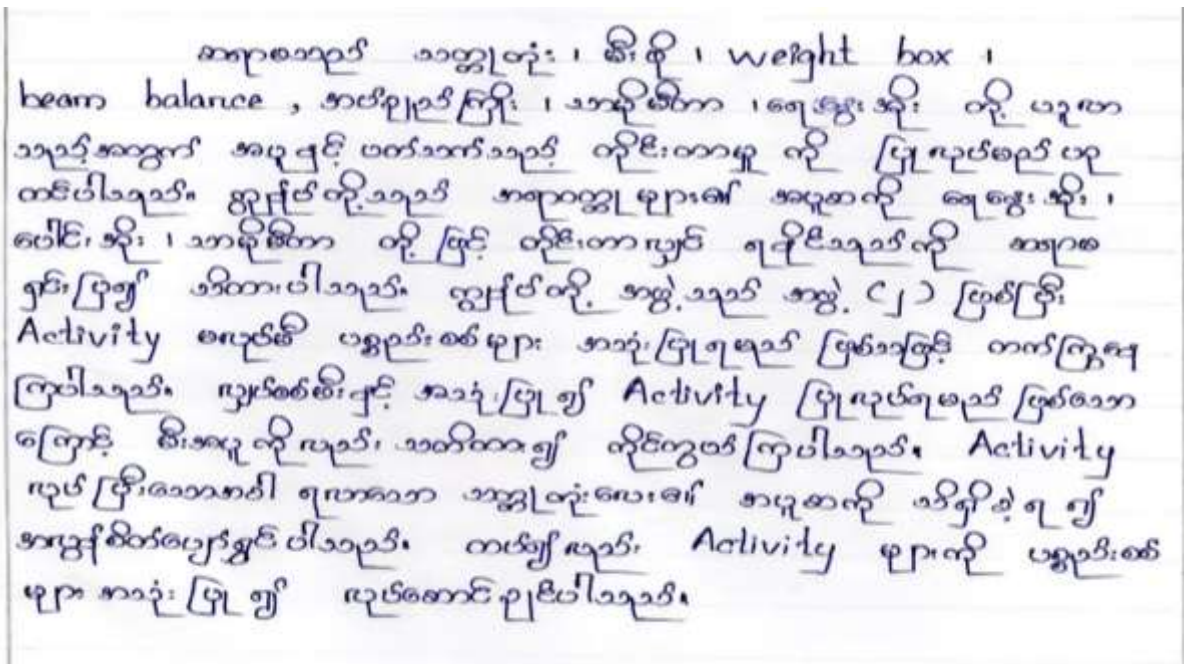
Students' Logs from Experimental Group

Students' log from experimental group was investigated in order to know their opinion, improvement, feelings and ideas about the hands-on and minds on activities in physics learning. Four samples were mentioned as follows:

Date – 9.1.2018 (Tuesday)

Activity 1 Specific Heat Capacity of a Metal Block

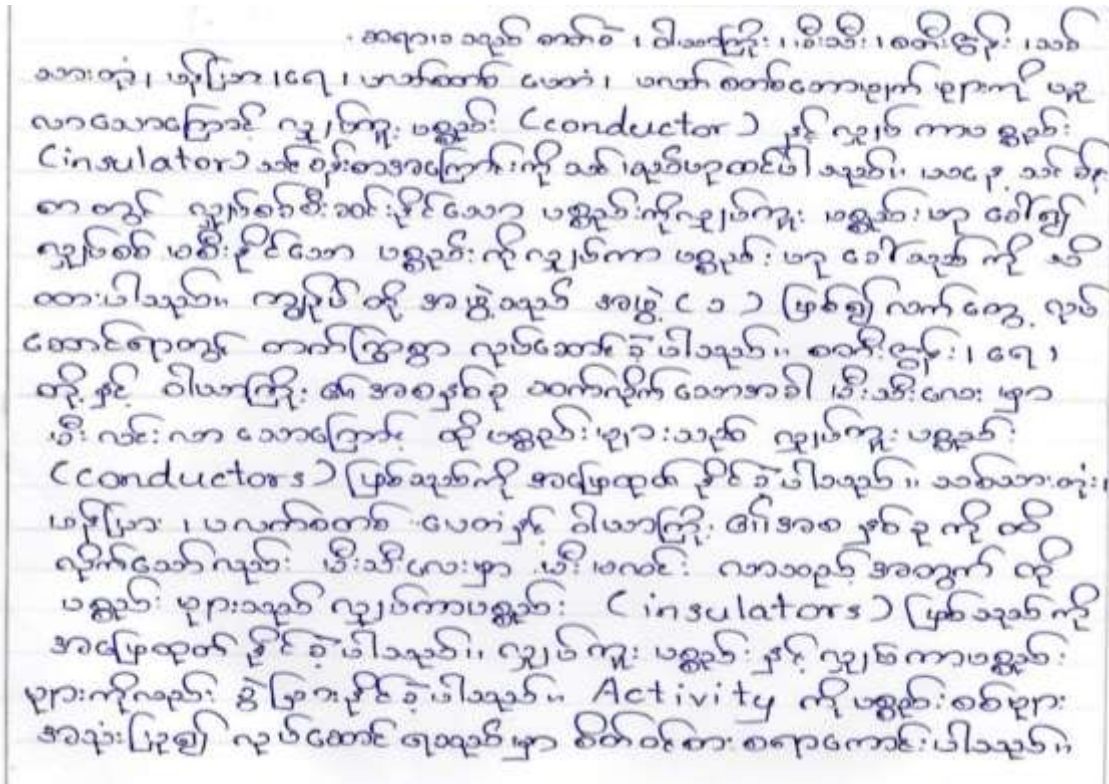
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Date -23.1.2018 (Tuesday)

Activity 4 Conductors and Insulators

Content



Conclusion

The main purpose of this study is to develop hands-on and minds-on activities and to investigate the effectiveness of instruction with those activities and traditional method on Grade 9 students. Both quantitative and qualitative methods were utilized to find out the effects of hands-on and minds-on activities. According to quantitative data, the present study indicated that hands-on and minds-on activities were effective means of increasing students' physics achievement. Results showed that there was a significant difference in the physics performance of high school students exposed to hands-on and minds-on physics instruction and those exposed to traditional instruction. Students instructed by physics activities gained high achievement scores in physics.

In this study, the experimental group studied all the lessons with hands-on activities including minds-on experiences four periods a week and students in the experimental group achieved significantly higher scores compared to students in the control group. During observations, it has been noticed in this study that students were not used to perform hands-on and minds-on activities, so they had some difficulties to follow the instructions while doing activities. The reason might be the fact that in their regular lessons, they were used to listening to their teachers and taking notes during lectures without performing experiments on their own.

According to qualitative data (observation checklist), the results showed the students' positive effects of activities. The students in the experimental group were actively involved in physics learning activities. So, the results in this study indicated that there was a significant difference in physics achievement between the experimental group and the control group.

Discussion

According to Slavin (2003), teachers teach specific skills that will help them work well together, such as active learning, giving good explanations and including other people. Teacher provides a rich variety of activities that permit students to act directly on the physical world. Teachers can easily incorporate these hands-on and minds-on activities in implementing existing curricula. Every physics teacher had provided training courses or workshops or projects concerning with hands-on and minds-on activities to gain practical experience and proficiency. When providing instruction about the activities, teachers supplies complete instructions and materials included in the activities. So, the students instructed by hands-on and minds-on activities involve in learning as active participants and they become independent learners.

Acknowledgement

Foremost, we wish to convey our sincere thanks to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education) and Dr. May Myat Thu, Dr. Khin Khin Oo and Dr. Nyo Nyo Lwin (Pro-Rectors, Yangon University of Education) for their administrative support that assisted greatly in the preparation of this study. Secondly, we would like to express our special gratitude to Dr. Khin Hnin Nwe (Professor and Head of Department of Educational Psychology, Yangon University of Education) for her continuous encouragement and great support for our study. We are particularly indebted to Daw Ohnmar Win (Lecturer, Department of Educational Psychology, Sagaing University of Education) for her expert judgments and great kindness of this paper. She gave us her valuable time and soul in examining our paper and showed us better ways to become the best one. Our sincere thanks go to the Headmistress and Grade 9 students from BEHS (2) Lanmadaw for their participation in this study.

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HIGH SCHOOL STUDENTS' MOTIVATED STRATEGIES FOR LEARNING AND STUDENT ENGAGEMENT

Win Win Nwe¹ and Khin Hnin Nwe²

Abstract

The main purpose of this study was to investigate high school students' motivated strategies for learning and student engagement. Descriptive survey method and quantitative research designed were used. A total of 435 students (Grade10 and 11) from 5 districts in Yangon region. The Motivated Strategies for Learning Questionnaire (MSLQ) and Student Engagement Instrument (SEI) were used as the research instrument. The alpha value for MSLQ and SEI were (.757) and (.780) respectively. In this study, female had significant higher mean scores in motivated strategies for learning than male. And, STEAMS 1 (Bio:) students were significant higher mean scores in expectancy component than STEAMS 2 (Eco:) students. Then, STEAMS 2 (Eco:) students were significant higher mean scores in affect component than STEAMS 1 (Bio:) students. Moreover, students from school 5 were significant higher mean scores in motivated strategies for Learning than those from school 1, 2, 4 and 7. Again, female were significant higher mean scores in student engagement than male. And, there were no significant differences in student engagement by subject combination. But, STEAMS 2 (Eco:) students were significant higher mean scores in teacher-student relationships than STEAMS 1 (Bio:) students. Besides, students from school 5 were significant higher mean scores in student engagement than those from school 2 and 7. The results indicated that high school students' motivated strategies for learning were moderate positively related with student engagement ($r = .672, p < 0.001$). It can be said that the higher the high school students' motivated strategies for learning, the higher the student engagement. By the regression analysis, adjusted R^2 was .519. The value, expectancy and resource management were the strong predictor of student engagement. This study could be used by Department of Basic Education (DBE) to support for improving high school students' motivated strategies for learning and student engagement.

Keywords: Motivated Strategies for Learning Questionnaire, Student Motivation, Student Engagement

Introduction

Students are future citizens who can become "Nation's most need." Learners' interest in lessons can offer academic achievement for them. The negative learning environment and dissatisfaction of students in the classroom make the obstacles of students' motivation. Schools were closed worldwide during COVID-19 pandemic, so most students lost opportunities to learn the lessons with friends in the classroom. Although teachers make effort to teach students, some students have boredom, aggression to others, disruptive behavior which lead to be students as lack of engagement in the classroom. Consequently, disengaged students have conflicts with teachers including their parents, the loss of mutual respect and violence to others which create stress for teachers. Perie, Rebecca, Anthony and Lutkus (2005) agreed that students' low engagement with academic activities would contribute to their dissatisfaction, negative experience, and dropping out of school (as cited in Halif et al., 2020). There are classroom challenges which are full of problems in the classroom, like the students' not accomplishing the tasks, not actively participating in classroom activities and disappointment in the lessons. Subsequently, the unmotivated students may use drugs, deal with criminals, and absent for school days. Finally, these students may drop out of school. Motivation and engagement have been described as students' energy and drive to

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engage, learn, work effectively, and achieve to their potential at school and the behaviors that follow from this energy and drive.

Purpose of the Study

The main purpose of this study is to examine high school students' motivated strategies for learning and student engagement.

Research Questions

This study is guided by the following research questions;

1. Are there any significant differences in student motivation and learning strategies by gender, subject combination and schools?
2. Are there any significant differences in student engagement by gender, subject combination and schools?
3. Are there the relationships between high school students' motivated strategies for learning and student engagement?
4. Does students' motivation and learning strategies predict student engagement?

Definitions of Key Terms

Student Motivation. Student motivation is defined as a process where the learners' attention becomes focused on meeting their scholastic objectives and their energies are directed towards realizing their academic potential (Christophel, 1990).

Student Engagement. Student engagement refers to a “student's willingness, need, desire and compulsion to participate in, and be successful in, the learning process promoting higher level thinking for enduring understanding” (Bomia et al., 1997).

Review of Related Literature

Motivation can be something that keeps us ‘moving’. Motivation can also be a feeling of satisfaction/success when being engaged in worthwhile learning. Beer et al. (2010) state that motivation is considered an essential element to engage learners and thereby enhance students’ learning experiences (as cited in Gedera & Williams, 2015). **Self-determination Theory (SDT)** is a theory of human motivation to explain students’ classroom behavior, learning process, and relationship with the environment (Núñez & León, 2015). SDT focuses on intrinsic motivations and the basic psychological needs (Deci & Ryan, 2012).

Motivated Strategies for Learning

Teaching strategies can influence intrinsic motivation. Intrinsic motivation, also known as self-motivation, refers to influences that originate from within a person which cause a person to act or learn. There are essentially two sections to the MSLQ, a motivation section, and a learning strategies section. The motivation section consists of students' goals and value beliefs for a course. The learning strategy section includes students' use of different cognitive and metacognitive strategies. In addition, the learning strategies section concern student management of different resources.

Motivational Scale

There are three components in motivational scale such as value, expectancy and affect components. Value component includes three subscales which are intrinsic goal orientation, extrinsic goal orientation and task value. Intrinsic goal orientation concerns the degree to which

the student perceives herself to be participating in a task for reasons such as challenge, curiosity, and mastery. Extrinsic goal orientation concerns the degree to which the student perceives herself to be participating in a task for reasons such as grades, rewards, performance, evaluation by others, and competition. Task value refers to the student's evaluation of the how interesting, how important, and how useful the task is (Duncan & McKeachie, 1991). Expectancy Component composed of two subscales, control learning belief and self-efficacy for learning and performance. Control learning beliefs refers to students' beliefs that their efforts to learn will result in positive outcomes (Duncan & McKeachie, 1991). Self-efficacy for learning and performance includes judgments about one's ability to accomplish a task as well as one's confidence in one's skills to perform that task (Duncan & McKeachie, 1991). Only one subscale of affect, test anxiety has been found to be negatively related to expectancies as well as academic performance. Test anxiety is thought to have two components: a worry, or cognitive component, and an emotionality component (Duncan & McKeachie, 1991).

Learning Strategy

The two important components of learning strategies are cognitive and meta-cognitive strategies and resource management. Cognitive and meta-cognitive strategies include rehearsal, elaboration, organization, critical thinking and metacognitive self-regulation. Basic rehearsal strategies involve reciting or naming items from a list to be learned. Elaboration strategies include paraphrasing, summarizing, creating analogies, and generative note-taking. These help the learner integrate and connect new information with prior knowledge. Organization strategies are clustering, outlining, and selecting the main idea in reading passages. Critical thinking refers to the degree to which students report applying previous knowledge to new situations in order to solve problems, reach decisions, or make critical evaluations with respect to standards of excellence. Metacognition in metacognitive self-regulation in which refers to the awareness, knowledge, and control of cognition (Duncan & McKeachie, 1991). Resource management (component) includes time and study environment management, effort regulation, peer learning and help seeking. Time and study environment management involves scheduling, planning, and managing one's study time. Effort management is self-management, and reflects a commitment to completing one's study goals, even when there are difficulties or distractions (Pintrich, Smith, Garcia & McKeachie, 1991). Peer learning is that collaborating with one's peers has been found to have positive effects on achievement. Dialogue with peers can help a learner clarify course material and reach insights one may not have attained on one's own (Boud, Cohen & Sampson, 1999). Help Seeking includes both peers and instructors. Good students know when they don't know something and are able to identify someone to provide them with some assistance (Duncan & McKeachie, 1991).

Student Engagement

According to Kuh (2009), student engagement is generally defined as the term usually used to represent constructs such as quality of effort and involvement in productive learning activities (Reeve et al., 2004, as cited in Abd Hamid, 2016). There are five components in student engagement such as teacher- student relationships, control and relevance of schoolwork, peer support for learning, a future aspiration and goal and family support for learning. Positive teacher-student relationships motivate teachers to devote additional time and resources (Hamre & Pianta, 2001). Teachers who feel enthusiastic about their work are able to foster higher student motivation and better learning outcomes (Keller et al., 2014, as cited Aldrup et al., 2018). Control refers to

the extent to which students feel that they have control over their learning, they are more likely to be engaged and motivated, which can lead to better academic outcomes (Connell & Wellborn, 1991). Relevance refers to the degree to which students perceive that the material they are learning is meaningful and applicable to their lives (Ainley & Hidi, 2014). Peer support for learning is the process of students helping each other learn, grow and succeed academically. It can take many forms, such as tutoring, mentoring, study groups, and collaborative projects (Roscoe & Chi, 2007). A future aspirations and goals for students are to develop strong communication and interpersonal skills, which are essential for success in both personal and professional life. A study by Epstein (2001, as cited in Hill, 2015) found that parental involvement of family support for learning in education can take many forms, including volunteering at school, attending parent-teacher conferences, and helping with homework. The study found that when parents are involved in their children's education, students are more likely to have better attendance, higher grades, and higher test scores.

Method

Descriptive survey method and quantitative research design were used in this study.

Participants

The sample of this study consists of 435 students (High school students) from seven Basic Education Schools in Yangon Region. The participants of this study were chosen from five districts of Yangon region. The sample for this study is described in the following table (See Table 1).

Table 1 Characteristics of the Collected Number of Participants in Yangon Region

No	School	Districts	Students		Subject Combination		Total
			Grade 10	Grade 11	STEAMS 1	STEAMS 2	
1	School 1	Mayangone	31	29	25	35	60
2	School 2	Thingangyun	29	34	25	38	63
3	School 3	Thanlyin	35	30	35	30	65
4	School 4	Kyauktadar	44	21	42	23	65
5	School 5	Mayangone	30	30	34	26	60
6	School 6	Mayangone	30	30	30	30	60
7	School 7	Hlegu	31	31	31	31	62
	Total		230	205	222	213	435

Note. STEAMS= Science, Technology, Engineering, Arts, Mathematics and Sports

Instruments

The Motivated Strategies for Learning Questionnaire (MSLQ) of Hilpert et al. (2013) developed from the original MSLQ (Pintrich et al., 1991). It contains 81 items and two sections

with 5 components. Eight of the 81-items are reverse scored (No. of items for 51, 58, 65, 69, 70, 71, 73 and 78). The motivation section of the MSLQ includes 31 items and the learning strategies section of it includes 50 items. This questionnaire (MSLQ) involves five-point Likert scale and Cronbach's alphas was .757. Student Engagement Instrument (SEI) of Betts et al. (2010) contains 33 items and 5 subscales; 9 items in teacher-student relationships, 9 items in control and relevance of school work, 6 items in peer support for learning, 5 items in a future aspiration and goals, and 4 items in family support for learning. This questionnaire (SEI) concerns four-point Likert scale. Cronbach's alphas was .780.

Data Collection

The pilot study was conducted during the first week of December, 2022 with the sample of 60 students (Grade 10 and 11) from No. (4) Basic Education High School, Insein Township in Insein district. For real data collections, test administration was conducted on last week of January, 2023 by paper surveys.

Results of the Study

To investigate the components of high school students' motivation and learning strategies, the descriptive analysis was conducted and the data were showed in Table 2.

Table 2 Descriptive Analysis for Components of High School Students' Motivated Strategies for learning

Variables	N	No. of Items	Minimum Scores	Maximum Scores	Mean Mean	Mean %	SD
Value	435	14	23	69	55.39	79.13	6.550
Expectancy	435	12	26	60	44.48	74.13	5.587
Affect	435	5	5	25	17.23	68.92	4.419
Cognitive & Metacognitive Strategies	435	31	41	147	104.45	67.39	15.820
Resource Management	435	19	28	89	64.56	67.96	8.888

Note. Mean%= Mean Percentage, *SD*= Standard Deviation

According to the results of Table 2, the mean percentage of value component was 79.13% (the highest) and subscale of cognitive and metacognitive strategies was 67.39% (the lowest).

In order to find out significant differences in high school students' motivation and learning strategies by gender, independent sample t-test was conducted (see Table 3).

Table 3 The Result Independent Sample *t*- test for High School Students' Motivated Strategies for learning by Gender

Variables	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Value	Male	230	54.53	-2.912**	433	.004
	Female	205	56.35			
Expectancy	Male	230	44.34	-.563	432	.574
	Female	205	44.64			
Affect	Male	230	16.80	-2.124*	433	.034
	Female	205	17.70			
Cognitive & Metacognitive Strategies	Male	230	103.33	-1.567	433	.118
	Female	205	105.71			
Resource Management	Male	230	63.23	-3.375**	431.021	.001
	Female	205	66.05			
Motivation & Learning Strategies (Overall)	Male	230	282.27	-2.881**	432	.004
	Female	205	290.45			

* The mean difference is significant at 0.05 level

** The mean difference is significant at 0.01 level

Based on the results of Table 3, there were significant differences in motivated strategies for learning (overall), value, affect and resource management by gender. These findings indicated that mean scores of female students in value component were significant higher than that of male students. Next, the scores of female students in affect component were significant higher than that of male students. Then, there were significant mean scores of female students in resource management than male students.

In order to find out the significant differences in high school students' motivated strategies for learning by subject combination, independent sample t-test was again computed (see Table 4). These findings (Table 4) showed that there were significant differences in expectancy and affect components by subject combination in motivated strategies for learning (MSL) for overall scores. Firstly, STEAMS 1 (Bio:) students were significant higher mean scores in expectancy than STEAMS 2 (Eco:) students. Secondly, STEAMS 2 (Eco:) students were significant higher mean scores in affect component than STEAMS 1 (Bio:).

Table 4 The Result of Independent Sample *t*- test for High School Students' Motivated Strategies for Learning by Subject Combination

Variables	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Value	STEAMS-1(Bio:)	222	55.12	-.890	433	.374
	STEAMS-2(Eco:)	213	55.68			
Expectancy	STEAMS-1(Bio:)	222	45.06	2.220*	432	.027
	STEAMS-2(Eco:)	213	43.87			
Affect	STEAMS-1(Bio:)	222	16.59	-3.102**	433	.002
	STEAMS-2(Eco:)	213	17.89			

Variables	Gender	N	Mean	t	df	p
Cognitive & Metacognitive Strategies	STEAMS-1(Bio:)	222	105.71	1.701	433	.090
	STEAMS-2(Eco:)	213	103.14			
Resource Management	STEAMS-1(Bio:)	222	65.09	1.252	433	.211
	STEAMS-2(Eco:)	213	64.02			
Motivation& Learning Strategies (Overall)	STEAMS-1(Bio:)	222	287.56	1.021	432	.308
	STEAM-2(Eco:)	213	284.64			

* The mean difference is significant at 0.05 level

** The mean difference is significant at 0.01 level

Note. STEAMS 1 (Bio:)= Students learn the subjects (Myanmar, English, Mathematics, Chemistry, Physics and Biology)

STEAMS 2 (Eco:)= Students learn the subjects (Myanmar, English, Mathematics, Chemistry, Physics and Economics)

Next, to obtain the significant differences in high school students' motivated strategies for learning by schools, descriptive statistics were again computed (see Table 5).

Table 5 Mean, Standard Deviation and ANOVA Results of High School Students' Motivated Strategies for learning by Schools

Variables	School	N	Mean	SD	F	p
Value	School 1	60	55.37	7.317	1.442	.197
	School 2	63	54.46	5.398		
	School 3	65	56.08	6.646		
	School 4	65	54.66	5.157		
	School 5	60	57.13	7.445		
	School 6	60	55.72	5.869		
	School 7	62	54.40	6.550		
Expectancy	School 1	60	43.27	5.668	5.584***	.000
	School 2	63	42.45	5.810		
	School 3	65	45.05	5.094		
	School 4	65	44.80	5.133		
	School 5	60	47.23	4.240		
	School 6	60	45.42	6.554		
	School 7	62	43.18	5.180		
Affect	School 1	60	18.12	5.587	3.795**	.001
	School 2	63	17.51	3.992		
	School 3	65	15.29	4.196		
	School 4	65	17.57	4.482		
	School 5	60	17.23	4.323		

Variables	School	N	Mean	SD	F	p
	School 6	60	16.50	4.052		
	School 7	62	18.45	4.866		
Cognitive & Metacognitive Strategies	School 1	60	101.82	15.783	4.411***	.000
	School 2	63	103.03	14.612		
	School 3	65	105.49	15.112		
	School 4	65	106.85	17.269		
	School 5	60	111.42	13.331		
	School 6	60	104.35	18.037		
	School 7	62	98.19	13.416		
Resource Management	School 1	60	63.80	15.820	7.229***	.000
	School 2	63	62.59	8.161		
	School 3	65	66.74	8.956		
	School 4	65	61.94	7.987		
	School 5	60	68.90	8.569		
	School 6	60	66.92	7.070		
	School 7	62	61.31	9.743		
Motivation & Learning Strategies (overall)	School 1	60	282.37	8.958	5.136***	.000
	School 2	63	280.15	8.888		
	School 3	65	288.65	32.138		
	School 4	65	285.82	30.298		
	School 5	60	301.92	23.754		
	School 6	60	288.90	32.731		
	School 7	62	275.53	21.112		

** The mean difference is significant at 0.001 level

*** The mean difference is significant at 0.001 level

By the ANOVA results of Table 5, there were significant differences in all components of motivation and learning strategies except value component including MSL (overall) scales by schools. To get the more detailed information and which school had greatest difference, Tukey HSD comparison procedure was conducted (see Table 6).

Table 6 The Result of Multiple Comparisons of (Post-Hoc) Test for High School Students' Motivated Strategies for learning by Schools

Variables	Schools (I)	Schools (J)	Mean Difference (I-J)	p
Expectancy	School 5	School 1	3.967**	.001
		School 2	4.782***	.000
		School 7	4.056**	.001
	School 6	School 2	2.965*	.042
Affect	School 1	School 3	2.824**	.006
	School 4	School 3	2.277*	.046
	School 7	School 3	3.159**	.001
Cognitive & Metacognitive Component	School 4	School 7	8.653*	.029
	School 5	School 1	9.600*	.013
		School 2	8.385*	.044

Variables	Schools (I)	Schools (J)	Mean Difference (I-J)	p
		School 7	13.223***	.000
Resource Management Component	School 3	School 4	4.800*	.024
		School 7	5.432**	.007
	School 5	School 1	5.100*	.019
		School 2	6.313**	.001
		School 4	6.962***	.000
	School 6	School 7	7.594***	.000
		School 4	4.978*	.020
	Motivation & Learning Strategies (overall)	School 5	School 7	5.610**
School 1			19.550**	.005
School 2			21.772**	.001
School 4			16.101*	.033
		School 7	26.384***	.000

*The mean difference is significant at 0.05 level

**The mean difference is significant at 0.01 level

***The mean difference is significant at 0.001 level

According to the Table 6, school 5 had higher mean scores in expectancy than school 1, 2 and 7. Then, students in school 6 had significant mean scores in expectancy from school 2. Second, school 1, 4 and 7 had higher mean scores in affect than school 3. Third, school 4 had significant higher mean scores in cognitive and metacognitive strategies (CMS) than school 7. Besides, students in school 5 had more ideas to relate the course than students in school 1, 2 and 7.

Fourth, the mean scores of school 3 in resource management were significant from school 4 and 7. Then, school 5 had higher significant mean scores in resource management than school 1, 2, 4, 7. Moreover, school 6 had higher significant mean score in the same components than school 4 and 7.

To find out the mean percentage and standard deviations of **subscales of student engagement**, the descriptive analysis was conducted again (see Table 7).

Table 7 Descriptive Analysis for Subscales of Student Engagement

Variables	N	No. of Items	Minimum Scores	Maximum Scores	Mean	Mean %	SD
Teacher Student Relationships	435	9	12	36	27.09	72.25	4.642
Control & Relevance of School Work	435	9	9	36	27.10	75.28	4.139
Peer Support for Learning	435	6	6	24	17.54	73.08	3.115
A Future Aspiration & Goal	435	5	8	20	17.20	86	2.761
Family Support for Learning	435	4	4	16	13.21	82.56	2.339

According to the results found in Table 7, the mean percentage of a future aspiration and goal was 86 % (the highest) and subscale of teacher-student relationships was 72.25% (the lowest).

Then, to get the differences of mean scores which gender has significant differences in student engagement, the independent sample t-test was conducted (see Table 8).

Table 8 The Results of Independent Sample *t*-test for Student Engagement by Gender

Variables	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Teacher Student Relationships	Male	230	26.55	-2.586**	433	.010
	Female	205	27.70			
Control & Relevance of School Work	Male	230	26.39	-3.821***	433	.000
	Female	205	27.88			
Peer Support for Learning	Male	230	17.27	-1.911	433	.057
	Female	205	17.84			
A Future Aspiration & Goal	Male	230	16.58	5.159***	428.96	.000
	Female	205	17.89			
Family Support for Learning	Male	230	13.10	-1.073	433	.284
	Female	205	13.34			
Student Engagement (overall)	Male	230	99.90	-4.072***	433	.000
	Female	205	104.65			

***The mean difference is significant at 0.001 level

**The mean difference is significant at 0.01 level

Based on the results (Table 8), female students were higher mean scores than male students in teachers-student relationships, control relevance and school work, a future aspiration and goal and student engagement (overall) scales than male.

Again, to find the significant differences in student engagement by subject combination, independent sample t-test was computed (see Table 9).

Table 9 The Results of Independent Sample *t*-test for Student Engagement by Subject Combination

Variables	Subject Combination	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Teacher Student Relationships	STEAMS-1(Bio:)	222	26.64	-2.062*	433	.040
	STEAMS-2(Eco:)	213	27.56			
Control & Relevance	STEAMS-1(Bio:)	222	26.85	-1.262	433	.216
	STEAMS-2(Eco:)	213	27.34			
Peer Support for Learning	STEAMS-1(Bio:)	222	17.38	-1.092	433	.276
	STEAMS-2(Eco:)	213	17.71			
A Future Aspiration	STEAMS-1(Bio:)	222	17.24	.316	433	.752
	STEAMS-2(Eco:)	213	17.15			
Family Support for Learning	STEAMS-1(Bio:)	222	13.27	.515	433	.607
	STEAMS-2(Eco:)	213	13.15			
Student Engagement	STEAMS-1(Bio:)	222	101.38	-1.300	433	.194
	STEAMS-2(Eco:)	213	102.92			

*The mean difference is significant at 0.05 level

As the results of Table 9, there were significant differences in teacher-student relationships by subject combination; STEAMS 2 (students) had higher mean scores than STEAMS 1 (students).

Next, to obtain the significant differences in student engagement by schools, descriptive statistics were again computed (see Table 10).

Table 10 Mean, Standard Deviation and ANOVA Results of Student Engagement by Schools

Variables	Location	N	Mean	SD	F	p
Teacher Student Relationships	School 1	60	27.15	4.632	4.735** *	.000
	School 2	63	25.94	4.842		
	School 3	65	27.94	4.730		
	School 4	65	27.06	4.000		
	School 5	60	28.65	3.691		
	School 6	60	27.93	4.916		
	School 7	62	25.03	4.732		
Control & Relevance of School Work	School 1	60	26.60	4.142	2.892**	.009
	School 2	63	25.98	4.661		
	School 3	65	27.83	4.163		
	School 4	65	27.09	4.130		
	School 5	60	28.63	3.488		
	School 6	60	27.02	4.304		
	School 7	62	26.53	3.561		
Peer Support for Learning	School 1	60	16.98	3.056	1.516	.171
	School 2	63	17.48	3.207		
	School 3	65	18.03	3.142		
	School 4	65	17.42	3.041		
	School 5	60	18.05	3.078		
	School 6	60	17.95	3.159		
	School 7	62	16.89	3.036		
A Future Aspiration & Goal	School 1	60	16.80	2.892	2.172*	.045
	School 2	63	16.51	3.042		
	School 3	65	17.55	2.640		
	School 4	65	16.72	2.577		
	School 5	60	17.82	2.347		
	School 6	60	17.58	2.965		
	School 7	62	17.44	2.653		
Family Support for Learning	School 1	60	12.85	2.161	.635	.702
	School 2	63	12.98	2.549		
	School 3	65	13.42	2.351		
	School 4	65	13.25	2.610		
	School 5	60	13.52	2.347		
	School 6	60	13.33	2.305		
	School 7	62	13.11	2.009		
Student Engagement (overall)	School 1	60	100.38	12.924	3.763**	.001
	School 2	63	98.89	12.078		
	School 3	65	104.77	13.400		
	School 4	65	101.54	11.747		

Variables	Location	N	Mean	SD	F	p
	School 5	60	106.67	9.773		
	School 6	60	103.82	13.340		
	School 7	62	99.00	11.333		

*The mean difference is significant at 0.05 level

**The mean difference is significant at 0.01 level

***The mean difference is significant at 0.001 level

For the aim of searching which school has the greatest difference, Tukey HSD was calculated (see Table 11).

Table 11 The Result of Multiple Comparisons of (Post-Hoc) Test for Student Engagement by Schools

Variables	Schools (I)	Schools (J)	Mean Difference (I-J)	p
Teacher- Student Relationships	School 3	School 7	2.906**	.006
	School 5	School 2	2.713*	.017
		School 7	3.618***	.000
	School 6	School 7	2.901**	.008
Control & Relevance of School Work	School 5	School 2	2.649**	.007
Student Engagement (overall)	School 5	School 2	7.778**	.008
		School 7	7.667**	.010

*The mean difference is significant at 0.05 level

**The mean difference is significant at 0.01 level

***The mean difference is significant at 0.001 level

The results (Table 11) indicated that school 3 had higher mean scores in teacher-student relationships (TSR) than school 7. Next, school 5 had higher mean scores in TSR than school 2 and school 7. And, school 6 had higher mean scores than school 7. Then, school 5 had significant higher mean scores in control and relevance of school work than school 2. Finally, there were significant differences in student engagement (overall). The higher mean scores in school 5 can be seen than school 2 and school 7.

Table 12 Relationship between High School Students' Motivated Strategies for Learning and Student Engagement

Variables	Student Engagement (SE)
High School Students' Motivated Strategies for Learning (MSL)	.672***
Significant	.000
N	435

*** Core

The results of correlation analysis showed a significant statistical relationship between high school students' motivated strategies for learning and student engagement was .612*** (r = .612,

N = 435, $p = .000$). This represents a moderate positive correlation and was statically significant at the 0.001 level. It can be interpreted that if the level of high school student’s motivated strategies for learning is high, their engagement will be high.

Regression Analysis for the Prediction of Student Engagement

In order to observe, the best predicting subscales of high school students’ motivation for learning strategies to student engagement, linear regression analysis was completed. The results were shown in Table 13 and 14.

Table 13 Model Summary of Student Engagement

Model	R	R ²	Adjusted R ²	Std. Error of The Estimate	F
1	.724 ^a	.524	.519	8.596	94.347***

The results of Table 13 and 14 proved that the components of value, expectancy and resource management were statistically high positive correlation to student engagement. It can be supposed that the higher the value, expectancy and resource management, the higher the student engagement. The adjusted R² value is .519. This indicates that (52%) of the variance in occurring student engagement could be explained from high school student’s motivated strategies for learning.

Table 14 Multiple Regression Analysis on Each Subscales of high School Students’ Motivated Strategies for Learning and Student Engagement

Variables	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Std. Error	β		
Student Engagement (constant)	14.004	4.771		2.935**	.004
Value	.685	.086	.363	7.997***	.000
Expectancy	.344	.106	.155	3.247**	.001
Affect	.152	.100	.054	1.518	.130
Cognitive & Metacognitive Strategies	.040	.036	.051	1.099	.272
Resource Management	.435	.063	.311	6.951***	.000

**The Mean Difference Is Significant At 0.01 Level

***The Mean Difference Is Significant At 0.001 Level

This study was based on moderate value (52%) of adjusted R-square. The model equation to predict the student engagement from high school students’ motivation and learning strategies is,

$$SE = 14.004 + .685VL + .344EXP + .435RM$$

- Note. SE = Student Engagement
- VL = Value
- EXP = Expectancy
- RM = Resource Management

It has described those components for value ($\beta = .363$), expectancy ($\beta = .155$), and resource management ($\beta = .311$), were found the strong predictors of student engagement of seven basic education schools from five districts in Yangon Region.

Discussion

The main purpose of this study was to study high school students' motivated strategies for learning and student engagement. Generally, to get the mean and standard deviation of high school students' motivated strategies for learning, descriptive analysis was carried out. In these results, value component was the highest mean percent scores, and cognitive and metacognitive strategies of these scores were the lowest in all components. First, concerning high school students' motivated strategies for learning (MSL), there were significant differences in value competency, affect component, resource management and overall scales by gender. Female students were significant higher mean scores in value competency than male students. This finding did not agree with the study of Chit and Thant (2016), there were no differences for value components by gender.

Then, female students were significant higher mean scores in affect component. It may be interpreted that female students felt more upset emotion when they took the exam than male students.

Next, in resource management strategies female students were significant higher mean scores than male students. This means, female students asked their teachers to clarify concepts they did not understand well than male students. Likewise, in overall scales of MSL, female students were the highest mean scores than male students. This finding is consistent with the study of A Me Me Thwe (2016) who found that female students possess higher science motivation than male students.

Second, the findings from independent sample t-test were found significant differences in MSL expectancy, affect components by subject combination, but no significant differences in overall scales. Initially, in expectancy components, STEAMS 1 (Bio:) students were significant higher mean scores than STEAMS 2 (Eco:) students. STEAMS 1 (Bio:) students had more abilities to learn the course in appropriate ways than STEAM 2 (Eco:) students. In contrast, in affect component, STEAMS 2 (Eco:) students had significantly higher mean scores than STEAM 1 (Bio:) students. It can be determined that STEAMS 2 (Eco:) students. had more worry about the exam than STEAMS 1 (Bio:) students.

Then, there were significant differences in MSL (overall) scales, expectancy, affect, cognitive and metacognitive strategies, and resource management strategies by schools.

First, school 5 had significant higher mean scores in expectancy than school 1, 2 and 7. That is, students in school 5 realized that not learning the material well would be their own fault, more than the latter schools. School 6 had significant higher mean scores in expectancy than school 2. It may be assumed that students in school 6 had higher understanding that not learning interestingly the course will become faults by them than students in school 2.

Second, school 1, 4 and 7 had higher significant mean scores in affect than school 3. It can be described that students in school 1, 4 and 7 thought and worried about the consequences of failing for taking their test more than students from school 3. Third, school 4 had higher significantly mean scores in cognitive and metacognitive strategies than school 7. It can be stated

that students for school 4 memorized keywords to remind them in their class more than students from school 7. Moreover, students from school 5 tried to inquire to concepts they were studying that they did not understand more than students from school 1, 2 and 7.

Fourth, in resource management, school 3 had significant higher mean scores in than school 4 and 7. Hence, students from school 3 worked hard to do well in their class if they did not like more than students from school 4 and 7. Finally, school 5 had higher mean scores in in resource management than school 1, 2, 4 and 7. Besides, school 6 had significant higher mean scores in resource management than school 4 and 7. Finally, school 5 had higher mean scores in MSL (overall) scales than school 1, 2, 4 and 7.

Normally, descriptive analysis had carried out to measure the mean scores of student engagement. This finding indicated that a future aspiration and goal had the highest mean scores, and teacher-student relationships had the lowest mean scores in all five subscales.

Firstly, significant differences can be seen in teacher-student relationships, control relevance of school work, a future aspiration and goal, and student engagement (overall) scales by gender. It can be said that female students had significant higher mean scores in teacher- student relationships than male students in these subscales. Female students were cared by their teachers more than male students.

Next, female students had significant higher mean scores in control relevance of school work than male students. It can be said that female students learn their lessons carefully and they liked tests than male students. Then, female students had significant higher mean scores in a future aspiration and goal than male students. It can be observed that, female students believed that school had important for achieving their future goals more than male students.

Second, there were significant differences in teacher-student relationships by subject combination, but no significant differences in student engagement (overall) scales by subject combination. STEAMS 2 (Eco:) students were significant higher mean scores in teacher-student-relationships than STEAMS 1 (Bio:) students. It can be explained that STEAMS 2 (Eco:) students were filled their needs by their teachers more than STEAMS 1 (Bio:) students.

Third, there were significant differences in teacher-student relationships, control and relevance of school work and student engagement (overall) scales. It can be described that students in school 3, 5 and 6 had higher mean scores in teacher- student relationships than those in school 7. Students in school 3 and 6 felt more safety at school than students in school 7. Then, students in school 5 had higher mean scores in teacher- student relationships than students in school 2. It can be stated that students in school 5 thought their teachers had open and honest with them than those in school 2.

Next, students in school 5 were significant higher mean scores in control and relevance of school work than those in school 2. It can be interpreted that students in school 5 had more habits that they checked their school work whether they understood or not than those in school 2. Likewise, students in school 5 had significant higher mean scores in student engagement (overall) scales than those in school 2 and 7.

Chiefly, the study investigated that high school students' motivated strategies for learning (MSL) and student engagement (SE) were moderately and positively correlated and statistically significant at 0.001 level. Consequently, it can be concluded that the higher the high school

students' motivated strategies for learning, the higher the student engagement. This finding agrees with earlier findings of Xiong et al (2015) who found that students' motivation correlated to their engagement. After all, by the linear regression analysis, the components for value, expectancy and resource management were strongly predictors on student engagement in this study.

Summary and Conclusions

First, concerning in motivated strategies for learning (MSL), female students had significant highest mean scores than male students in overall scales by gender. And, there were no significant differences in overall scales in MSL by subject combination. Next, school 5 had significant higher mean scores in MSL (overall) scales than school 1, 2, 4 and 7.

Second, for student engagement, there were significant differences in student engagement (overall) scales by gender. Female students had higher mean scores than male students in overall scales. And, there were no significant differences in overall scales in student engagement by subject combination. Besides, there were significant differences in student engagement (overall) scales by schools. In this case, students in school 5 had higher mean scores in student engagement (overall) scales than those in school 2 and 7.

By the study, there were moderately and positively correlated and statistically significant between high school students' motivated strategies for learning (MSL) and student engagement (SE) at 0.001 level. Consequently, it can be determined that the higher the high school students' motivated strategies for learning, the higher the student engagement.

Finally, teachers, parents, school leaders, responsible persons from Department of Basic Education (DBE) should provide high school students' needs and opportunities for their learning to get positive outcomes and to enjoy for learning according to the school situation. This study will support importance of high school students' motivated strategies for learning and student engagement for their satisfaction in school without leaving their school, friends and teachers.

Acknowledgements

We would like to express respectful gratitude to Dr. Kay Thwe Hlaing (Rector of Yangon University of Education), and Dr. May Myat Thu, Dr. Khin Khin Oo and Dr. Nyo Nyo Lwin (Pro-rectors of Yangon University of Education) for their administrative supports in this study. Our special thanks are dedicated to Professor Dr. Khin Thuza Saw (Principal (Retired), Thingangyun Education Degree College) for her expert advice and judgement as external examiner. Then, we would like to heartfelt gratitude to all teachers from department of educational psychology.

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A VALIDATION STUDY OF THE EPISTEMOLOGICAL BELIEFS QUESTIONNAIRE

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Abstract

This study aims to validate a questionnaire measuring the epistemological beliefs of school teachers. In order to study epistemological beliefs, the items were adapted from the questionnaires which are connecting with epistemological beliefs. Based on instruments, Epistemological Beliefs Questionnaire (EBQ), a five-point Likert type self-report questionnaire, is proposed and is investigated to show its validity in a random sample of 436 school teachers. Exploratory factor analysis showed that a five-factor structure of the epistemological beliefs composed of (1) belief in knowledge by experts, (2) belief in certainty knowledge, (3) belief in reasoning knowledge (4) belief in developing knowledge, and (5) belief in effort knowledge. Confirmatory factor analysis further confirmed the validity and reliability of epistemological beliefs as a five-factor construct. This Epistemological Beliefs Questionnaire (EBQ) can serve as a tool to evaluate the epistemological beliefs of school teachers.

Keywords: Epistemological Beliefs, Belief in Knowledge by Experts, Belief in Certainty Knowledge, Belief in Reasoning Knowledge, Belief in Developing Knowledge, and Belief in Effort Knowledge

Introduction

In our professional lives, we confront the learning of a new skill and make determination about their particular value. Epistemological beliefs play an important role in most academic experiences. Hofer clarifies how personal epistemology relates to learning and education in general. If epistemology is developmental and development is the aim of education, the goal of education is to foster epistemological development (Hofer, 2001, p. 367).

Furthermore, because epistemological thinking is a critical component of lifelong learning both in and outside of a classroom, epistemological beliefs impact the manner in which individuals resolve competing knowledge claims, evaluate new information, and make fundamental decisions that affect their own lives and the lives of others (Hofer, 2001, p. 354).

Educational psychologists have theorized epistemology to be “a person’s implicit beliefs and assumptions regarding the nature, acquisition, structure, sources and justification of knowledge” (Hofer & Pintrich, 1997). Individuals’ beliefs about knowledge and knowing are called epistemological beliefs (Hofer & Pintrich, 1997). They function as a lens through which a person interprets materials and learning demands, and influence learning and instruction processes (Rebmann, Schloemer, Berding, Luttenberger, & Paechter, 2015).

Schommer (1994) pioneered an epistemological beliefs system of five more or less independent beliefs, which are: stability of knowledge, structure of knowledge, source of knowledge, control of knowledge acquisition and the speed of knowledge acquisition. In contrast to Schommer (1994), Hofer and Pintrich (1997) indicated that some of Schommer’s (1994) dimensions are outside of the definition of epistemological belief. Therefore, Hofer and Pintrich (1997) conceptualized these beliefs as the certainty of knowledge (stability), simplicity (structure)

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of knowledge, source of knowing (authority), and justification for knowing (evaluation of knowledge claims).

In this study, based on these two theoretical background of Schommer (1994) and Hofer and Pintrich (1997), Epistemological Beliefs Questionnaire (EBQ) developed by Chan and Elliot (2004) to measure the beliefs of teachers regarding the nature of knowledge in teaching and learning context in Hong Kong and Epistemological Beliefs Questionnaire (EBQ) developed by Elder (2002) to measure the beliefs of teachers regarding the nature of knowledge in teaching and learning context in USA used for validation of epistemological beliefs of school teachers in Myanmar.

Purposes of the Study

The main purpose of the study is to validate the Epistemological Beliefs Questionnaire for the school teachers.

Definitions of Key Terms

Epistemological Beliefs: Epistemological beliefs refer to conceptions about how knowledge is constructed and evaluated and how knowing occurs (Hofer, 2001).

Belief in Knowledge by Experts: belief that knowledge is handed down by teachers and other experts.

Belief in Certainty Knowledge: belief that knowledge is certain and unchanging.

Belief in Reasoning Knowledge: belief that knowledge is derived from reasoning / thinking / testing.

Belief in Developing Knowledge: belief that knowledge is uncertainty / developing / changeable.

Belief in Effort Knowledge: belief that knowledge is a learning process that requires effort.

Related Literature Review

Epistemology is an area of philosophy concerned with the nature and justification of human knowledge. A growing area of interest for psychologists and educators is that of personal epistemological development and epistemological beliefs: how individuals come to know, the theories and beliefs they hold about knowing, and the manner in which such epistemological premises are a part of and an influence on the cognitive processes of thinking and reasoning.

Piaget (1950) used the term genetic epistemology to describe his theory of intellectual development, initiating the interest of developmental psychologists in this intersection of philosophy and psychology. These interests were an important step in the growing reaction to the dominance of behaviorism, which had removed knowing altogether from learning (Kohlberg, 1971). Bringing knowing back into the picture was central to emerging theories of moral judgment and development (Gilligan, 1982; Kegan, 1982; Kohlberg, 1969, 1971). Along parallel lines, Perry's (1970) attempts to understand how students interpreted pluralistic educational experiences had led to a theory of epistemological development in college students.

Thus, the research on epistemological beliefs is traced back to the works of Piaget (1971) and Perry (1970); the latter researched epistemological development of male students at Harvard University. Perry (1970) uses a checklist and identifies nine positions of epistemological development that are consequently categorized into four major perspectives: dualism, multiplism,

relativism and commitment within relativism. It is important to note that there are obvious limitations to Perry's work. It fails to consider women's perspectives. The perceived limitations give rise to research and thus other models are developed.

The study of Belenky, Clinchy, Goldberger, and Tarule (1986) is based on the interviews of 135 women in the USA. Their theory is that women's epistemological views are closely related to their perceptions of self and how they are related to the world in general (Hofer & Pintrich, 2004). The scheme of Belenky, Clinchy, Goldberger, and Tarule (1986) in USA places the different ways of knowing by women into five epistemological categories; silence, received knowing, procedural knowledge, separate and connected.

Perry (1970) has not taken into consideration context and multiple views and Belenky, Clinchy, Goldberger, Tarule, and JM (1986) include only women's perspective, Magolda (1992) comes with another model which aims to isolate the epistemological belief patterns of male and female respondents while keeping in mind the contextual nature of epistemology. Through her research, Magolda (2001) identifies an order of four levels of development which she refers to as "ways of knowing". The identified levels are: absolute, transitional, independent and contextual.

King and Kitchener (1994) emphasize on exploring the cognitive process involved in solving ill-structured problems by respondents. They believe that epistemological beliefs are tied to the ability to understand and construct solutions for ill-structured problems. They develop the Reflective Judgment Model after conducting cross-sectional and longitudinal research with students from late adolescent stages into adulthood. This model consists of seven distinct stages of epistemological development and is further categorized into three distinct levels: the pre-reflective stage, the quasi-reflective stage and the reflective stage.

Perry (1968) believes that epistemological beliefs develop gradually and claims that students develop those beliefs progressively in their study. Contrary to such a view, Schommer (1990) criticizes the one-dimensional and developmental nature of epistemological beliefs represented by Perry, claiming that they do not develop in stages, but an individual can possess several beliefs simultaneously.

Schommer (1990) suggests that personal epistemologies may be a system of beliefs and consequently develops the first multi-dimensional theory. The multi-dimensional theory includes the possibility that each of the dimensions of epistemological beliefs may develop separately from the rest, especially, when an individual's beliefs are in a transitional phase. Her theory identifies the five beliefs. They are stability of knowledge, source of knowledge, structure of knowledge, ability to learn and speed of learning.

Thus, the current study will examine the psychometric properties of Epistemological Beliefs Questionnaire with a special emphasis on its construct validity and reliability.

Method

The descriptive survey method is utilized in this study.

Participants of the Study

The participants of the study are selected by using the random sampling method. The sample is composed of 436 school teachers (129 males and 307 females) in the study.

Instruments

The items for the questionnaire were generated through a literature review. In order to study epistemological beliefs, the items were adapted from the questionnaire which are concerning with epistemological beliefs. The items comprised in the epistemological beliefs questionnaire are assembled from 30 items of epistemological beliefs questionnaire developed by Chan and Elliott (2004) and 33 items of epistemological beliefs questionnaire developed by Elder (2002). The items were rated on five-point Likert Scale (1=strongly disagree to 5=strongly agree). The approximate time duration to accomplish all the items is about 20 minutes.

Data Collection Procedure

The expert review was conducted for face validity and content validity from nine well-experienced experts in the field of Educational Psychology. Based on the advice and the suggestions of the experts, some items were revised and omitted to avoid overlapping and uncertainty of items. The instrumentation procedure was done from January to February in 2022. To validate the epistemological beliefs questionnaire, exploratory factor analysis and confirmatory factor analysis were performed.

Data Analysis and Research Findings

Exploratory Factor analysis

At first, exploratory factor analysis was used to discover dimensions of the questionnaire and the number of items. It was also used to assume that there is a smaller set of unobserved (latent) variables or constructs that underlie the variables that actually were observed or measured. Exploratory factor analysis was conducted with the sample of 436 school teachers (129 males and 307 females).

Kaiser-Meyer-Olkin (KMO) was applied to assess the appropriateness of using factor analysis on the data set and Bartlett's test was used to check the assumption of equal variances before proceeding an EFA analysis. If KMO coefficient was greater than 0.60 and the Bartlett's test was significant, it would be possible to run an EFA analysis according to Buyukozturk (2006) (as cited in Yuce & Onel, 2018). The results of KMO and Bartlett's test are shown in Table 1.

Table 1 KMO and Bartlett's Test of TOSRA

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.823
Bartlett's test of Sphericity	Approx. Chi-Square	9255.626
	df	2016
	Sig.	0.000

According to Table 1, the KMO value of items was 0.823 so that it was greater than 0.60 and the Bartlett's test was found to be significant (Chi-square= 9255.625, df= 2016, $p < 0.01$). This means that the variables were correlated highly enough to provide a reasonable basis for factor analysis. These tests of normality and sampling adequacy indicated that the correlation matrix was of acceptable quality. Thus, the data were suitable to run EFA.

The principal axis factor analysis with varimax rotation was conducted to assess the underlying structure for the items of Epistemological Beliefs Questionnaire. Five factors were requested and according to these factors, the items were designed to index five factors. The factors

are named as belief in knowledge by experts, belief in certainty knowledge, belief in reasoning knowledge, belief in developing knowledge and belief in effort knowledge. Table 2 displayed the items and factor loadings for the rotated factors.

Table 2 Factor Loading for Rotated Factors of Epistemological Beliefs Questionnaire

	Items	Factors					Communalities
		1	2	3	4	5	
1	I consult experts when I face problem in life.	0.893					.658
2	I am very aware that teachers/lecturers know a lot more than I do and so I agree with what they say is important rather than rely on my own judgment.	0.882					.535
3	How much a student learns in a school depends mostly on the quality of teachers in that school.	0.810					.521
4	An expert is someone who has a special gift in some area.	0.764					.536
5	I have no doubts in whatever the experts say.	0.763					.497
6	Some people are born good learners, others are just stuck with limited abilities.	0.729					.569
7	I do believe the facts in textbooks written by experts.	0.699					.411
8	Scientific knowledge is certain and does not change.		0.831				.662
9	If scientists try hard enough, they can find the truth to almost anything.		0.799				.470
10	The most important aspect of scientific work is precise measurement and careful work.		0.731				.579
11	I believe there should exist a teaching method applicable to all learning situations.		0.683				.523
12	All questions in science have on right answer.		0.619				.492

	Items	Factors					Communalities
		1	2	3	4	5	
13	Scientists will ultimately get to the truth if they keep searching for it.		0.587				.479
14	A good way to know if something is true is to do an experiment.			0.824			.533
15	A good way to get ideas in science is to wonder why things happen.			0.817			.510
16	What you have learned now will need to be adjusted due to time or other reasons.			0.790			.448
17	In science, there can be more than one way for scientists to test their ideas.			0.730			.437
18	Good answers are based on evidence from many different experiments.			0.712			.451
19	It is good to try experiments more than once to make sure of your findings.			0.652			.470
20	Knowledge is uncertain. It changes over time.				0.812		.539
21	The things we teach need to change along with the world.				0.783		.455
22	Knowledge that is considered correct today may change tomorrow.				0.731		.512
23	Forming your own ideas is more important than learning what textbooks say.				0.699		.462
24	Knowledge may be modified after a certain period of time.				0.634		.437
25	How much you get from your learning depends mostly on your effort.					0.711	.579
26	Everyone needs to learn how to learn.					0.652	.538

	Items	Factors					Communalities
		1	2	3	4	5	
27	If people can't understand something right away, they should keep on trying.					0.638	.512
28	Knowing how to learn is more important than the acquired facts.					0.583	.436
29	Learning something really well takes a long time or much effort.					0.578	.428
Eigenvalues % of Variance		21.422	12.427	7.553	5.661	5.475	52.538
Cumulative %		21.422	33.849	41.401	47.06	52.537	

By reviewing the rotating factor matrix, 34 items are not connected with any factors and some of them have low standard loadings so that they are removed. A five-factor construct consisting of 29 items explaining 52.538 % of total variance is obtained.

Table 3 Reliability Analysis of Epistemological Beliefs Questionnaire

Questionnaire/Factors	Number of Items	Cronbach's Alpha
Belief in Knowledge by Experts	7	0.824
Belief in Certainty Knowledge	6	0.801
Belief in Reasoning Knowledge	6	0.792
Belief in Developing Knowledge	5	0.764
Belief in Effort Knowledge	5	0.752
Epistemological Beliefs	29	0.841

According to Table 3, reliability coefficients of each factor for Epistemological Beliefs Questionnaire ranged from 0.752 to 0.824. These values of coefficients indicated that items Myanmar Version of Epistemological Beliefs Questionnaire was good to measure epistemological beliefs of school teachers according to Chan and Elliott (2004), reliability coefficients above 0.89 are generally considered as excellent, 0.80-0.89 were good and 0.7-0.79 were adequate. The reliability coefficient values were 0.752 and higher than 0.752.

Thus, Epistemological Beliefs Questionnaire was reliable to measure epistemological beliefs of school teachers in Basic Education in Myanmar.

Confirmatory Factor Analysis

Confirmatory factor analysis was used to establish five factors of the epistemological beliefs questionnaire of the school teachers. Confirmatory factor analysis is a multivariate statistical procedure that is used to test how well measured variable represent the number of factors. The data of fit of the models of the epistemological beliefs was checked in Table 4.

Table 4 Model of Fit Indices

Model	χ^2	<i>p</i> -value	CMIN/ DF	CFI	GFI	AGFI	RMSEA	TLI
Five factors 29- items Epistemological Beliefs Questionnaire	3723 .941	0.000	3.154	0.891	0.804	0.729	0.632	0.685

The data is assumed to be fit to the model if the CFI, GFI, AGFI and TLI values are higher than 0.09 (Hooper, Coughlan, & Mullen, 2008) and RMSEA value range from 0.05 to 0.1 (Bentler, 1990) and CMIN/Df (Chi-square/Df) was not exceeded 3. Based on the Table 4, CFI, GFI, AGFI and TLI did not reach adequate value. So, the model was re-specified. Hopper, Cough and Mullen (2008) expressed that it is a good to remove the items with low R² values (less than 0.4) from the analysis to remove the better model fit. In the present analysis, the R² values of two items were less than 0.4. Therefore, these items were removed from this study.

Moreover, according to Gerbing and Anderson (1984), another way of improving model fit is through the correlation of error terms. Then, after correlated error terms, the analysis was run to get a perfect model fit. The final model for epistemological beliefs with 27 items was in Table 5.

Table 5 Model Fit Indices of the Final Model

Model	χ^2	<i>p</i> - value	CMIN/ DF	CFI	GFI	AGFI	RMSEA	TLI
Five Factors 27- items Epistemological Beliefs Questionnaire	552. 532	0.000	3.362	0.943	0.917	0.908	0.053	0.923

Based on the data presented in Table 5, CFI, GFI, AGFI and TLI were greater than 0.9 and RSMEA ranged from 0.5 to 0.1 and chi-square was found significant at $p < 0.01$. Therefore, the model fit indices of epistemological beliefs with 27 items were obtained.

Validity and Reliability

Convergent validity

Convergent validity is also an evidence to test construct validity. To establish convergent validity, factor loading of the indicator variables, composite reliability (CR) and average variance extracted (AVE) should be used. AVE and CR values were computed by the formula using Microsoft Excel. Table 6 shows that the results of AVE and CR of epistemological beliefs questionnaire.

Table 6 Composite reliability (CR) and average variance extracted (AVE) of Epistemological Beliefs Questionnaire

Factors	CR	AVE
Belief in Knowledge by Experts	0.922	0.591
Belief in Certainty Knowledge	0.888	0.572
Belief in Reasoning Knowledge	0.859	0.539
Belief in Developing Knowledge	0.853	0.509
Belief in Effort Knowledge	0.775	0.503

The AVE values for the model range from 0.503 to 0.591. The CR values range from 0.775 to 0.922. According to Hunang et al (2013), AVE should be above 0.5 and CR should be 0.6 and above. According to Table 6, AVE values were above 0.5 and CR values were above 0.6. Then, the convergent validity was achieved for this construct. Therefore, the epistemological beliefs questionnaire can be assumed that it was a valid instrument to measure epistemological beliefs of the school teachers.

Discriminant Validity

Discriminant validity was used to show that the factor is actually differing from one another empirically. Discriminant validity was evaluated with square root of AVE with correlations of latent construct. The results were shown in Table 7.

Table 7 Square root of AVE with Correlations of Latent Factors of Epistemological Beliefs Questionnaire

Factors	Belief in Knowledge by Experts	Belief in Certainty Knowledge	Belief in Reasoning Knowledge	Belief in Developing Knowledge	Belief in Effort Knowledge
Belief in Knowledge by Experts	0.768				
Belief in Certainty Knowledge	0.63	0.756			
Belief in Reasoning Knowledge	0.59	0.52	0.734		
Belief in Developing Knowledge	0.53	0.49	0.45	0.713	
Belief in Effort Knowledge	0.52	0.48	0.46	0.48	0.709

Note: The diagonal numbers in bold letters are the square root of AVE values.

According to Table 7, all the square root of AVE values was greater than 0.5 and these values were greater than all the inter-latent factor correlations for all factors in the relevant rows

and columns. According to Fornell and Larcker (2011), square root of AVE should be above 0.5. Then, according to Hair et al (2013), square root of AVE values was greater than the inter-latent factor correlations. Thus, the results of the discriminant validity of Epistemological Beliefs Questionnaire were compatible with Fornell and Larcker (2011). According to Table 7, discriminant validity can be accepted for the measurement model and the discriminant validity between the factors.

Reliability

After the result of confirmatory factor analysis of EBQ, the final scale of EBQ consisted of five factors with items in this study. Table 8 showed that the number of items retained and described coefficient for each factor of EBQ.

Table 8 Reliability Coefficient for each factor of EBQ

Factors	Number of items	Cronbach' Alpha
Belief in Knowledge by Experts	6	0.828
Belief in Certainty Knowledge	5	0.801
Belief in Reasoning Knowledge	6	0.782
Belief in Developing Knowledge	5	0.769
Belief in Effort Knowledge	5	0.756
EBQ	27	0.891

Based on Table 8, reliability coefficient of each factor ranged from 0.756 to 0.828 and the reliability coefficient of EBQ was 0.891 Thus, EBQ was reliable to measure epistemological beliefs of the school teachers.

Discussion and Recommendations

The purpose of this study was to validate a questionnaire that measured school teachers' epistemological beliefs in Myanmar context. The research yielded a 27-item measure with five factors, and the results provided evidence for the validity and reliability. Teachers' epistemological beliefs influence their teaching methods and approaches, shape the classroom environment and the interactions between teachers and students, impact students' motivation and engagement, influence their instructional decisions and effectiveness.

By understanding and reflecting on these beliefs, teachers can align their teaching strategies with their beliefs about knowledge acquisition, leading to more effective and meaningful learning experiences for their students. It is believed that Epistemological Beliefs Questionnaire (EBQ) developed for the school teachers can be supportive for addressing strategies related to professional development, reflective practice, cultivating open-mindedness, collaborative learning communities, pedagogical strategies, inquiry-based approaches, ongoing support and mentoring.

By addressing teachers' epistemological beliefs through these strategies, educational institutions can foster a culture of continuous professional growth and create more effective and inclusive learning environments for students. It is certainly important that the teachers should have sophisticated beliefs in order to implement the effective teaching learning process in 21st century. These beliefs equip teachers with the necessary mindset and skills to create student-centered,

adaptable, and inclusive learning environments. They foster critical thinking, inquiry, and a commitment to lifelong learning, ultimately enhancing the educational experiences and outcomes for students.

Therefore, it can be said that the questionnaire is competent enough to measure the epistemological beliefs of school teachers. The questionnaire results can help identify teachers' epistemological orientations and inform instructional practices and interventions aimed at promoting more sophisticated epistemological beliefs and also provide guidance for administrators, curriculum developer and educational institutions.

Conclusion

The Epistemological Beliefs Questionnaire (EBQ) was identified and applied with items by using CFA. All the model fit indices (RMSEA= 0.053, CFI= 0.943, TLI= 0.923, p= 0.000) indicated a good fit between the measurement model tested and the data. The convergent validity of Epistemological Beliefs Questionnaire was indicated by high composite reliability values and acceptable AVE values. The discriminant validity of the model was also indicated by the AVE values. As for the internal consistency reliability, the values of Cronbach's alpha pointed out the satisfactory results for reliability of Epistemological Beliefs Questionnaire. In accordance with results, Epistemological Beliefs Questionnaire (EBQ) can be considered a valid and reliable tool for measuring school teachers' epistemological beliefs.

Acknowledgements

This endeavor would not have been possible without those who advocate and persuade for this study. First of all, we would like to extend our sincere to Dr. Kay Thwe Hlaing, Rector of Yangon University of Education for encouragement, administrative supports, official permission, and providing facilities throughout the research. Words cannot express our gratitude to Pro-Rectors of Yangon University of Education: Dr. Khin Khin Oo, Dr. Nyo Nyo Lwin and Dr. May Myat Thu for their grateful consent and guidance. Then, we would like to express our deepest appreciation to Dr. Khin Hnin Nwe (Professor and Head of Department of Educational Psychology, Yangon University of Education) and Dr. Su Myat Aye for their advice and timely suggestions. Furthermore, thanks should also go to the administrators for their permission to conduct this study. Lastly, we would be remiss in not mentioning school teachers from Schools in Rakhine State for their active contribution and collaboration for data collection.

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AN INVESTIGATION INTO DISCIPLINARY PROBLEMS OF HIGH SCHOOL STUDENTS

Aye Pomo Chit¹, May Cho Min²

Abstract

The prime purpose of this study was to explore the types, causes and actions of disciplinary problems among high school students. The survey research design was used. A total of 1099 students from eleven high schools and their teachers ($N=152$) was selected by using stratified sampling technique. Among the types of school disciplinary problems, 'talking without permission' stood first and the second one is 'teasing others' and the third rank is 'laziness'. The results revealed that male students' disciplinary problems were significantly higher than that of female students. In addition, the results indicated that there was no significant difference in students' disciplinary problem by age, while there was significant difference in students' disciplinary problem by district. Regarding the causes of disciplinary problems, peer-related factors rank as the main causes of school disciplinary problems. The findings revealed that male students were higher in school-related, peer-related and self-related factors than female in the causes of disciplinary problems. The results indicated that there was a significant difference in school-related factors by age, whereas there were significant differences in school-related factors and self-related factors by districts. Regarding the actions of school disciplinary problems, the actions such as sweeping the classroom and collecting rubbish in school compound rank as first and second. Moreover, the results indicated that male students were higher than female students in the actions of disciplinary problems. Furthermore, the results indicated that there were significant differences in the actions of high school students' disciplinary problems by age and district. The results suggest that actions of disciplinary problems in high schools are not uniform but differ among students and as perceived by teachers across districts. Finally, the results of this study offered important implications for school counselling for students with disciplinary problems.

Keywords: School Disciplines, Disciplinary Problems, High School Students

Introduction

Discipline is essential in all aspects and sectors of life because it allows a person to be structured and systematic in their job. Setting goals in life, responding positively to obstacles, and guarding against negative influences may all be accomplished with discipline. In teaching-learning process, it is one of the basic requirements to be a successful one. School discipline is an essential element in school administration. This is because discipline is a mode of life in accordance with laid down rules of the society to which all members must conform, and the violation of which are questionable and also disciplined (Noguera, 2001). School disciplines refer to the system of rules, punishment and behavioral strategies appropriate to the regulation and maintenance of order in schools. Its aim is to control the students' actions and behavior (Girma, 2016).

Discipline is more than keeping order and following rules. It is one of the measurable things to compare and differentiate one with another in our society. It can spotlight humans' value. It shapes one's life as needed and may be in various forms. In fact, the best kind of discipline is self-discipline which is based on a sense of responsibility, consideration for others and self-respect. Before a pupil, however, can feel responsible for his own behaviors, he must first develop a sense of belonging. Only when a pupil feels that he is a part of the class and of the school will develop a sense of responsibility. So, the starting point of good discipline in schools is a positive teacher-

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pupil relationship in which there is mutual respect and a sense of shared responsibility (Tan & Yuanshan, 1999).

The aim of discipline is to develop responsibility and self-control skills of the students by supporting their mental, emotional and social development (Humphreys, 1999; Weber, 2003; Yavuzer, 1986, as cited in Sadik, 2018). The management of school discipline is the duty of principals, teachers, parents and students, respectively. There are two approaches to discipline in which methods that have a potential to cause pain or discomfort punitive and methods that do not cause physical discomfort preventive. Preventive types of discipline focus on establishing a set of standards of behavior whereas the punitive approach is mainly characterized by rules, extrinsic control, inspection and policing and is intended to punish to discourage further infringement of a rule (Okumbe, 1998, as cited in Girma, 2016).

Disciplinary problems are those acts which disturb or interfere with any classroom or school procedure and throw off balance of the control aspect of the school (Rosen, 2004). Unfortunately, there has been no satisfactory explanation of the need to consider disciplinary problems and intervention program in these schools to provide a positive discipline climate. Therefore, this study aimed at investigating disciplinary problems of high school students in Myanmar.

Purposes of the Study

The main purpose of the study is to explore disciplinary problems of high school students.

The specific objectives of the study are

1. To investigate disciplinary problems of high school students
2. To examine disciplinary problems of high school students by gender, age, and district
3. To diagnose the causes of disciplinary problems of high school students
4. To examine the causes of disciplinary problems of high school students by gender, age, and district
5. To examine the types of disciplinary actions if students broke school disciplines, and
6. To explore the types of disciplinary actions if students broke school disciplines by gender, age, and district.

Definitions of Key Terms

School Disciplines. School disciplines refer to the system of rules, punishment and behavioral strategies appropriate to the regulation and maintenance of order in schools. Its aim is to control the students' actions and behavior (Girma, 2016).

School Disciplinary Problems. Disciplinary problems are those acts which disturb or interfere with any classroom or school procedure and throw off balance of the control aspect of the school (Rosen, 2004).

Review of Related Literature

Types of Disciplinary Problems of High School Students

Disciplinary problems may be said as the first important things to control and balance the school, the grade and the classroom. If types of students' disciplinary problems should be aware as earlier, later problematic consequences will be reduced.

Rosen (2004) classifies three categories in his case study. Minor misbehaviors such as noisiness, wondering, and daydreaming inattentiveness are the first category. The second category includes behaviors which lead to more serious arguing, fussing, acting boisterously, failing to respond to a group directive and etc. The third category was organized by behaviors that never tolerated, stealing intentionally, hurting and fighting and destroying property, vandalism.

Tan and Yuanshan (1999) studied that behavioral problems were encountered by teachers to get a picture of the types of discipline problems occurring in the schools. Twenty discipline problems were ranked in the study but the most common problems were telling lies, late for class/school, disruptive behavior, vandalism, using abusive language, truancy, theft and bullying. According to the age groups, nine areas of behavioral problems, disruptive behavior, cheating, vandalism, smoking, abusive languages, theft, bullying, gangsterism and suicidal attempt were more likely to occur in secondary schools than in primary schools (Tan & Yuanshan, 1999).

In Thailand, Hayeehasa (2018) studied discipline problems among secondary school students. In the study, disciplinary problems are ranked as a major problem among students in secondary schools in Thailand. The findings demonstrated that the level of discipline problems among students was quite high, especially with regard to the problems of late comers. Farmer et al. (1999, 2011) highlight that discipline problems can be observed at any level of education and cause stress for the educators. The reason is that these problems are very common and that the learning setting gets disturbed through undisciplined students (as cited in Sadik, 2018). Guhao et al. (2020) identify six themes that emerged as experienced by teachers in imposing classroom discipline; namely, harassment and intimidation; student defiance and disobedience; teachers' risk of litigation; parental assent; favorable learning environment; and appreciation.

A study in Indonesia, Irawati (2020) describes the misbehavior problem that frequently happened is consisted of disrespecting the teachers, sleeping, daydreaming, and saying rude words. Like these, several high schools in Myanmar are facing with disciplinary problems of students when every record of school disciplines is taken into account as evidence.

Causes of Disciplinary Problems of High School Students

To overcome any kind of problems, having a clear understanding of underlying reasons behind these problems is essential (Birhan, 2010, as cited in Girma, 2016). Factors that cause disciplinary problems vary on individuals. Mostly, the causes of disciplinary problem could be related to school environments, family, and peers.

School-related factors. How schools organized may influence students' behavior. The way students are grouped, graded and interact with teachers affects student behavior. Most approaches to student discipline in schools emphasize social control. The amount of disconnect between students' lives within the outside of school will reduce the potential for violence. Some school environment characteristics have been linked with disorderly schools and problem behavior, including punitive attitude of teachers, rules that are perceived as unfair, unclear or unenforced,

inconsistence response to student behavior, disagreement among teachers and administrators about school rules and appropriate responses to misbehavior (Rosen, 2004). Similarly, school related factors have been associated with learners' attitudes, educators' attitudes and the principal's authority and leadership (Jinot, 2018).

Student misbehaviors may also be the result of normal reaction to deficiencies in the school and to teachers as directors of the educational enterprise. The appropriate and descriptive behavior among students is socially constructed within a complex pattern of interactions in which both teachers and learners play an active role, influencing each other with their actions and interpretations (Thornberg, 2008).

Family-related factors. Family is the first institution which shapes a learner's behavior at school (Noum, 2015). In similarity, the root causes of learner misbehavior at school are found in the home (Oloyede & Adesina, 2013). Home is the first school in everyone's life because children started learning from elders at home including beliefs, customs, attitude and values. Thus, family influences students' disciplinary problems in school. But the way that education is organized and transmitted differ from what goes on in homes, because it is informal largely unassessed and carried out with varying degree of skills and intentions (Chazzan, 2000).

Peer-related factors. When children come to school their early life may influence their social relation with other students as peer and adult the new social environment so in shaping children behavior in desirable manner (Girma, 2016).

One of the most distinct causes of students' disciplinary problems is peer related factor. Peer relations occupy most of their time and they are nearly same-aged and same-matured. According to Hartup (2006), children receive feedback about their abilities form their peer group. Children evaluate what they do in terms of whether it is better than, as good as or worse than what other children do. It is hard to do this in the family because siblings are usually older or younger.

Actions of Disciplinary Problems of High School Students

Discipline is usually perceived as control since traditional disciplinary applications are usually based on punishment and teachers focus on being a dominant character holding the power. The teachers mostly tend to warn threat and punish students when they do not behave as expected or when disturbing the teaching process (Sadik, 2018).

Corporal punishment in schools has long been abolished in countries such as the United States, Canada, Australia, and Hong Kong (Ester & Yuanshan, 1999). With respect to discipline actions, school suspension is one of the most widely used, yet research continues to demonstrate an empirical link between receipt of suspension and poor student outcomes, including increased risk of dropping out of school.

The children's negative perception about discipline derives from the methods used to deal with discipline problems. Discipline in the classroom is provided through the classroom rules and the teachers usually apply warning, shouting/scolding and punishments which may be in the form of physical violence, sending the student to the school administration and giving minus marks for misbehavior. School rules, checking the students at the entrance, discipline rules, and disciplinary penalties are the most used in school discipline.

The disciplinary methods used to solve the disciplinary cases in schools were corporal punishment and counseling was minimally used in schools even though corporal punishment

behavior management methods have been shown to be ineffective and, in some cases, harmful to students. Verbal reprimands, persistent nagging of students about their behaviors may be effective in the short run but they do not work and students suffer from violence in the long run (Devito, 2000, as cited in Girma, 2016).

Method

The cross-sectional survey was used in this study.

Participants of the Study

By using the stratified sampling technique, a total of 1099 high school students ($M_{age} = 16.81$, $SD_{age} = 0.74$, 16-20 years old, 53.41% female) from eleven schools in Yangon Region was selected as participants of the study. Moreover, all senior teachers ($N=152$, 97.7% female) from these schools participated in this study (see Table 1).

Table 1 Characteristics of Participants for the Study

District	Township	School	Students			Teachers		
			Gender		Total	Gender		Total
			Male	Female		Male	Female	
Kamayut	Kamayut	School 1	46	50	96	1	24	25
Mayangone	Mayangone	School 2	47	55	102	-	23	23
	Hlaing	School 3	40	28	68	-	5	5
Ahlone	Ahlone	School 4	44	57	101	1	11	12
	Sanchaung	School 5	-	99	99	-	11	11
Kyauttatar	Latha	School 6	62	27	89	-	6	6
	Dagon	School 7	76	49	125	-	11	11
Insein	Insein	School 8	39	65	104	-	27	27
Botataung	Tharketta	School 9	61	66	127	-	13	13
	Dawbon	School 10	51	42	93	-	9	9
	Botataung	School 11	46	49	95	1	9	10
Total			512	587	1099	3	149	152

Measures

Types of Disciplinary Problems Questionnaire. To assess students' disciplinary problems, the Types of Disciplinary Problems Questionnaire was used. This measure consists of 59 items. Each item was assessed with a 5-point Likert scale (1=strongly disagree to 5=strongly agree). The Cronbach's alpha value in this study was 0.97.

Causes of Disciplinary Problems Questionnaire. The Causes of Disciplinary Problems Questionnaire (Getachew, Tekle, & Kune, 2020) was used in this study. This measure consists of four subscales: school-related factors, family-related factors, peer-related factors and self-related factors. Thus, measure includes 48

items and the response type of the 5-point Likert scale (1=strongly disagree to 5=strongly agree). The Cronbach's alpha value in this study was 0.95.

Actions of Disciplinary Problems Questionnaire. The Actions of Disciplinary Problems Questionnaire (Erena, 2015; Temitayo, Nayaya & Lukman, 2013; Jouhar & Mumthas, 2014) was used in this study. It consists of 59 items. The Cronbach's alpha value in this study was 0.96.

Instrumentation and Procedure

All the measures used in this study were adapted to Myanmar language version. Then, expert review was conducted for face validity and content validity of the instruments. Next, the questionnaires were modified according to their suggestions and recommendations. And then, a pilot study was conducted to test whether the wording of items, statements and instructions had their clarity in Myanmar language version and were appropriate to high school students and senior assistant teachers. The Cronbach's alphas for all the measures in the pilot study were above 0.9, hence having satisfactory reliability.

Results

High School Students' Disciplinary Problems

The mean and standard deviation of high school students' disciplinary problems was 111.27 and 27.95. Both students and teachers generally perceive similar levels of disciplinary problems, with some variations in the mean scores (see Table 2). Talking without permission, teasing others, and laziness were among the most frequently observed issues. On the other hand, fighting with other students was the least commonly reported problem out of the top ten disciplinary problems. While students and teachers tend to align in their perceptions of most disciplinary problems, some differences exist, as reflected in the varying mean scores and standard deviations. For instance, teachers tend to rate 'daydreaming in the class' and 'sleeping in class' as more problematic compared to how students perceive these issues. Conversely, students find 'being late' and 'frequent absenteeism' slightly more problematic than teachers do.

Table 2 High School Students' Common Disciplinary Problems by Students and Teachers

	Types of Disciplinary Problems	Students		Teachers	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1.	Talking without permission	2.85	.80	3.05	.41
2.	Teasing others	2.82	.88	3.03	.37
3.	Laziness	2.77	.92	2.94	.48
4.	Daydreaming in class	2.66	.98	2.74	.60
5.	Copying homework	2.60	.93	2.96	.51
6.	Inattentiveness during the class	2.55	.87	2.99	.41
7.	Failing to do class assignments	2.52	.97	3.05	.37
8.	Failing to submit homework on time	2.49	.96	2.99	.38
9.	Sleeping in class	2.44	1.00	2.76	.60

	Types of Disciplinary Problems	Students		Teachers	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
10.	Being late	2.41	.98	2.99	.40
11.	Frequent absenteeism	2.22	.94	2.94	.50
12.	Fighting with other students	2.00	1.01	2.96	.45

Level of High School Students’ Disciplinary Problems

Based on descriptive analysis, high school students are grouped into three groups in term of disciplinary problems. 15.6% high school students with scores one standard deviation above the sample mean were identified as high group; 67.1% high school students with scores between (+1) and (-1) standard deviation from the sample mean were grouped into moderate group; and the rest high school students 17.3% who scored one standard deviation lower than the sample mean were considered as low group (Figure 1).

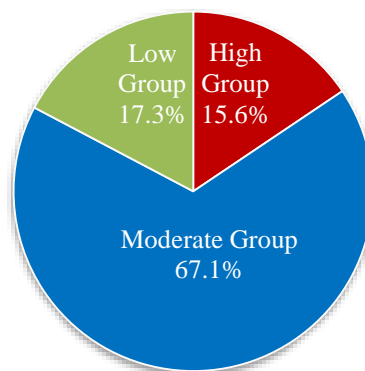


Figure 1 Three Different Groups of High School Students’ Disciplinary Problems

Comparison of High School Students’ Disciplinary Problems by Gender

To find out whether there were gender differences in students’ disciplinary problems, descriptive statistics and independent samples *t*-test was conducted (see Table 3).

Table 3 Means, Standard Deviation, and Results of Independent Samples *t*-test of High School Students’ Disciplinary Problems by Gender

Variable	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Disciplinary Problems	Male	512	117.03	29.07	6.486***	1097	.000
	Female	587	106.26	25.94			

Note. *** $p < 0.001$

The independent samples *t*-test indicated that the mean score of male students was significantly higher than that of female students, $t(1097) = 6.486, p < .001$ (see Table 3).

Comparison of High School Students’ Disciplinary Problems by Age

To make more detailed information on the difference of students’ disciplinary problems by age, one-way Analysis of Variance (ANOVA) was conducted (see Table 4). ANOVA results indicated that there was no significant difference in students’ disciplinary problems by age, $F(2, 1096) = 2.31, p = .100$.

Table 4 Means, Standard Deviation, and ANOVA Results of High School Students’ Disciplinary Problems by Age

Variable	Age	N	M	SD	F	p
Disciplinary Problems	$x \leq 16$	407	109.62	28.80	2.31	.100
	$17 \leq x \leq 18$	509	113.22	26.92		
	$x > 18$	183	109.53	28.65		

Comparison of High School Students’ Disciplinary Problems by District

To make more detailed information on the difference of high school students’ disciplinary problems by district, one-way Analysis of Variance (ANOVA) was conducted (see Table 5). ANOVA results indicated that there was significant difference in students’ disciplinary problems by District, $F(5, 1093) = 5.44, p < 0.001$.

Table 5 Means, Standard Deviations, and ANOVA Results of High School Students’ Disciplinary Problems by District (Students)

Variable	District	N	M	SD	F	p
Disciplinary Problems	District 1	96	120.52	32.67	5.44***	.000
	District 2	200	106.66	24.80		
	District 3	170	108.10	23.44		
	District 4	214	116.45	28.26		
	District 5	314	110.41	30.66		
	District 6	105	108.77	23.16		

Note. *** $p < 0.001$

Table 6 Results of Tukey HSD Multiple Comparisons for High School Students’ Disciplinary Problems by District

(I) District	(J) District	Mean Difference (I-J)	p
District 1	District 2	13.866**	.001
	District 3	12.421**	.006
	District 5	10.113*	.022
	District 6	11.752*	.033
District 2	District 4	-9.798**	.004
District 3	District 4	-8.353*	.039

Note. * $p < 0.05$, ** $p < 0.01$

To obtain more detailed information for District, post hoc test was carried out by Tukey HSD multiple comparison procedure for District 1, District 2, District 3, District 4, District 5, and District 6 (see Table 6). Tukey HSD test found that the mean score of high school students from District 1 was significantly higher in disciplinary problems than that of high school students from District 2, District 3, District 5 and District 6, whereas the mean score of high school students from District 4 was significantly higher in disciplinary problems than that of high school students from District 2 and District 3.

To make more detailed information on the difference of teachers’ perception of high school students’ disciplinary problems by district, one-way Analysis of Variance (ANOVA) was conducted (see Table 7). ANOVA results indicated that there was no significant difference in teachers’ perception for high school students’ disciplinary problems by district, $F(5, 146) = 1.551$, $p = .178$.

Table 7 Means, Standard Deviations, and ANOVA Results for Teachers’ Perception of High School Students’ Disciplinary Problems by District

Variable	District	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
Disciplinary Problems	District 1	25	144.64	20.03	1.551	.178
	District 2	23	152.39	22.88		
	District 3	28	155.04	16.72		
	District 4	17	156.94	12.27		
	District 5	32	150.97	30.07		
	District 6	27	160.37	20.61		

Causes of High School Students’ Disciplinary Problems

The causes of high school students’ disciplinary problems include four subscales: school-related factors, family-related factors, self-related factors, and peer-related factors. The results indicated that peer-related factors have the highest mean percentage, followed by school-related factors, self-related factors and family-related factors (see Table 8).

Table 8 Mean and Standard Deviation for Sub-scales of Causes of High School Students’ Disciplinary Problems

Variable	<i>M</i>	<i>SD</i>	Mean Percentage	Minimum	Maximum
School-related Factors	50.88	14.01	53 %	24	96
Family-related Factors	23.47	7.14	48.90 %	12	48
Self-related Factors	14.81	4.67	52.89 %	7	28
Peer-related Factors	11.17	3.32	55.85 %	5	20

Comparison for Causes of High School Students’ Disciplinary Problems by Gender

Table 9 Means, Standard Deviation, and Results of Independent Samples *t*-test for Causes of High School Students' Disciplinary Problems by Gender

Variable	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
School-related Factors	Male	512	51.30	14.800	.928*	1097	.032
	Female	587	50.51	13.280			
Family-related Factors	Male	512	23.55	7.404	.353	1097	.306
	Female	587	23.40	6.908			
Peer-related Factors	Male	512	11.69	3.533	4.890**	1097	.006
	Female	587	10.71	3.055			
Self-related Factors	Male	512	15.23	5.089	2.855***	1097	.000
	Female	587	14.43	4.236			

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

To find out whether there were gender differences in causes of students' disciplinary problems, descriptive statistics and independent samples *t*-test was conducted (see Table 9). The independent samples *t*-test indicated that the mean score of male students was significantly higher than that of female students in school-related factors, $t(1097) = .928$, $p = .032$, self-related factors, $t(1097) = 4.890$, $p = .006$, and peer-related factors, $t(1097) = 2.855$, $p < .001$ (see Table 9). These findings highlight the importance of addressing gender-specific concerns when addressing high school students' disciplinary issues.

Comparison for Causes of High School Students' Disciplinary Problems by Age

To make more detailed information on the difference for causes of students' disciplinary problems by age, one-way Analysis of Variance (ANOVA) was conducted (see Table 10). ANOVA results indicated that there was no significant difference in family-related factors, self-related factors, and peer-related factors by age, while there was significant age difference in school-related factors, $F(3, 1094) = 4.885$, $p = .008$.

Table 10 Means, Standard Deviation, and ANOVA Results for Causes of High School Students' Disciplinary Problems by Age

Variables	Age	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
School-related Factors	$x \leq 16$	407	49.25	14.43	4.885**	.008
	$17 \leq x \leq 18$	509	52.15	13.54		
	$x > 18$	183	50.99	14.04		
Family-related Factors	$x \leq 16$	407	22.96	7.42	2.194	.112
	$17 \leq x \leq 18$	509	23.94	7.03		
	$x > 18$	183	23.31	6.78		

Variables	Age	N	M	SD	F	p
Peer-related Factors	$x \leq 16$	407	11.04	3.34	1.895	.151
	$17 \leq x \leq 18$	509	11.37	3.30		
	$x > 18$	183	10.89	3.34		
Self-related Factors	$x \leq 16$	407	14.70	4.80	.471	.625
	$17 \leq x \leq 18$	509	14.95	4.46		
	$x > 18$	183	14.64	4.95		

Note. ** $p < 0.01$

Comparison for Causes of High School Students' Disciplinary Problems by District

To make more detailed information on the difference for causes of students' disciplinary problems by district, one-way Analysis of Variance (ANOVA) was conducted (see Table 11). ANOVA results indicated that there was significant difference in school-related factors, $F(5, 1093) = 3.463, p = 0.004$, and self-related factors by district, $F(5, 1093) = 5.906, p < 0.001$.

To obtain more detailed information for district, post hoc test was carried out by Tukey HSD multiple comparison procedure for District 1, District 2, District 3, District 4, District 5, and District 6 (see Table 12). Tukey HSD test stated that self-related factors from District 1 were higher than District 2 and 3, while self-related factors from District 1 were lower than District 4 and 6.

Table 11 Means, Standard Deviations, and ANOVA Results for Causes of High School Students' Disciplinary Problems by Districts (Students)

Variable	District	N	M	SD	F	p
School-related Factors	District 1	96	50.24	13.22	3.463**	.004
	District 2	200	48.52	13.48		
	District 3	170	52.59	13.41		
	District 4	214	52.40	13.82		
	District 5	315	51.66	15.03		
	District 6	104	47.75	12.95		
Family-related Factors	District 1	96	23.29	8.48	1.211	.302
	District 2	200	22.44	6.08		
	District 3	170	24.02	6.47		
	District 4	214	23.60	6.65		
	District 5	315	23.81	7.86		
	District 6	104	23.44	7.36		

Variable	District	N	M	SD	F	p
Peer-related Factors	District 1	96	10.82	3.47	1.607	.155
	District 2	200	11.03	3.02		
	District 3	170	11.28	3.21		
	District 4	214	11.69	3.38		
	District 5	315	10.97	3.57		
	District 6	104	11.09	2.94		
Self-related Factors	District 1	96	15.56	5.05	5.906***	.000
	District 2	200	13.64	4.10		
	District 3	170	15.22	4.19		
	District 4	214	15.57	4.82		
	District 5	315	14.96	4.95		
	District 6	104	13.63	4.29		

Note. ** $p < 0.01$, *** $p < 0.001$

Table 12 Results of Tukey HSD Multiple Comparisons for Causes of Students’ Disciplinary Problems by Districts (Students)

Variables	(I) District	(J) District	Mean Difference (I-J)	p
School-related Factors	District 2	District 3	-4.079*	.047
		District 4	-3.882*	.043
Self-related Factors	District 1	District 2	3.882*	.053
		District 3	1.578*	.014
		District 4	-1.925***	.000
		District 6	-1.928*	.038
	District 2	District 3	-1.578*	.014
		District 4	-1.925***	.000
		District 5	-1.322*	.020
	District 4	District 6	-1.931**	.006

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.01$

To make more detailed information on the difference for teachers’ perception related to causes of students’ disciplinary problems by district, one-way Analysis of Variance (ANOVA) was conducted (see Table 13). ANOVA results indicated that there was no significant difference in school-related factors, family-related factors, self-related factors, and peer-related factors.

Table 13 Means, Standard Deviations, and ANOVA Results for Causes of High School Students’ Disciplinary Problems by District (Teachers)

Variable	District	N	M	SD	F	p
School-related Factors	District 1	25	53.40	8.13	1.662	.147
	District 2	23	53.17	9.86		
	District 3	28	54.57	5.55		
	District 4	17	60.12	6.20		
	District 5	32	55.63	10.13		
	District 6	27	56.00	9.88		
Family-related Factors	District 1	25	32.00	6.91	.923	.468
	District 2	23	31.57	7.63		
	District 3	28	34.04	4.40		
	District 4	17	35.12	5.04		
	District 5	32	32.75	7.18		
	District 6	27	32.41	6.19		
Peer-related Factors	District 1	25	13.32	2.81	1.300	.267
	District 2	23	12.57	3.04		
	District 3	28	14.04	1.93		
	District 4	17	14.29	2.54		
	District 5	32	13.91	2.76		
	District 6	27	13.19	2.96		
Self-related Factors	District 1	25	18.28	3.68	.761	.579
	District 2	23	17.43	4.27		
	District 3	28	18.68	2.28		
	District 4	17	19.47	3.43		
	District 5	32	18.78	3.80		
	District 6	27	18.30	3.55		

Actions of Students’ Disciplinary Problems

The mean and standard deviation for actions of high school students’ disciplinary problems were 132.11 and 29.03. The result provides insights into the common actions of disciplinary problems in a high school environment, as perceived by both students and teachers (see Table 14).

Table 14 High School Students' Common Actions of Disciplinary Problems by Students and Teachers

	Actions of Disciplinary Problems	Students		Teachers	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1	Sweeping classroom	3.06	.831	2.94	.505
2	Collecting rubbish in school compound	2.92	.860	3.00	.446
3	Loving	2.74	.879	2.97	.381
4	Giving blackboard work	2.72	.955	2.71	.616
5	Pricking ears	2.70	.883	3.00	.326
6	Teamwork among educators	2.68	.861	3.03	.303
7	More commitment on the part	2.67	.850	2.91	.363
8	Collaboration with the students	2.67	.822	3.01	.282
9	Using reward (successful classroom)	2.64	.984	2.54	.727
10	Assign leadership	2.59	.913	2.95	.353
11	Provide advice	2.27	.969	3.12	.450
12	Dialogue/Discuss with parents	2.13	1.03	3.08	.453
13	Providing counseling service	2.20	.971	3.07	.523
14	Through education	2.53	.926	3.01	.270
15	Cooperation between the school and families	2.42	.924	2.99	.270
16	Making the guidance counseling service work actively	2.35	.916	2.99	.438

Comparison of Actions of High School Students' Disciplinary Problems by Gender

To find out whether there were gender differences in the actions of students' disciplinary problems, descriptive statistics and independent samples *t*-test was conducted (see Table 15). The independent samples *t*-test indicated that the mean score of male students was significantly higher than that of female students in the actions of students' disciplinary problems, $t(1097) = 4.294$, $p < .001$ (see Table 15).

Table 15 Means, Standard Deviation, and Results of Independent Samples *t*-test of Actions of High School Students' Disciplinary Problems by Gender

Variables	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Actions of Disciplinary Problems	Male	512	136.11	32.08	4.294***	1097	.000
	Female	587	128.63	25.60			

Note. *** $p < 0.001$

Comparison of Actions of High School Students’ Disciplinary Problems by Age

To make more detailed information on the difference of the actions of students’ disciplinary problems by age, one-way Analysis of Variance (ANOVA) was conducted (see Table 16). ANOVA results indicated that there was significant difference for actions of students’ disciplinary problems by age, $F(2, 1096) = 6.548, p = 0.001$.

Table 16 Means, Standard Deviation, and ANOVA Results of Actions of High School Students’ Disciplinary Problems by Age

Variable	Age	N	M	SD	F	p
Actions of Disciplinary Problems	$x \leq 16$	406	128.05	29.96	6.548**	.001
	$17 \leq x \leq 18$	509	134.90	28.61		
	$x > 18$	184	133.37	27.14		

Note. ** $p < 0.01$

Comparison of Actions of High School Students’ Disciplinary Problems by District

To make more detailed information on the difference for the actions of students’ disciplinary problems by district, one-way Analysis of Variance (ANOVA) was conducted (see Table 17). ANOVA results indicated that there was significant difference in students’ disciplinary problems by age, $F(4, 1094) = 2.882, p = .014$.

Table 17 Means, Standard Deviation, and ANOVA Results for Actions of High School Students’ Disciplinary Problems by Districts (Students)

Variable	District	N	M	SD	F	p
Actions of Disciplinary Problems	District 1	96	130.65	32.81	2.882*	.014
	District 2	200	128.03	25.68		
	District 3	170	136.66	28.74		
	District 4	213	134.82	27.40		
	District 5	315	132.71	31.22		
	District 6	104	126.48	26.77		

Note. * $p < 0.05$

To obtain more detailed information for district, post hoc test was carried out by Tukey HSD multiple comparison procedure for District 1, District 2, District 3, District 4, District 5, and District 6 (see Table 18). Tukey HSD test stated that actions of disciplinary problems from District 2 were lower than District 3.

Table 18 Results of Tukey HSD Multiple Comparisons for Actions of Students’ Disciplinary Problems by Districts (Students)

Variable	(I) District	(J) District	Mean Difference (I-J)	p
Actions of Disciplinary Problems	District 2	District 3	-8.635*	.049

Note. * $p < 0.05$

To make more detailed information on the difference for teachers' perception related to the actions of students' disciplinary problems by district, one-way Analysis of Variance (ANOVA) was conducted (see Table 19). ANOVA results indicated that there was significant difference for teachers' perception related to the actions of students' disciplinary problems by district, $F(5, 1093) = 4.009, p = .002$.

Table 19 Means, Standard Deviations, and ANOVA Results for Teachers' Perception Related to Actions of High School Students' Disciplinary Problems by District

Variable	District	N	M	SD	F	p
Actions of Disciplinary Problems	District 1	25	145.80	17.52	4.009**	.002
	District 2	23	164.09	12.45		
	District 3	28	151.14	12.68		
	District 4	17	156.65	12.49		
	District 5	32	148.90	19.90		
	District 6	27	154.44	16.21		

Note. ** $p < 0.01$

To obtain more detailed information for district, post hoc test was carried out by Tukey HSD multiple comparison procedure for District 1, District 2, District 3, District 4, District 5, and District 6 (see Table 20). Tukey HSD test stated that teachers' perception related to the actions of disciplinary problems from District 1 were lower than District 2, while teachers' perception related to the actions of disciplinary problems from District 2 were higher than District 3 and 5.

Table 20 Results of Tukey HSD Multiple Comparisons for Teachers' Perception Related to Actions of Students' Disciplinary Problems by Districts

Variable	(I) District	(J) District	Mean Difference (I-J)	p
Actions of Disciplinary Problems	District 1	District 2	-18.287**	.001
	District 2	District 3	12.944*	.048
		District 5	15.184**	.008

Note. * $p < 0.05$, ** $p < 0.01$

Discussion

The purpose of this study was to explore the types, causes and actions of disciplinary problems among high school students. A total of 1099 students from eleven high schools and their teachers ($N=152$) participated in this study. Among the types of school disciplinary problems, "talking without permission" was the first common disciplinary problem and the second one was "teasing others" and the third rank was "laziness". The results of this study was not consistent with previous studies (e.g., Ma Htay Khin, 2006) indicating lateness to school was the first school disciplinary problem, followed by exercise not completed and littering, absence from school without official leave, not arriving on time, and gambling. The result of independent samples t -test revealed that male students' disciplinary problems were significantly higher than that of female students. ANOVA results stated that there was no significant difference of high school

students' disciplinary problem by age, while there was significant difference of students' disciplinary problem by district. Therefore, the findings can guide targeted interventions and support strategies for students facing disciplinary challenges, taking into account gender and geographic variations.

Regarding the causes of disciplinary problems, this study investigated the causes of high school students' disciplinary problems across four categories: school-related, family-related, self-related, and peer-related factors. Peer-related factors ranked as the main causes of disciplinary problems among high school students. The findings revealed that male students were higher in school-related, peer-related and self-related factors than female in the causes of disciplinary problems. Results indicated that there was significant difference of school-related factors by age, whereas there was significant differences of school-related factors and self-related factors by districts. To effectively address these issues, it is crucial to consider age-related factors, district-specific differences, and the unique perspectives of both students and teachers. Further research could delve deeper into the underlying causes and develop targeted strategies for each district to improve the overall disciplinary environment in high schools.

Regarding the actions of school disciplinary problems, the actions such as sweeping the classroom and collecting rubbish in school compound rank as first and second. The results indicated that male students were higher than female students in the actions of disciplinary problems. Moreover, ANOVA results indicated that there were significant differences in the actions of high school students' disciplinary problems by age and district. This study highlights the existence of district-related disparities in high school students' disciplinary problems, both from the students' and teachers' perspectives. Therefore, the result suggests that actions of disciplinary problems in high schools are not uniform but differ both among students and as perceived by teachers across districts. Understanding these variations is crucial for tailoring interventions and strategies to address disciplinary issues effectively in each district.

To sum up, the results of this study offered important implications for school counselling for students with disciplinary problems. The findings of this study will lead to the implementation of the effective school counseling practices.

Limitations and Future Research

This study was conducted with a cross-sectional study design, so longitudinal studies should be employed to investigate updated school disciplinary problems. Future research should be conducted with the remaining educational settings. Moreover, participants comprised only high school students. Additionally, more empirical studies among other populations such as primary and middle school students should be studied to elucidate the importance of addressing of school disciplinary problems for implementing school counselling practices.

Acknowledgements

We would like to express our heartfelt appreciation to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-rector, Yangon University of Education), and Dr. Nyo Nyo Lwin (Pro-rector, Yangon University of Education) for allowing us to conduct this research. And we would like to thank Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her support. Then, we want to express our heartfelt gratitude to everyone who took part in this study.

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RELATIONSHIP BETWEEN VISUAL MEMORY AND ACADEMIC ACHIEVEMENT OF CHILDREN

Shwe Sin Myint¹, May Cho Min²

Abstract

The main purposes of this study are to develop the Visual Memory Test, to investigate the level of children's visual memory, to compare children's visual memory by gender and regions, and to explore the relationship between visual memory and academic achievement of children. A total of 548 Grade 6 students were selected by using stratified sampling technique. Visual Memory Test developed by the researchers using IRT was used to measure visual memory of children. Then, Myanmar Achievement Test, English Achievement Test, Mathematics Achievement Test, Science Achievement Test, History Achievement Test and Geography Achievement Test developed by the researcher were used to examine academic achievement of children. The findings indicated that female students have higher level of visual memory than male students. Then, the ANOVA results revealed that there was a significant difference in visual memory by regions. Moreover, the findings stated that visual memory of children was positively correlated with their academic achievement. Furthermore, the results indicated that visual memory was a predictor of academic achievement, especially achievement in Myanmar, English, Mathematics and Science subjects. Therefore, it can be concluded that children with higher visual memory will perform better in their academic achievement.

Keywords: Visual Memory, Academic Achievement, Children

Introduction

Memory is a required part of learning. Children spend a majority of their time in school in pursuit of learning and children with poor memories are known to struggle in school. The capacity to process, store, retain, and subsequently recall information is crucial to support learning. It seems likely, therefore, that children with poor memory functioning will struggle to succeed in basic learning activities (Mammarella & Cornoldi, 2005). Academic-based processes rely on the formation and use of representations, a complex process that requires many cognitive skills, including memory. Visual memory and learning are of fundamental importance for normal classroom learning (Aylward, 2002; Bull, Espy, & Wiebe, 2008; Klin & Jones, 2006; Mitchell, 2006; Packiam, Banner, & Smith, 2010; Rourke, 1988, 1993, 1995). Many aspects of visual cognition are sensitive to learning (Green & Bavelier, 2003). Children who have not developed their visual memory skills cannot readily reproduce a sequence of visual stimuli. They frequently experience difficulty in remembering the overall visual appearance of words or the letter sequence of words for reading and spelling (Addie Cusimano, 2001).

In many countries tests of memory in children have been developed for use in educational and clinical contexts, for example, in aiding diagnoses of several learning difficulties. It is possible that more frequent and comprehensive assessment of memory in schools is warranted, since several studies have linked memory performance to academic or achievement performance in children (Gathercole & Baddeley, 1993). In school settings, memory assessment could potentially serve as a useful tool for teachers and school professionals working with children. Memory assessment results could inform teachers and other educational staff of techniques and strategies that could best assist a child in school.

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For children, deficits in the particular system of visual memory could potentially have adverse effects on academic performance by impairing their ability to match symbols, discriminate between different symbols, learn new symbols, and recognize and recall important symbols such as numbers and letters that are used in school learning tasks (Bavin, Wilson, Maruff, & Sleeman, 2005).

Therefore, there has been no satisfactory explanation of the need to consider the relationship between visual memory and academic achievement of children. This study investigated the relationship between visual memory and academic achievement of children.

Purpose of the Study

The main aim of this study was to investigate the effect of visual memory on academic achievement of children.

The specific objectives of this study were described as follows.

- To develop Visual Memory Test
- To investigate the level of children's visual memory
- To compare children's visual memory by gender and regions
- To explore the relationship between visual memory and academic achievement of children

Definitions of Key Terms

Visual memory. Visual memory is generally defined as any memory in which information is acquired and stored via the visual modality (Hollingworth & Luck, 2008).

Academic achievement. Academic achievement indicates the knowledge attained and skill developed of a learner in the school subject, generally designated by test scores (Bhat, 2012).

Review of Related Literature

Visual Memory

Visual memory refers to the ability to remember what the eyes have seen. It is the ability to retain visual information or to remember (for immediate recall) the various characteristics of a given object or form (Borsting, 2006; Sattler, 2002). If the learners are not attentive to the visual stimuli, they cannot process the visual information to recall or recognize it later (Dednam, 2005).

Visual memory has been defined as "the ability to retain and recall visual experiences" (Todd, 1999). Three processes are fundamental to visual memory:

1. Registration (ability to attend to information for it to be stored),
2. Coding (understanding and structuring information) and
3. Retrieval (finding information stored in long-term memory) (Todd, 1999).

Visual memory can be described as a component of working memory and is often referred to as visual working memory according to Baddeley and Hitch's (1974) theory of the visuo-spatial sketchpad, or a temporary store of visual information. visual working memory capacity increases with age during childhood (Cowan et al., 2005; Heyes, Zokaei, Van der Staaij, Bays, & Husain, 2012; Riggs, McTaggart, Simpson, & Freeman, 2006; Simmering & Perone, 2013). Previous studies have shown that visual working memory storage capacity develops to the adult level by around 10 years of age (Riggs et al., 2006). Adults by around 10 years of age can hold multi-feature

items (e.g., a red square and a yellow rectangle) as well as single-feature items (e.g., a red square and a yellow square) in visual working memory, suggesting that the unit of visual working memory capacity is the integrated object rather than individual features (Luck & Vogel, 1997; but see also Jiang, Makovski, & Shim, 2009; Magnussen, Greenlee, & Thomas, 1996).

Visual Memory and Academic Achievement

Samuels and Anderson (1973) were also interested in the role of visual memory in associational learning and whether children with reading difficulties were more likely to have visual memory deficits. Results of their research found that children who were “good readers” performed significantly higher than “poor readers” on visual recognition tasks. Additionally, the children with high visual recognition scores also tended to perform well on paired associated tasks. Samuels and Anderson (1973) concluded that children’s learning is heavily influenced by their perceptual learning abilities. Kulp et al. (2002) conducted a study that specifically examined the relationship of visual memory performance to academic achievement in school age children. Results of their research indicated that there was a positive trend between children’s visual memory score and performance on reading decoding, math, and overall academic achievement. Kulp et al. (2002) concluded that poor visual memory scores were associated with an increased likelihood of poor performance globally in academic achievement. Poor visual recall occurs when the learner cannot remember what he or she has seen or read. The learner struggles to remember what the pattern of the word or numbers looks like or is unsuccessful in identifying a similar word or number combination on another page. When the learner is given letters or number combinations to build words, he or she may place them in the wrong order or leave out certain letters or numbers. It is also a challenge to remember the steps to solve mathematical problems (Dednam, 2005).

Method

Research Design

The cross-sectional survey was used in this study.

Participants of the Study

The participants Grade 6 students from Mon State and Ayeyarwady Region (Lower Myanmar) and Mandalay Region, Magway Region and Naypyidaw Union Territory (Upper Myanmar), were selected by using stratified sampling method. A total of 548 children participated in this study. The characteristics of the chosen number of participants are presented in Table 1.

Table 1 Characteristics for Participants of the Study

	Gender		Total
	Male	Female	
Upper Myanmar Mandalay Region	83	47	130
Magway Region	56	24	80
Naypyidaw Region	46	38	84
Lower Myanmar Ayeyarwady Region	69	45	114
Mon State	58	82	140
Total	312	236	548

Instruments

The Visual Memory Test was developed by the researcher. This instrument consists of 60 items by seven subtests to measure visual memory of children. Then, Myanmar Achievement Test (Cronbach's alpha = 0.683), English Achievement Test (Cronbach's alpha = 0.551), Mathematics Achievement Test (Cronbach's alpha = 0.628), Science Achievement Test (Cronbach's alpha = 0.633), History Achievement Test (Cronbach's alpha = 0.548) and Geography Achievement Test (Cronbach's alpha = 0.542) developed by the researcher were used to examine academic achievement of children.

Data Analysis and Findings

Development of Visual Memory Test

Checking the Assumption of Unidimensionality for IRT

In order to check the assumption of unidimensionality, a principal factor analysis was conducted by using SPSS software package. The scree plot of this test (see Figure 1) clearly showed the dominant of the first factor. According to this figure, the largest eigenvalue of the correlation matrix for 60 items was nearly two times larger than the second largest.

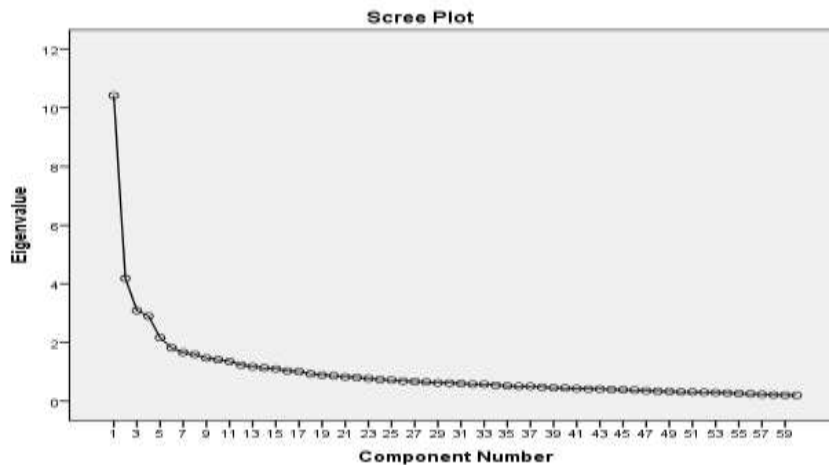


Figure 1 Scree Plot of the Visual Memory Test

Checking the Assumption of Model Data Fit

In this study, the sample of 548 Grade 6 students were administered. According to sample size, 1 PL and 2PL models were selected for checking model data fitness. Goodness of the Model Data Fit was checked by Lord's Chi-square method. Then, there were 22 Misfit items in 1PLM and 13 Misfit items in 2PLM. Therefore, the total numbers of Misfit items in 1PLM was greater than in 2PLM. According to the model data fitness, 2 PL model was used in this study.

Item Analysis of Visual Memory Test

In this section, item analysis and selection procedures of the items will be presented. Scoring scheme is defined as one point for each correct answer for an item and zero point for each incorrect answer per item. In constructing visual memory test by using 2 PL model, the logistics item response model is employed using BILOG-MG 3 and Microsoft Excel. Item parameters and ability parameters were estimated with the BILOG-MG 3 Software package.

Investigation of Item Parameters Using Logistic Item Response Model

In this study, 60 multiple choice items were used according to the table of specifications. The visual memory test was developed by using two-parameter logistics item response model. The item parameters were estimated by IRT after field testing of the test. In the estimation procedure (Phase 2 output), the ability parameter distribution of the examinees was assumed as a standard normal distribution (Mean=0, Standard deviation=1).

The estimation parameter values for item discrimination parameter and item difficulty parameter of 60 items for visual memory test are described in Table 2. It indicates the estimates of item discrimination parameter (slope) a and item difficulty parameter (threshold) b of the test. The criteria for item selection were decided for item difficulty parameter estimates (b) as the range from -2 to +2 and item discrimination parameter estimate (a) as the range from 0 to 2. The value of a indicates item discriminate between high and low proficiency of students. The high value of a shows the higher discrimination power of item between high and low achieves. The value of b indicates how the difficult the item is. The negative sign indicates the easier item difficulty and the positive sign indicates the harder item difficulty.

It was observed that item discrimination a parameter ranges from 0.086 to 1.235 and the mean of a value is 0.431. The range of difficulty b parameter of items in the test was from -10.607 to 2.427. The mean of b value is -1.537. It was found that item 1, 2, 3, 13, 16, 17, 18, 19, 20, 22, 27, 29, 30, 44, 45, 46, 47, 49, 50, 52, 59 were very easy for examinees due to b values of these items were less than -2. Except these items, all of items had good difficulty level. According to the Phase 2 output, item 1, 2, 3, 13, 16, 17, 18, 19, 20, 22, 27, 29, 30, 44, 45, 46, 47, 49, 50, 52, 59 were not relevant to use in the visual memory test. Finally, 39 items remained in the visual memory test.

Table 2 Item Parameters in IRT Analyses of all items in Visual Memory Test

Item No.	Slope (a)	Threshold (b)	Item No.	Slope (a)	Threshold (b)
ITEM0001	0.146	-7.787	ITEM0031	0.819	0.924
ITEM0002	0.197	-3.847	ITEM0032	0.130	1.208
ITEM0003	0.319	-3.091	ITEM0033	0.447	1.088
ITEM0004	0.388	-1.093	ITEM0034	0.274	1.232
ITEM0005	0.453	-1.321	ITEM0035	0.640	2.427
ITEM0006	1.235	-0.092	ITEM0036	0.500	1.568
ITEM0007	0.700	-1.098	ITEM0037	0.091	-1.943
ITEM0008	0.866	-0.857	ITEM0038	0.263	0.104
ITEM0009	0.984	-0.531	ITEM0039	0.391	-0.239
ITEM0010	1.235	-0.275	ITEM0040	0.515	-0.480
ITEM0011	0.404	-1.962	ITEM0041	0.122	-5.981
ITEM0012	0.631	-1.427	ITEM0042	0.358	-0.154

Item No.	Slope (<i>a</i>)	Threshold (<i>b</i>)	Item No.	Slope (<i>a</i>)	Threshold (<i>b</i>)
ITEM0013	0.513	-2.051	ITEM0043	0.277	-0.389
ITEM0014	0.388	-1.573	ITEM0044	0.104	-2.173
ITEM0015	0.118	-1.844	ITEM0045	0.383	-2.834
ITEM0016	0.092	-2.555	ITEM0046	0.583	-2.067
ITEM0017	0.492	-2.311	ITEM0047	0.487	-2.928
ITEM0018	0.763	-3.417	ITEM0048	1.210	-0.979
ITEM0019	0.515	-2.955	ITEM0049	0.159	-4.807
ITEM0020	0.699	-2.594	ITEM0050	0.206	-5.412
ITEM0021	0.488	-1.592	ITEM0051	0.896	0.490
ITEM0022	0.255	-4.768	ITEM0052	0.217	-3.901
ITEM0023	0.744	-0.939	ITEM0053	0.654	-0.616
ITEM0024	0.747	-0.735	ITEM0054	0.251	-0.644
ITEM0025	0.481	-0.947	ITEM0055	0.227	-0.685
ITEM0026	0.279	-0.306	ITEM0056	0.193	-1.033
ITEM0027	0.117	-2.804	ITEM0057	0.404	0.038
ITEM0028	0.611	-0.257	ITEM0058	0.266	0.614
ITEM0029	0.086	-10.607	ITEM0059	0.107	-2.076
ITEM0030	0.140	-2.425	ITEM0060	0.720	0.474

Investigation of IRT Graphic Illustration for Visual Memory Test

The matrix plot of Item Characteristics Curve (ICC) for the test items (see Figure 2). The Item characteristics curve (ICC) is a graphical representation of the probability of responding correctly to an item as a function of the latent trait (denoted by θ) underlying performance on the items of the test. The higher the student's ability level (moving from left to right along θ scale, the greater the probability that an examinee corrects the item.

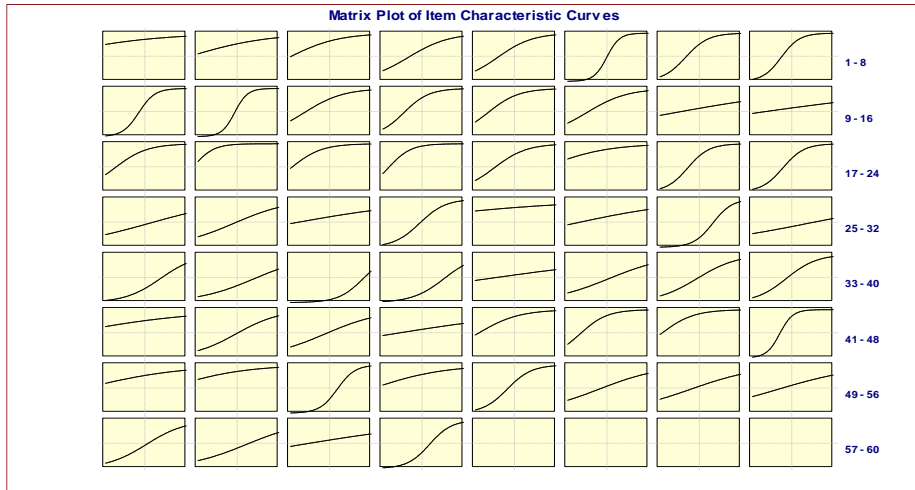


Figure 2 Matrix Plot of Item Characteristics Curves for All Items in Visual Memory Test

The total information curve (TIC) gives the average probability or expected proportion of the correct as a function of the underlying latent trait. According to Demars (2010), the greater information causes, the smaller the standard error and the greater the reliability. TIC is plotted according to the results of parameter estimates of the test.

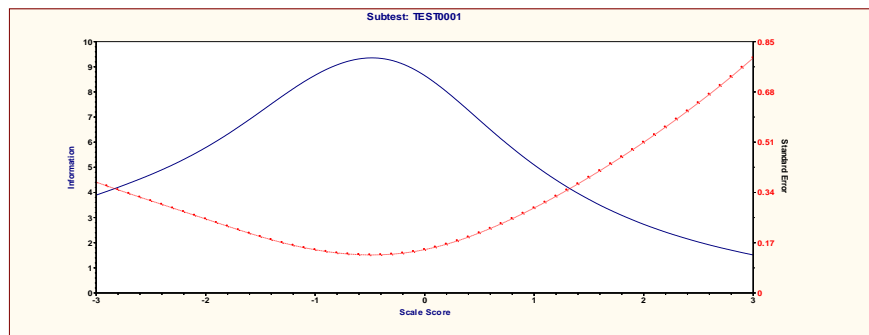


Figure 3 Total Information Curve of Visual Memory Test

The finding indicated that the test had smaller standard error across the ability scale from -2.8 to 1.4 and larger standard error had low and high ends of the scale (see Figure 3). The maximum amount of information was $I(\theta) = 9.4$ at -0.4 . Ability estimates are more precise across the ability scale from -2.8 to 1.4 . Therefore, it can be interpreted that the test can be used to measure visual memory of children with $\theta = -0.4$.

Investigation of Ability Parameter for Visual Memory Test

Raw scores of each examinee who participated in this study and their ability scores were investigated in scoring output (Phase 3). The range of ability estimation was from -0.0337 (the lowest ability score) to 1.8516 (the highest ability score) and the mean of ability was 0.017 (see Table 3).

Table 3 Ability Parameter of Grade 6 Students

Mean	0.017
Standard Deviation	1.0056
Empirical Reliability	0.8608

Reliability of Visual Memory Test

To examine the internal consistency of visual memory test, Cronbach’s alpha was calculated. Cronbach’s alpha of the test was 0.773. This result can conclude that the test has high reliability.

Visual Memory Level of Children

By using the statistical analysis, the collected data were analyzed and the results will be described in the following session. The mean score and standard deviation of visual memory was 39.03 and 6.72. Based on descriptive statistics of visual memory, children in this study were identified into three groups: 21.8% of students with scored one standard deviation above the sample mean were considered as high group; 63.8% of students with scores between (+1) and (-1) standard deviation from the sample mean were grouped into moderate group; and the remaining students of 14.4% who scored one standard deviation lower than the sample mean were identified as low group (see Figure 4).

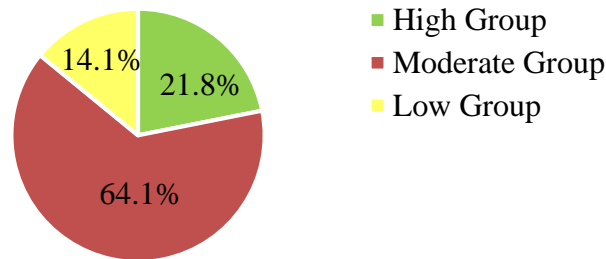


Figure 4 Three Different Groups of Visual Memory of Children

Comparison for Visual Memory of Children by Gender

In order to investigate whether there was a gender difference in visual memory of children. The mean scores of males and females in visual memory were analyzed in Table 4.

Table 4 The Mean, Standard Deviation and Independent Sample *t*-test Results of Visual Memory by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
Visual Memory	Male	312	38.20	6.63	-3.376**	0.009
	Female	236	40.14	6.69		

Note. ** $p < 0.01$

The results of independent samples *t*-test confirmed that there was significant difference in visual memory of children by gender. The mean score of female students was higher than the mean score of male students in visual memory.

Comparison for Visual Memory of Children by Region

To make more detailed information on the difference of children’s visual memory by regions, one-way Analysis of Variance (ANOVA) was conducted (see Table 5). ANOVA results

indicated that there was significant difference of visual memory by regions, $F(4, 543) = 7.616, p < .001$.

Table 5 ANOVA Results of Mean Comparison for Visual Memory by Regions

Variable	Regions	N	M	SD	F	p
Visual Memory	Region 1	114	36.04	6.7	7.616***	0.000
	Region 2	140	40.16	6.1		
	Region 3	130	39.53	6.1		
	Region 4	80	39.85	7.04		
	Region 5	84	39.65	7.5		

Note. *** $p < 0.001$

To obtain more detailed information for regions, post hoc test was carried out by Tukey HSD multiple comparison procedure for Region 1, Region 2, Region 3, Region 4 and Region 5 (see Table 6). The findings revealed that children’s visual memory from Region 1 was significantly lower than other regions (Region 2, Region 3, Region 4 and Region 5).

Table 6 Results of Tukey HSD Multiple Comparisons for Visual Memory by Regions

Variable	(I)Region	(J)Region	Mean difference(I-J)	p
Visual Memory	Region 1	Region 2	-4.113***	.000
		Region 3	-3.487***	.000
		Region 4	-3.806**	.001
		Region 5	-3.611**	.001

Note. ** $p < 0.01$, *** $p < 0.001$

Relationship Between Visual Memory and Academic Achievement of Children

As one of the objectives of this study, the correlational analysis was conducted to find out whether there is a relationship between visual memory and academic achievement (Myanmar achievement, English achievement, Mathematics achievement, Science achievement, Geography achievement, History achievement) of children (see Table 7).

Table 7 Correlation Between Visual Memory and Academic Achievement (Myanmar Achievement, English Achievement, Mathematics Achievement, Science Achievement, Geography Achievement, History Achievement) of Children

Variables	Academic Achievement	Myanmar Achievement	English Achievement	Mathematic Achievement	Science Achievement	Geography Achievement	History Achievement
Visual Memory	.745**	.560**	.486**	.745**	.557**	.029	-.034

Note. ** $p < 0.01$

According to the Table 7, the result revealed that there was a significant relationship between visual memory and academic achievement of children because the correlation coefficient was statistically significant ($r = .745, p < 0.01$). So, it can be said that visual memory of children

was positively correlated with their academic achievement. In other words, the higher children’s visual memory, the higher their academic achievement. Moreover, there is a significant relationship between visual memory and Myanmar achievement, English achievement, mathematics achievement, science achievement at 0.01 significance level. But there is no significant relationship between visual memory and history achievement. Similarly, there is no significant relationship between visual memory and geography achievement (see Table 7)

Regression Analysis for the Prediction of Visual Memory

To make more detailed investigation, further detail analyses and computations were undertaken by using regression analyses.

Predictive Power of Visual Memory on Academic Achievement

To examine the predictive contribution of visual memory on academic achievement, linear regression analysis was conducted. The results of linear regression analysis pointed out that the visual memory made predictive contribution to academic achievement; $F(1, 547) = 399.714, p < 0.001$ and explained for 42.2% (adjusted R^2) of the variance in academic achievement (see Table 8).

Table 8 Simple Linear Regression Analysis Predicting Academic Achievement from Visual Memory

Predictor	B	Std. Error	β	t	R	R^2	Adjusted R^2	F
Constant	41.00	.777			.745	.555	.555	399.714***
Visual Memory	.883	.034	.745	19.993				

Note. *** $p < 0.001$

The resultant model for this relationship can be identified as the following equation;

$$AA = 41 + 0.883 VM$$

Note. AA = Academic Achievement, VM = Visual Memory

Predictive Power of Visual Memory on Myanmar Achievement

To examine the predictive contribution of visual memory on Myanmar achievement, linear regression analysis was conducted. The results of linear regression analysis pointed out that the visual memory made predictive contribution to Myanmar achievement; $F(1, 547) = 399.714, p < 0.001$ and explained for 42.2% (adjusted R^2) of the variance in Myanmar achievement (see Table 9).

Table 9 Simple Linear Regression Analysis Predicting Myanmar Achievement from Visual Memory

Predictor	B	Std. Error	β	t	R	R^2	Adjusted R^2	F
Constant	4.258	.292			.65	.423	.422	399.714***
Visual Memory	.254	.013	.650	19.993				

Note. *** $p < 0.001$

The resultant model for this relationship can be identified as the following equation;

$$MA = 4.258 + 0.25 VM$$

Note. MA = Myanmar Achievement, VM = Visual Memory

Predictive Power of Visual Memory on English Achievement

To examine the predictive contribution of visual memory on English achievement, linear regression analysis was conducted. The results of linear regression analysis pointed out that the visual memory made predictive contribution to English achievement; $F(1, 547) = 169.204, p = .000$ and explained for 31.9% (adjusted R^2) of the variance in English achievement (see Table 10).

Table 10 Simple Linear Regression Analysis Predicting English Achievement from Visual Memory

Predictor	B	Std. Error	β	t	R	R^2	Adjusted R^2	F
Constant	6.546	.295			.586	.321	.319	169.204***
Visual Memory	.167	.013	.586	13.008				

Note. *** $p < 0.001$

The resultant model for this relationship can be identified as the following equation;

$$EA = 6.546 + 0.167 VM$$

Note. EA = English Achievement, VM = Visual Memory

Predictive Power of Visual Memory on Mathematics Achievement

To examine the predictive contribution of visual memory on mathematics achievement, linear regression analysis was conducted. The results of linear regression analysis pointed out that the visual memory made predictive contribution to mathematics achievement; $F(1, 547) = 681.486, p = .000$ and explained for 55.4% (adjusted R^2) of the variance in mathematics achievement (see Table 11).

Table 11 Simple Linear Regression Analysis Predicting Mathematics Achievement from Visual Memory

Predictor	B	Std. Error	β	t	R	R^2	Adjusted R^2	F
Constant	5.472	.242			.745	.555	.554	681.486***
Visual Memory	.275	.011	.745	26.105				

Note. *** $p < 0.001$

The resultant model for this relationship can be identified as the following equation;

$$MA = 5.472 + 0.275 VM$$

Note. MA = Mathematics Achievement, VM = Visual Memory

Predictive Power of Visual Memory on Science Achievement

To examine the predictive contribution of visual memory on science achievement, linear regression analysis was conducted. The results of linear regression analysis pointed out that the

visual memory made predictive contribution to science achievement; $F(1, 547) = 246.217$, $p = .000$ and explained for 31% (adjusted R^2) of the variance in science achievement (see Table 12).

Table 12 Simple Linear Regression Analysis Predicting Science Achievement from Visual Memory

Predictor	B	Std. Error	β	t	R	R^2	Adjusted R^2	F
Constant	4.546	.284			.557	.311	.310	246.217***
Visual Memory	.194	.012	.557	15.691				

Note. *** $p < 0.001$

The resultant model for this relationship can be identified as the following equation;

$$SA = 4.546 + 0.194 VM$$

Note. SA = Science Achievement, VM = Visual Memory

According to the results, visual memory was a predictor to Myanmar achievement, English achievement, Mathematics achievement and Science achievement. However, visual memory did not contribute to geography achievement and history achievement.

Discussion

Firstly, this study confirmed that the Visual Memory Test can be measured to examine visual memory for Myanmar children.

Secondly, the findings indicated that female students have higher level of visual memory than male students. The results of this study are consistent with a male advantage in visual-spatial working memory although age and specific task modulate the magnitude and direction of the effects (Voyer, 2017). Moreover, the results revealed that there was a significant difference in visual memory by regions.

In addition, the findings stated that visual memory of children was positively correlated with their academic achievement. Furthermore, the results indicated that visual memory was a predictor of academic achievement, especially in Myanmar achievement, English achievement, Mathematics achievement and Science achievement. Therefore, it can be concluded that children with higher visual memory will perform better in their academic achievement.

Therefore, visual memory can affect academic achievement of children. Teachers and parents should help children to improve their visual memory. Teachers should help children by teaching using visual teaching aids. When the teachers use the teaching learning materials (e.g., using pictures and objects), children will interest in their learning. So, teaching-learning process is effective and visual memory of children will improve and they will perform better in their academic learning.

Acknowledgements

We would like to thank to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-Rector, Yangon University of Education), Dr. Nyo Nyo Lwin (Pro-Rector, Yangon University of Education) and Dr. Khin Khin Oo (Pro-Rector, Yangon University of Education) for their permission to conduct this study. Then, we wish to express our gratitude to Dr. Khin Hnin Nwe (Professor and Head of Department, Department of Educational Psychology, Yangon University of Education) for her support throughout this study. Moreover, we would also like to thank to all the participants for their active participation in collecting the required data.

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SCHOOL-RELATED SOCIAL SUPPORT AND PERCEIVED SCHOOL SATISFACTION AMONG ADOLESCENTS

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Abstract

School satisfaction is a major aspect of adolescents' quality of life. It is important in and of itself and adolescents have a right to feel good about themselves and the institutions in which they function. The main purpose of this study is to investigate the effect of school-related social support on perceived school satisfaction among adolescents. A total of 320 adolescents participated in this study. Regarding gender, the findings indicated that female students were higher in school satisfaction than that of male students. There was a significant gender difference for adolescents' perceived school satisfaction. And then, there was no significant difference in perceived school satisfaction by grade. The result pointed out that there was no significant gender and grade difference for adolescents' school-related social support. The results indicated that school-related social support by teachers and school-related social support by classmates were positively correlated with school satisfaction of adolescents. The results revealed that perceived school satisfaction was explained by school-related social support by teachers and classmates. The findings indicated that school-related social support by teachers was the most significant factor in predicting adolescents perceived school satisfaction of adolescents.

Keywords: School Satisfaction, School Related Social Support, Adolescents

Introduction

Schools represent one of the major life contexts of adolescents; how adolescents evaluate and experience their school life directly affects their global subjective well-being (Haraninet al. 2007; Takakura et al. 2010). In adolescents' school lives, teachers and classmates represent the people who most frequently interact with them (e.g., Danielsen et al. 2009; Malecki & Demaray 2003; Reeve et al., 2008). Therefore, adolescents' interactions with these people directly influence students' perceptions of their school lives (Danielsen et al., 2009; Tian et al., 2013).

The specific life satisfaction domains in adolescents include satisfaction with the school, family, and leisure. In Brazil, in general, young people present good levels of life satisfaction (Segabinazi et al., 2010), which corroborates the findings of the international literature (Huebner & McCullough, 2000; Huebner, Gilman, Reschly, & Hall, 2009). However, among the specific domains of life satisfaction for adolescents, the school has presented the lowest means in national and international studies (Huebner & McCullough, 2000; Segabinazi et al., 2010). Low satisfaction with school experiences has generated questions related to the schools' role in the school-related social support by teachers and classmates.

School satisfaction is related to the students' assessment of how they feel about that environment, considering the importance of the school, the school community and the interpersonal relationships experienced in this context (Huebner & McCullough, 2000). This measure, however, is complex and non-linear, since the student's perception of the school experience does not only derive from events and feelings related to the school itself. Other life experiences related to family, friends, leisure, and physical and mental health may affect this judgment. Previous studies have demonstrated the importance of contextual and individual variables (self-perceptions, individual resources) for a better comprehension of the satisfaction of

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students with their school experience. Among the existing empirical evidence, some of the key factors that correlate with school satisfaction are age and academic performance (Alves, Zappe, Patias, & Dell'Aglio, 2015), feelings of self-esteem (Karatzias, Power, Flemming, Lennan, & Swanson, 2002), support of teachers and peers, general and academic self-efficacy (Suldo, Bateman, & Gelley, 2014), expectations for the future (Alves et al., 2015) and school climate (Suldo, Thalji-Raitano, Gelley, & Hoy, 2013).

From the positive perspective, the evaluation of the schooling process (school results) should not only focus on variables related to academic success. It is important to consider more comprehensive outcomes, including non-academic results, such as students' perceptions regarding the quality of their school settings, as well as their psychological well-being (Huebner et al., 2009). Previous studies have shown that school experience and levels of satisfaction with the school influence overall satisfaction with life and well-being (Suldo et al., 2014). Therefore, it is important to seek to comprehend which factors promote school satisfaction for students.

School satisfaction itself includes the good relationship between teachers and their students at school. Perceived social support represents an important resource in their lives and is associated with a wide range of psychological outcomes (Aydin et al., 2016; Münzer et al., 2017). Among the most important settings in childhood and adolescence are schools and classrooms, where social interactions with teachers and classmates take place. School-related social support (i.e., social support from teachers and classmates) influences the perception of school lives directly (Danielsen et al., 2010).

High levels of school-related social support can have positive effects on students' adaptive and social skills, self-concept, internalizing, and externalizing behavior problems, and life satisfaction (Demaray & Malecki, 2002; Stewart & Suldo, 2011). School-related social support seems to be one of the most important resources in the positive development of children and adolescents (Janssen et al., 2004; Oppedal & Røysamb, 2004; Frankenberg et al., 2013). A study with 10 - 13-year-old Turkish and Moroccan immigrant students in the Netherlands showed that emotional support from teachers was positively associated with students' school adjustment (Vedder et al., 2005).

The 6th World Health Organization international survey (2000) examined the effect of school-related social support from teachers, classmates, and parents on students' life satisfaction that school satisfaction, scholastic competence, and general self-efficacy, respectively, mediated. It is based the analyses on data from a nationally representative sample of 13- and 15-year-old students. School satisfaction was more strongly related to girls' life satisfaction than to that of boys.

Previous studies suggest that some social climate variables are associated with school satisfaction. For example, the perceived quality of teacher-student relationships from both teacher and child perspectives predicts student school satisfaction (Baker, Davis, Dilly & Lacey, 2002). Larger aspects of school organization and structure, such as how schools organize time, curriculum, spacing, and the continuity of contact between teachers and students affect achievement outcomes (Baker et al., 2001). Children who had more friends and higher quality friendships scored higher on measures of life satisfaction (Huebner & Alderman, 1993), possibly because an increase in friendship provides more opportunities for social support. Students' peer groups also influence their school satisfaction. Students whose peers have positive attitudes toward school have more positive attitudes toward school themselves (Epstein, 1981)

Social support is the physical and emotional comfort given to others such as family, friends, co-workers and so on. It's the knowledge that some are part of a community of people who love and care for them, value and think well of them. In school life for children, it is necessary to be happy at school and get satisfaction in school life. The higher the perceived social support level,

the higher is positive coping tendencies and the lower is negative coping tendencies. If students cannot clearly identify types of social support sources, they are more inclined to adopt negative coping strategies.

Therefore, considering the school as a privileged space for the healthy development of adolescents, determinants and correlates of adolescent satisfaction in this important environment were sought. Thus, this study aimed to investigate school satisfaction in adolescents and to examine which dimensions of the school-related social support by teachers and classmates best explain their satisfaction with the school.

Purpose of the Study

The purpose of this study is to investigate the effect of school-related social support on perceived school satisfaction among adolescents. Next, this study is to explore the contribution of school-related social support by teachers and classmates to school satisfaction. Finally, to examine which factor has the most significant effect on adolescents' perceived school satisfaction among school-related social support by teachers and classmates.

The objectives of this study are:

- To examine adolescents' level of perceived school satisfaction,
- To examine adolescents' perceived school satisfaction by gender and grade,
- To investigate school-related social support (teachers and classmates) by gender and grade, and
- To explore the relationship between school-related social support and perceived school satisfaction among adolescents.

This study examined the following research questions;

- Is there any significant difference in adolescents' perceived school satisfaction by gender and grade?
- Is there any significant difference in school-related social support by gender and grade?
- Is there any significant relationship between school-related social support and perceived school satisfaction among adolescents?

Definitions of Key Terms

School-related social support. School-related social support refers to the social resources perceived to be available and used by students (Cohen et al., 2000).

School satisfaction. School satisfaction has been defined as "a cognitive-affective evaluation of overall satisfaction with one's school experience" (Huebner, Ash, & Laughlin, 2001).

Adolescents. The World Health Organization (WHO, 2019) defines an adolescent as any person between ages 10 and 19.

Review of Related Literature

School Satisfaction of Adolescents

Life satisfaction has been related to the individual's cognitive assessment of his/her life in different domains (Segabinazi, Giacomoni, Dias, Teixeira, & Moraes, 2010). The specific life satisfaction domains in adolescents include satisfaction with the school, family, and leisure. Past studies indicated that the gender influences the school satisfaction of children or adolescents (Chouhan et al., 2017).

Life satisfaction has been related to the individual's cognitive assessment of his/her life, in different domains (Segabinazi, Giacomoni, Dias, Teixeira, & Moraes, 2010). The specific life satisfaction domains in adolescents include satisfaction with the school, family, and leisure.

In Brazil, in general, young people present good levels of life satisfaction (Segabinazi et al., 2010), which corroborates the findings of the international literature (Huebner & McCullough, 2000; Huebner, Gilman, Reschly, & Hall, 2009). However, among the specific domains of life satisfaction for adolescents, the school has presented the lowest means in national and international studies (Huebner & McCullough, 2000; Segabinazi et al., 2010). Elliot and Healy (2001) defined students' satisfaction as a short-term attitude, resulting from an evaluation of a students' educational experiences.

School-Related Social Support by Teachers

Students require more support from teachers in elementary school (Chu et al. 2010; DuBois et al. 1992; Malecki and Demaray 2006), while they gain more social support from peers during the middle and high school years (Helsen et al. 2000; Jenkins et al. 2002; Lipschitz-Elhawi and Itzhaky 2005; Marsh et al. 2006). Teachers are often established as significant others in students' lives (Brophy 1981) who are the adults in school that know and care most about students.

Social support is one of the most powerful contextual factors contributing to individuals' general subjective well-being (Chou, 1999; Diener & Seligman, 2002; Gallagher & Vella-Brodrick, 2008; Kong, Zhao, & You, 2013; Natvig, Albrektsen, & Qvarnström, 2003). Teachers are often established as 'significant others' in students' lives (Brophy, 1981). Empirical research demonstrates that teacher support is essential to students' school satisfaction (Hamre & Pianta, 2001, 2006; Reddy, Rhodes, & Mulhall, 2003; Rosenfeld, Richman, & Bowen, 2000).

School-Related Social Support by Classmates

Social support represents an important resource in their lives and is associated with a wide range of psychological outcomes (Aydin et al., 2016; Münzer et al., 2017). Malecki and Demaray defined social support as 'an individual's perceptions of general support or specific supportive behaviors (available or enacted upon) from people in their social network, which enhances their functioning and/or may buffer them from adverse outcomes' (Malecki and Demaray, 2002).

Nickerson and Nagle (2004) also found relationships with friends exerted a greater impact on students' global life satisfaction. Elliot and Healy (2001) defined friendships and relationships in the school community are the most important factors in a happy school, and positive and supportive relationships in school promote students' motivation and interest in school.

School-Related Social Support and Perceived School Satisfaction

High levels of school-related social support can have positive effects on students' adaptive and social skills, self-concept, internalizing, and externalizing behavior problems, and life satisfaction (Demaray and Malecki, 2002; Stewart and Suldo, 2011). Low levels of support from classmates are associated with higher levels of depression and social anxiety, lower levels of self-esteem (Wit et al., 2011), and higher risk of emotional and conduct problems (Noam et al., 2014). School satisfaction can be promoted with emphasis on the teacher-student relationship (Coelho et al., 2019). Teacher support had significant contribution to school satisfaction (Cici, 2006).

Method

This study was to investigate perceived school satisfaction and school-related social support among adolescents. The cross-sectional survey was used in this study.

Participants of the Study

A total of 320 adolescents from four schools of Bago and Yangon Region participated in this study (160 students from Grade 10 and 160 students from Grade 11). The characteristics of the chosen number of participants are presented (see Table 1).

Table 1 Characteristics of the Chosen Number of Participants

Characteristics	Yangon Region		Bago Region		Total
	School 1	School 2	School 3	School 4	
Gender					
Male	40	40	40	40	160
Female	40	40	40	40	160
Total	80	80	80	80	320
Grade					
Grade 10	40	40	40	40	160
Grade 11	40	40	40	40	160
Total	80	80	80	80	320

Measures

School Satisfaction. To assess adolescents' perceived school satisfaction, Perceived School Satisfaction Scale (May Cho Min, 2012) was used in this study. This measure was adapted from the Multidimensional Students' Life Satisfaction Scale (MSLSS) (Huebner et al., 1998). The measure consisted of 12 items. The participants have to answer four-point Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree). The Cronbach's alpha of the Perceived School Satisfaction Scale was 0.984, having high reliability. The sample items were presented as follows:

- I look forward to going to school.
- School is interesting.
- I am satisfied with what I am learning at school.

School-related Social Support by Teachers. To assess adolescents' school-related social support, Child and Adolescent Social Support Scale (CASSS) provided by Sun et al. (2005) were used in this study. It consisted of 12 items with six-point scale (1= Never, 2 = Almost never, 3 = Some of the time, 4 = Most of the time, 5 = Almost always, 6 = Always). The Cronbach's alpha of Child and Adolescent Social Support Scale (Teachers) was 0.884, having high reliability. The sample items were presented as follows:

- My teacher(s) cares about me.
- My teacher(s) treats me fairly.
- My teacher(s) makes it okay to ask questions.

School-related Social Support by Classmates. To examine the extent to which students felt that their needs for social support, information and feedback were met by friends, Child and Adolescent Social Support Scale (CASSS) provided by Sun et al. (2005) was used in this study. It

consisted of 12 items with six-point scale (1= Never, 2 = Almost never, 3 = some of the time, 4 = most of the time, 5 = Almost always, 6 = Always). The Cronbach's alpha of Child and Adolescent Social Support Scale (Classmates) was 0.804, having high reliability. The sample items were presented as follows:

- My classmates treat me nicely.
- My classmates like most of my ideas and opinions.
- My classmates pay attention to me.

Instrumentation and Procedure

This study explored adolescents' perceived school satisfaction and school-related social support. The literature and previous studies of perceived school satisfaction, school-related social support by teachers and classmates were reviewed. Next, all the instruments used in the study were adapted to Myanmar Language version. To iron out problems before sending the questionnaire to the schools, pilot study was done. Finally, by using the self-reported survey questionnaire, the required data were collected in December, 2022. The participants from four schools of Bago and Yangon Region were distributed the self-reported survey questionnaire in the second and third week of December, 2022. With the help of headmasters and teachers of the target schools, the researcher requested the respondents to participate in the questionnaire response voluntarily with informed consent.

Results

Adolescents' Perceived School Satisfaction

By using the descriptive procedure with the data obtained from survey questionnaire, adolescents' school satisfaction was estimated. Descriptive statistics revealed that the mean and standard deviation of school satisfaction for the whole sample was 36.58 and 5.61.

Level of Adolescents' Perceived School Satisfaction

Based on descriptive statistics of school satisfaction, adolescents in this study were identified into three groups: 15% of adolescents who scores one standard deviation above the sample mean were considered as a high group; 71% of adolescents with scores between (+1) and (-1) standard deviation from the sample mean were grouped into moderate group; and the remaining students of 14% who scored one standard deviation lower than the sample mean were identified as low group. The visual presentation of three different groups of perceived school satisfaction was shown in Figure 1.

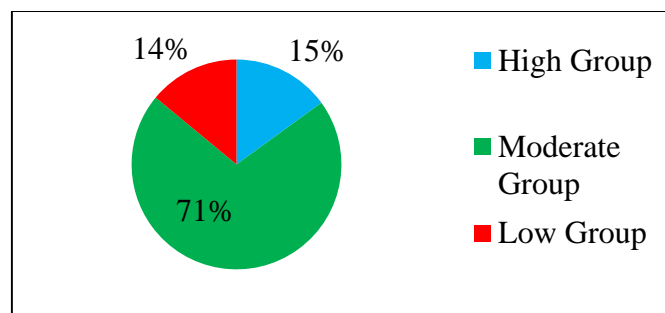


Figure 1 Three Different Groups of Adolescents' Perceived School Satisfaction

Comparison of Adolescents' Perceived School Satisfaction by Gender

According to the descriptive statistics, the means and standard deviations of adolescents' perceived school satisfaction for both male and female students were reported in Figure 2. To make

more detailed investigation on the gender difference of adolescents' perceived school satisfaction, independent samples *t*-test was conducted (see Table 2).

Table 2 Means, Standard Deviations, and Results of Independent Samples *t*-test of Adolescents' Perceived School Satisfaction by Gender

Variable	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
School Satisfaction	Male	160	35.54	6.04	-3.361**	306.411	.001
	Female	160	37.62	4.96			

Note. ***p* < 0.01

The result of independent samples *t*-test stated that there was a significant gender difference for adolescents' perceived school satisfaction, *t* (306.411) = -3.361, *p* = .001. To be exact, inspection of the two group means indicated that the mean score of school satisfaction for female adolescents (*M* = 37.62) was significantly higher than that of male adolescents (*M* = 35.54).

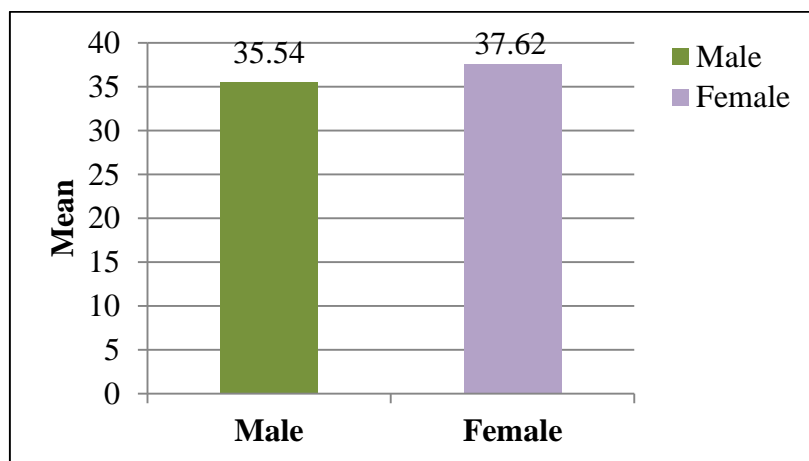


Figure 2 Mean Comparison for Adolescents' Perceived School Satisfaction by Gender

Comparison of Adolescents' Perceived School Satisfaction by Grade

According to the descriptive statistics, the means and standard deviations of school satisfaction for both Grade 10 and Grade 11 adolescents were reported in Table 3. To make more detailed investigation on the grade difference of adolescents' perceived school satisfaction, independent samples *t*-test was conducted (see Table 3). The result of independent samples *t*-test started that there was no significant grade difference of adolescents' perceived school satisfaction, *t* (318) = -1.800, *p* = 0.073.

Table 3 Means, Standard Deviations and Results of Independent Sample *t*-test of Adolescents' Perceived School Satisfaction by Grade

Variable	Grade	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
School Satisfaction	Grade 10	160	36.02	5.91	-1.800	318	0.073
	Grade 11	160	37.14	5.26			

Adolescents' School-related Social Support (Teachers and Classmates)

By using the descriptive procedure with the data obtained from Child and Adolescent Social Support Scale (Malecki et al., 2000), the adolescents' school-related social support by teachers and classmates was estimated. The mean score of school-related social support by teachers was higher than that of school-related social support by classmates (see Table 4).

Table 4 Means and Standard Deviations of Adolescents’ School-related Social Support (Teachers and Classmates)

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Minimum	Maximum
School-related Social Support by Teachers	320	49.07	11.20	12	72
School-related Social Support by Classmates	320	46.30	12.61	12	72

School-related Social Support Level of Adolescents

Based on descriptive statistics of school-related social support by teachers, adolescents in this study were identified into three groups; 14.7% of adolescents who scores one standard deviation above the sample mean were considered as high group; 70.9% of adolescents with scores between (+1) and (-1) standard deviation from the sample mean were grouped into moderate group; and the remaining adolescents of 14.4% were identified as low group (see Figure 3).

According to the descriptive statistics of school-related social support by classmates, adolescents in this study were identified into three groups; 15.6% of adolescents with scores one standard deviation above the sample mean were considered as high group; 70% of adolescents with scores between (+1) and (-1) standard deviation from the sample mean were grouped into moderate group; and the remaining adolescents of 14.4% were identified as low group (see Figure 4).

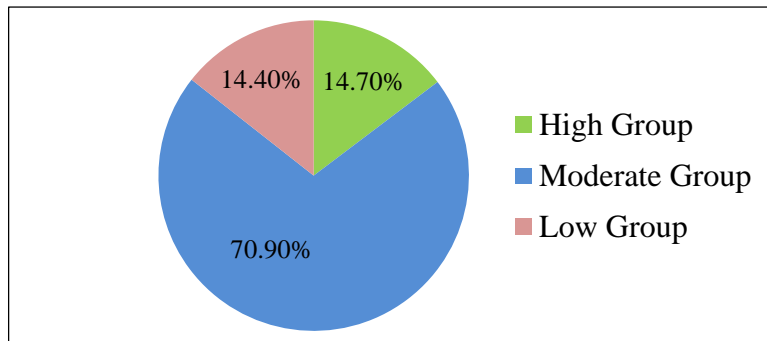


Figure 3 Three different Groups of Adolescents’ School-related Social Support by Teacher

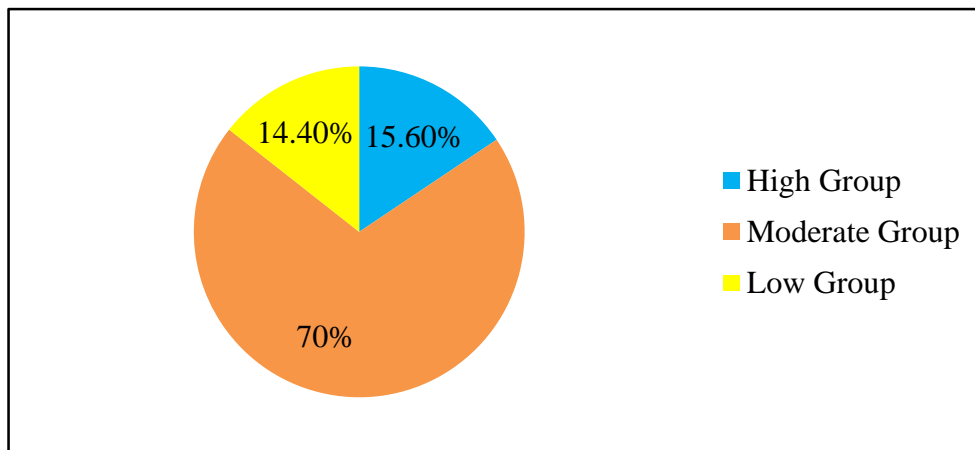


Figure 4 Three different Groups of Adolescents’ School-related Social Support by Classmates

Comparison of Adolescents’ School-related Social Support by Gender

According to the descriptive statistics, the means and standard deviations of adolescents’ school-related social support (teachers and classmates) for both male and female adolescents were reported in Table 5. To make more detailed investigation on the gender difference of adolescents’ school-related social support (Teachers and Classmates), independent samples *t*-test was conducted. The results of independent samples *t*-test stated that there was no significant gender difference for adolescents’ school-related social support.

Table 5 Means, Standard Deviations and Results of Independent Samples *t*-test of Adolescents’ School-related social Support (Teachers and Classmates) by Gender

Variable	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
School-related Social Support by Teachers	Male	160	48.17	11.96	-1.445	318	0.149
	Female	160	49.98	10.34			
School-related Social Support by Classmates	Male	160	46.04	12.29	-0.376	318	0.707
	Female	160	46.57	12.96			

Comparison of Adolescents’ School-related Social Support by Grade

According to the descriptive statistics, the means and standard deviations of school-related social support for both Grade 10 and Grade 11 adolescents were reported in Table 8. The results revealed that the mean score of Grade 10 adolescents was higher in school-related social support by teachers than that of Grade 11 adolescents, whereas the mean score of Grade 10 adolescents was higher in school-related social support by classmates than that of Grade 11 adolescents.

To make more detailed investigation on the grade difference of students’ school-related social support, independent samples *t*-test was conducted (see Table 6). The results of independent samples *t*-test stated that there was no significant grade difference for students’ school-related social support.

Table 6 Means, Standard Deviations, and Results of Independent Samples *t*-test of Adolescents’ School-related Social Support (Teachers and Classmates) by Grade

Variable	Grade	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
School-related Social Support by Teachers	Grade 10	160	49.30	11.25	0.364	318	0.716
	Grade 11	160	48.84	11.18			
School-related Social Support by Classmates	Grade 10	160	47.48	11.78	1.676	318	0.095
	Grade 11	160	45.13	13.31			

Relationship Between School-related Social Support and Perceived School Satisfaction of Adolescents

Regarding the relationship between school-related social support and perceived school satisfaction of adolescents, Pearson product-moment correlation was conducted. The correlation between school-related social support and perceived school satisfaction of adolescents was presented in Table 7. The results indicated that school-related social support by teachers and school-related social support by classmates were positively correlated with school satisfaction of adolescents.

Table 7 Correlation Between School-related Social Support and Perceived School Satisfaction of Adolescents

Variables	Perceived School Satisfaction	School-related Social Support by Teachers	School-related Social Support by Classmates
School-related Social Support by Teachers	1.000	0.423***	0.391***
School-related Social Support by Classmates		1.000	0.214***
Perceived School Satisfaction			1.000

Note. *** $p < 0.001$

The Effect of School-related Social Support on Adolescents' Perceived School Satisfaction

To identify the model for predicting perceived school satisfaction of adolescents, multiple regression was used. Table 8 shows the intercept, unstandardized regression coefficient and standardized regression coefficient for the model.

Table 8 Multiple Regression Analysis for Predicting Adolescents' Perceived School Satisfaction from School-related Social Support

Variables	<i>B</i>	β	<i>t</i>	<i>R</i>	<i>R</i> ²	<i>Adj R</i> ²	<i>F</i>
Perceived School Satisfaction	26.379			.394	.155	.150	29.150***
School-related Social Support by Teachers	.183	.366	6.418***				
School-related Social Support by Classmates	.026	.059	1.031				

Note. *** $p < 0.001$, *B* = Unstandardized Coefficient, β = Standardized Coefficient

The results revealed that perceived school satisfaction was explained by school-related social support by teachers and classmates. Multiple regression analysis revealed that the model significantly explained school satisfaction of adolescents, $F = 29.150$, $p < 0.001$ and *R* for the model was 0.394 and explained for 15% of the variance in school satisfaction. By applying multiple regression analysis presented above, the resultant model for school satisfaction can be defined as in the following equation.

$$\text{School Satisfaction} = 26.379 + 0.183SSTr$$

Note. *SSTr* = School-related Social Support by Teachers

The findings indicated that school-related social support by teachers was the most significant predictor in predicting adolescents' perceived school satisfaction ($\beta = 0.366$, $p < 0.001$). The results indicated that school-related social support by teachers was the predictor of school satisfaction (see Figure 5).

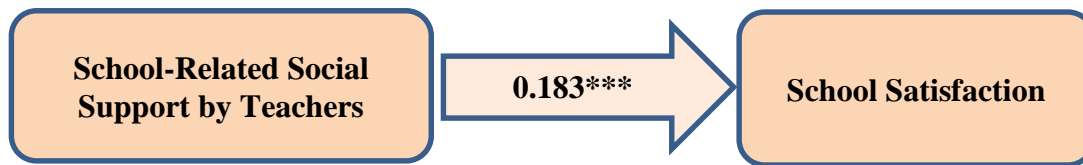


Figure 5 Predictive Power of School-related Social Support by Teachers on School Satisfaction of Adolescents

Discussion

In this study, it was found that the mean score of school satisfaction for female adolescents was significantly higher than that of male adolescents. This finding was consistent with previous studies (Chouhan et al., 2017; Epstein, 1981; May Cho Min, 2012; Medley, 1980; Okun et al., 1990). This study revealed that there was no significant difference of adolescents' school satisfaction by grade. The result was inconsistent with previous study of Cici (2006) stating that younger students reported significantly higher levels of school satisfaction. However, the result was consistent with previous studies (e.g., Okun & Weir, 1990) indicating that grade level was unrelated with school satisfaction.

Regarding school-related social support, there was no significant gender and grade difference of school-related social support by teachers and classmates. Moreover, the results indicated that school-related social support by teachers and classmates were positively correlated with school satisfaction of adolescents. Schools and classrooms are among the most important settings in childhood and adolescence, where social interactions with teachers and classmates take place. School-related social support (i.e., social support from teachers and classmates) influences the perception of school lives directly. Students' perceived school-related social support was found to be associated with their short- and long-term school satisfaction (Jiang et al., 2013; Liu et al., 2016). Thus, adolescent levels of school satisfaction are important to understand, monitor, and consider in the development, implementation, and evaluation of their school experiences.

This study indicated that school-related social support by teachers was a significant predictor of adolescents' school satisfaction. The finding was consistent with previous studies (e.g., Coelho & Dell'Aglio, 2019) that investments in improving students' school satisfaction can be promoted with emphasis on the teacher-student relationship. Teachers are often established as significant others in students' lives (Brophy 1981) who are the adults in school that know and care most about students. This result is congruent with past studies conducted by Hamre and Pianta (2001) in which teacher support is essential to students' school satisfaction. Moreover, previous study indicated that teacher support had significant contribution to school satisfaction (Cici, 2006). Therefore, school satisfaction can be promoted with emphasis on the teacher-student relationship.

It is needed to have transparency between teachers and adolescents; and between their classmates. Having a good behavior in adolescents is essential because it starts with positive communication and a warm relationship. Practical tips such as taking time to actively listen, set clear rules about behavior, encourage self-reflection, and try to be a positive role model, help the adolescents put a positive approach to behavior into action. Above the tips make the adolescents to satisfy at school.

Limitations of the Study and Future Research

In this study, there were only four schools from Bago and Yangon Region. Future research may investigate the effect of school-related social support on perceived school satisfaction among adolescents from other regions and states. The results may not represent all adolescents in Myanmar. This study examined only late adolescents from Grade 10 and Grade 11 students. Future

research needs to examine early adolescents. Future research should be investigated whether stability or changes in social support from teachers and classmates contribute to changes in school satisfaction.

Acknowledgements

We would like to offer our respectful gratitude to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-rector, Yangon University of Education) for allowing us to do this study. And we would like to express our honorable gratitude to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her great support for our study. Then, we would like to convey special thanks to all participants in this study.

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A STUDY ON SOCIAL-CONNECTEDNESS IN ADOLESCENTS

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Abstract

The primary purpose of this study was to investigate social-connectedness in adolescents. A total of 300 adolescents (127 males and 173 females) from two high schools in the Yangon Region participated in this study. The descriptive survey research method was applied and quantitative data analysis was executed in this study. As the instrument, the Student Sense of Connectedness Scale (SSCS) questionnaire was used. Adolescents' social-connectedness was significantly different by gender and school. There was no statistically significant difference in the sense of belonging with peers by gender. There was a statistically significant difference in teacher support, fairness and respect and engagement in community by gender at 0.05 level. There was a statistically significant difference in relatedness of self with school and academic engagement by gender at 0.001 level. There was no statistically significant difference in engagement in community and academic engagement by school. There was a statistically significant difference in teacher support, the sense of belongingness with peer and relatedness of self with school by school at 0.01 level. There was statistically significant difference in fairness and respect by school at 0.001 level. It can be concluded that adolescents are close, cared for and connected to others.

Keywords: Connectedness, Social-connectedness, Adolescents

Introduction

Having satisfactory relationships with others is a basic need for most of the people. According to Baumeister and Leary (1995), the need to be socially connected to others is “a fundamental human motivation”. Feeling lonely, isolated, unrelated to others, alienated from others, and a lack of belonging are unpleasant experiences for most of the people. Accordingly, they strive to restore relationships, maintain friendships, participate in group activities, and avoid jeopardizing social bonds. This process of striving for connection may have an adverse effect on well-being and mental health of the people (e.g., lack of social connections may cause psychological distress) because the individuals are more likely to experience problems to meet the need to maintain interpersonal relationships and participation in social activities (Satici, Uysal, & Deniz, 2016).

Social-connectedness is a concept which can be defined as the perceptions related to long-term interpersonal relationships and social environment (Lee et al., 2000) and that arise from interpersonal relationships within social networks. Lee and Robbins (2000) considered that social-connectedness can satisfy one's sense of belonging, and it is based on long-lasting interpersonal relationships. Also, Lee and Robbins (1998) described social-connectedness as one's sense of belonging to the social world, including family, friends and colleagues and one's belief of self in relation to others.

Social-connectedness occurs when an individual actively interacts with another person or group, then this interaction increases well-being and may reduce anxiety (Malaquias, Crespo, & Francisco, 2015). On one hand, individuals who are socially connected usually see others as friendly. On the other hand, individuals with low social-connectedness mistrust others and avoid social opportunities (Detrie & Lease, 2007).

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Social-connectedness has multi-dimensions and it comprises engagement, loneliness, affiliation, companionship, and belongingness (Arundell, Salmon, Veitch, & Timperio, 2019) Baumeister and Leary (1995) differentiated social-connectedness from belongingness, and they defined this construct by being a member of a group. Social-connectedness has two main components. The first one is the relation and connection (bond) individuals experience with others. The second one is autonomy that means the degree to which individuals feel socially supported and satisfied (Barber & Schluterman, 2008).

Social-connectedness might have an impact on psychological and individual functioning. Some research has revealed that social-connectedness was related to higher levels of well-being (Griffiths et al., 2007). McLoughlin and colleagues (2019) explained that low social-connectedness may result in depression, anxiety, and stress. Likewise, research has shown people with low connectedness often experience less satisfaction with their social relationships (Satici et al., 2016). They may also have problems with managing their internalizing symptoms (Faro, McKee, Garcia, & O'Leary, 2019). Similarly, Lee and colleagues (2001) found that people with a higher sense of social-connectedness are more active in social life, establish relationships easily, and perceive their environments in a positive manner. Therefore, this study demands researcher to explore social-connectedness of adolescents.

Purpose of the Study

The main aim of the study was to explore social-connectedness of adolescents.

1. To investigate adolescents' social-connectedness by gender and school
2. To explore components of social-connectedness of adolescents
3. To investigate adolescents' social-connectedness sub-scales by gender and school

Definitions of Key Terms

Connectedness. Connectedness is 'the degree to which individuals experience the people and places in their lives as personally meaningful and important'.(Schulze & Naidu,2014)

Social-connectedness. Social-connectedness can be defined as the perceptions related to long-term interpersonal relationships and social environment and that arises from interpersonal relationships with social networks. (Lee et al., 2000)

Adolescents. Defined by the United Nations as those between the ages of 10 and 19, adolescents experience a transition period between childhood and adulthood and with it, significant growth and development (WHO, 2019).

Review of Related Literature

Social-connectedness of Adolescents

Social-connectedness is defined as feelings of belonging and closeness to others, as well as satisfaction with relationships and perceived support and opportunities for self-disclosure of personal information. It comprises different domains (peer, school, family and community/neighborhood) and is a key social determinant of adolescent mental health and well-being. Family connectedness in particular has been found to buffer the negative effects of bullying and to be related to lower risk for suicide-related outcomes and depressive symptoms. The notion of social-connectedness refers to one's ability to feel comfortable, confident and have a sense of belonging

within a larger social context than family or friends (Lee & Robbins, 1995). If a person is struggling to find a sense of connectedness, they may feel that they cannot relate to the people around them, they may struggle to develop relationships or to understand their role in the world, and feel isolated as a result (Lee & Robbins, 1995). These feelings of isolation can then lead to other consequences such as low self-esteem, distancing one's self from society, a lack of trust, and also the absence of a sense of belongingness and feelings of loneliness (Lee & Robbins, 1995). Being socially connected has been found to reduce levels of depression and emotional/ behavioral difficulties (Fraser & Pakenham, 2009).

Research has identified links among aspects of adolescent functioning and connectedness to four particular social contexts: family, school, peers, and neighborhood and community. The importance of examining all four of these ecological environments that influence adolescents' development has been argued by Seidman (1991), and recently reiterated by Urban, Lewin-Bizan, and Lerner (2009). Moreover, ecological approaches acknowledge that adolescents are embedded within multiple social contexts simultaneously and emphasize that these contexts likely work together to influence adolescent health and adjustment (Bronfenbrenner, 1979). Despite the reality of adolescents experiencing connectedness in multiple social contexts, most of what we know about the relation between connectedness and adolescents' psychological health stems from research that focuses on only one or two of these contexts at a time. Examining the same conditions in multiple contexts enables the investigation of questions such as: "Is connectedness to a particular domain more important than others?"

Libbey, Ireland, and Resnick (2002) conducted one of the few studies to examine all four key social domains (family, friends, school, and neighborhood). In another study, McGraw, Moore, Fuller and Bates (2008) examined connectedness (family, peers, and school) and well-being in a large sample of Australian adolescents. Results indicated that connectedness, across all domains, was inversely related to symptoms of depression, anxiety, and stress. Furthermore, connectedness to peers was a particularly strong predictor of well-being. In this study, the researchers explored components of adolescents' social-connectedness.

Participants of the Study

The participants in this study were selected the Grade Ten students from two Districts in the Yangon Region. The participants were (150) students in B.E.H.S Myoma, Hlegu District and (150) students in B.E.H.S (1) Hlaingtharyar, Insein District. A total of (300) grade ten students participated in this study.

Research Method

In this study, social-connectedness with school community of adolescents in the Yangon Region was examined by using the questionnaires survey method.

Rovia (2002), the Student Sense of Connectedness Scale (SSCS) provided the students' sense of social-connectedness with their school community of adolescents. The Student Sense of Connectedness Scale (SSCS) consisted of six sub scales such as the sense of belonging with peers (5 items), Teacher support (7 items), Sense of fairness and safety at school (5 items), Engagement in community (2 items), Relatedness of self with school (8 items) and Academic engagement (4 items) totally included 31 items. In this study, it was used for Four Point Likert-Scale which were strongly agree, agree, disagree and strongly disagree.

And then, the pilot study was done with a sample of 30 students from BEHS (3) Tharkayta Township on September 2022 to determine the clarity of items words and appropriateness of the items included in the questionnaire. After testing the pilot study, the Cronbach Alpha was conducted by using Statistic Packages for the Social Science (SPSS) to investigate the reliability and validity of the items. In computing, the Cronbach Alpha value was 0.806 for SSCS. So, SSCS has good reliability to use in the research study.

Data Analysis and Findings

Mean Comparison for Social-connectedness in Adolescents

To investigate the total of adolescents' social-connectedness in their school community, descriptive statistic was computed.

Table 1 Mean and Standard Deviation of Social-connectedness in Adolescents

Variable	<i>N</i>	Mean	<i>SD</i>	Minimum	Maximum
Social-connectedness	300	96.02	12.39	47	143

According to Table 1, it could be concluded that the total mean score of social-connectedness was 96.02 and the standard deviation was 12.39. The maximum and minimum scores of adolescents' social-connectedness were 143 and 47 respectively. So, it can be seen that adolescents' social-connectedness was satisfactory because the mean score (96.02) was higher than the theoretical mean (77.5).

Mean Comparison of Social-connectedness in Adolescents by Gender

In order to examine whether there is a significant difference in social-connectedness in adolescent by gender. Independent sample *t*-test was used and reported in Table 2.

Table 2 Mean Comparison of Social-connectedness in Adolescents by Gender

Variable	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Social-connectedness	Male	127	93.62	13.32	-2.907**	248	.004
	Female	173	97.78	11.39			

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

The result in Table 2 pointed that mean scores of female students were higher than the male students in social-connectedness. There was a statistically significant difference in social-connectedness by gender at 0.01 level.

Mean Comparison of Social-connectedness of Adolescents by School

In order to examine whether there is a significant difference in social-connectedness in adolescent by school. Independent sample *t*-test was used and reported in Table 3.

Table 3 Results of Independent Sample *t*-test for Social-connectedness in Adolescents by School

Variable	School	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Social-connectedness	School 1	150	93.46	13.431	-3.610***	287	.000
	School 2	150	98.54	10.727			

***Mean difference is significant at the 0.001 level.

According to Table 3, mean scores of school 2 were higher than that of school 1 in social-connectedness. There was a statistically significant difference in social-connectedness by school at 0.001 level.

Mean Comparison for Six Sub-scales of Social-connectedness of Adolescents

In order to examine six sub-scales of social-connectedness of adolescents, descriptive statistic was computed.

Table 4 Comparison of Mean Percentage for Six Sub-scales of Social -Connectedness of Adolescents

Subscales of Social-connectedness	No. of Items	Mean	<i>SD</i>	Mean%
The sense of belonging with peer	5	14.33	2.66	71.65%
Teacher Support	7	23.11	3.41	96.29%
Sense of Fairness and Safety at School	5	14.82	2.88	74.10%
Engagement in Community	2	5.76	2.23	72.00%
Relatedness of Self with School	8	25.32	4.57	79.13%
Academic Engagement	4	12.67	1.97	79.19%

According to Table 4, it could be concluded that the mean percentage of teacher support was the highest among all sub scales of social-connectedness. The mean percentage of the sense of belonging with peers and engagement in the community was the lowest among all sub scales of social-connectedness. The mean percentage of sense of fairness and safety at school, relatedness of self with school and academic engagement were the moderate percentage.

Therefore, the students’ perception of teacher support in the classroom was higher than the other factors in their school community. Students who did not have experience acceptance by peers, moreover they had less interest in their school community.

Mean Comparison for Six Sub-scales of Social-connectedness of Adolescents by Gender

To find out for Six Sub-scales of Social-connectedness of Adolescents by gender, the descriptive statistic was computed.

Table 5 Independent Sample *t*-test for Six Sub-scales of Social-connectedness of Adolescents by Gender

Variables	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
The Sense of belonging with Peer	Male	127	14.55	3.40	1.234	298	.218
	Female	173	14.17	1.95			
Teacher Support	Male	127	22.57	3.73	-2.397*	298	.017
	Female	173	23.51	3.10			
Sense of Fairness and Safety at School	Male	127	14.41	3.25	-2.130*	298	.034
	Female	173	15.12	2.54			
Engagement in Community	Male	127	6.11	3.03	2.352*	298	.019
	Female	173	5.50	1.32			
Relatedness of Self with School	Male	127	24.04	4.37	-4.286***	298	.000
	Female	173	26.27	4.50			
Academic Engagement	Male	127	11.94	1.89	-5.789***	298	.000
	Female	173	13.21	1.85			

*Mean difference is significant at the 0.05 level.

***Mean difference is significant at the 0.001 level.

According to the results of Table 5, the mean scores of male students were higher than the female students in the sense of belonging with peers and engagement in the community. The mean scores of female students were higher than the male students in teacher support, sense of fairness and safety at school, relatedness of self with school and academic engagement.

There was no a statistically significant difference in the sense of belonging with peer by gender. There was a statistically significant difference in teacher support, sense of fairness and safety at school and engagement in community by gender at 0.05 level. There was a statistically significant difference in relatedness of self with school and academic engagement by gender at 0.05 level.

Male students were more free and friendly than female students in each other. Moreover, males wanted to extend into the engagement both throughout and beyond the school community. Girls were more trust in communication, they expected to receive respect of teachers and girls who experienced acceptance by peers and teachers were more likely to be interested in and enjoy school.

Mean Comparison for Six Sub-scales of Social-connectedness of Adolescents by School

To examine for Six Sub-scales of Social-connectedness of Adolescents by school, independent sample *t*-test was computed and results were reported in Table 6.

Table 6 Independent Sample *t*-test for Six Sub-scales of Social-connectedness of Adolescents by School.

Variables	School	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
The sense of Belonging with Peer	School 1	150	13.80	2.357	-3.499**	297	.001
	School 2	150	14.86	2.855			
Teacher Support	School 1	150	22.51	3.613	-3.096**	297	.002
	School 2	150	23.71	3.096			
Sense of Fairness and Safety at School	School 1	150	14.14	3.083	4.207***	297	.000
	School 2	150	15.50	2.492			
Engagement in Community	School 1	150	5.83	2.833	0.550	297	.582
	School 2	150	5.68	1.386			
Variables	School	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Relatedness of Self with School	School 1	150	24.63	4.890	-2.634**	297	.009
	School 2	150	26.01	4.142			
Academic Engagement	School 1	150	12.56	1.870	-.932	297	.352
	School 2	150	12.77	2.057			

**Mean difference is significant at the 0.01 level.

***Mean difference is significant at the 0.001 level.

The mean score of school 1 was higher than that of school 2 in engagement in the community. The mean score of school 2 was higher than that of school 1 in the sense of belonging with peer, teacher support, sense of fairness and safety at school, relatedness of self with school and academic engagement.

There was no statistically significant in engagement in community and academic engagement by the school.

There was statistically significant difference in teacher support, the sense of belongingness with peer and relatedness of self with school by the school at 0.01 level.

There was a statistically significant difference in the sense of fairness and safety at school at 0.001 level.

Conclusion

The main purpose was to explore social-connectedness of adolescents in Yangon Region. A total number of 300 Grade Ten students from two Basic Education High Schools, Hlegu District and Insein District participated in this study

In addition, the mean score of female was higher than the male of social - connectedness in adolescences. Female was higher than male of social-connectedness because of sufficient opportunities for female students to make all important connections with peers that leads them to feel a sense of membership at school than male students.

From the results of the independent sample *t*-test, school 2 students' mean scores were higher than school 1 students. It could be interpreted that adolescent social-connectedness explicitly conveys both adolescents' attitudes toward, and behavioral activity in, their social ecology, and the relationships within it.

Moreover, among the mean scores of six sub scales could be concluded that Teacher Support mean scores were higher than the other sub-scales mean scores and also Teacher Support mean percent, too. The means scores of the Peer factor and Engagement in Community factor were the lowest scores in all factors. The medium factors were Sense of Fairness and Safety at School, Relatedness of self with school and Academic engagement.

There were significant differences between genders in sub scales and it showed that the sense of belonging with peer and engagement in community of mean scores of male students were higher than the female students. Moreover, teacher support, sense of fairness and safety at school, relatedness of self with school and academic engagement of mean scores of female students were higher than the male students.

In a previous study, gender differences had been found in social support and social networks across the aging process. Social-connectedness varies more by gender than any other demographic characteristic. In general, females had larger and more varied social networks with more friends and more social support than males. Males tend to maintain intimate relationships with only a few people, while females identify more people as being important to them or as people they care about. (Naz, Shah, & Qayum, 2020)

Teacher Support, Sense of Fairness and Safety at School, Relatedness of self with School and Academic Engagement mean scores of school 2 were higher than that of school 1 but the sense of belonging with peer and Engagement in community mean scores of school 1 was higher than that of school 2. Especially, relatedness of self with school mean scores of school 2 was higher than that of school 1.

In previous research, people with high connectedness tend to feel very close to other people, easily identify with others, perceive others as friendly and approachable, and participate in social groups and activities. Kohut (1984) speculated that people with low connectedness failed to develop appropriate interpersonal behaviors necessary to maintain relationships later in life.

Limitations of the Study

Although the results supported the study aims as mentioned above, there are some limitations. The sample size was not sufficient to represent adolescents in all of the high schools in Myanmar. Moreover, the sample used in this study is only Grade Ten students in two high schools. So, it may not be representative of the adolescents who are attending in 2022-2023 Year.

Acknowledgements

We would like to express our heartfelt gratitude to the following individual who helped their invaluable support in completion of this term paper and respectful gratitude to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu, Dr. Khin Khin Oo and Dr. Nyo Nyo Lwin (Pro-rectors, Yangon University of Education) for their administrative supports, perfect guidance, official permissions and encouragement. We wish to express our genuine gratitude to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her friendly guidance, teaching and invaluable advice throughout the study.

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TEACHING AND RESEARCH APTITUDE OF BEd AND MEd STUDENTS IN YANGON UNIVERSITY OF EDUCATION

Yupar Myint¹, May Ko Ko Lwe²

Abstract

Teachers are the backbone of every society and they play a vital role in nurturing the mind of the young child. Teachers in this era are research oriented. If the lower aptitude is possessed, the lower the probability of achievement will be gained. Therefore, this study investigated teaching and learning aptitude of BEd and MEd students in Yangon University of Education (YUOE). By using stratified random sampling technique, 246 students were chosen for this study. A descriptive survey design was utilized. Teaching and research aptitude test including teaching aptitude, research aptitude and general knowledge was applied in this study. The results revealed that the research aptitude of those students was the lowest among teaching aptitude and general knowledge in this study.

Keywords: Aptitude, Teaching Aptitude, Teaching and Research Aptitude

Introduction

The development of human resources can create the progress and prosperity of a nation. Therefore, it is highly needed to have competent teachers in a nation. Teaching is a great profession throughout the world. The person who chooses teaching as a profession must believe that all the necessary qualities must be possessed to become an effective teacher.

Teaching is a process involving the interaction of teachers and students for their mutual benefit in the teaching learning process. In this process, they have their own target and objective. As a creative and highly complex activity, teaching consists of mastering of subject matter, planning instruction, inspiring pupils, evaluating the achievement, establishing upgraded learning, applying efficient methods and managing the classroom.

An aptitude which is known as an innate, acquired, learned or developed component of competency to a certain kind of work at a certain level may be physical or mental. In daily life, aptitude is essential for reacting calmly under pressure. In education, it can help in identifying a student's strengths in order to achieve his or her goal based on his or her best skills and systematic training.

The term research comprises of two words, namely 're' and 'search'. Generally, 're' means 'again' and 'search' means 'to find out'. According to Advanced Learner's Dictionary, 'research is a careful investigation or inquiry specially to search for new facts in any branch of knowledge' (Madaan, 2017). Research aptitude means an aptitude for investigation, an effort made to uncover facts scientifically and objectively. Again, teaching aptitude is the interest in teaching himself and the capacity for acquiring proficiency with the help of suitable training and practice.

In the teaching-learning environment, difficulties may be faced so while trying to reach an efficient goal. To overcome this situation, the teacher has to search for appropriate and efficient ways. A careful investigation or inquiry can search these appropriate and efficient ways. Thus, the teachers must have the ability concerning teaching and research.

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This study mainly focuses on teaching and research aptitude among prospective teachers and post graduate learners in YUOE hoping that this aptitude may be part of the necessary qualities to become an effective teacher.

Purposes of the Study

The aims of the present study are

- (1) to investigate the teaching and research aptitude of BEd students and MEd students in YUOE
- (2) to compare teaching and research aptitude among BEd students and MEd students in YUOE

Definitions of Key Terms

Aptitude. A capacity to acquire proficiency in a given line with a given amount of training. (Kumari, 2022).

Teaching aptitude. A condition or set of characteristics possessed by an individual, indicative of the ability to grasp not only the subject matter but also the aims and processes of education. (Dave, N. & Raval, D., 2015, as cited in Rani, S., 2013).

Operational definition of teaching and research aptitude. The researcher operationally defined the teaching and research aptitude as the ability to learn or perform in teaching and research areas on the basis of marks obtained from the teaching and research aptitude test.

Review of Related Literature

Teaching

Teachers are the backbone of every society and they play a vital role in nurturing the mind of the young child. The best teachers always give knowledge and skills in very effective ways to young students. There are several roles a teacher plays to make the society stronger. Teachers play the role in a variety of ways either formally or informally. Teachers play in society as such roles as resource providers, instructional specialists, curriculum specialists, classroom supporters, learning facilitator mentors and school leaders. Teaching is a great profession throughout the world. The teacher may teach from kindergarten to university. Teaching is a very complex process which brings socially desirable behavioral changes in a person. In the process of teaching, it is required to bring certain changes in a student according to the need of the society where student is living. Effective teaching mostly depends on the teachers. To be effective in teaching, the teachers must know learners and pedagogy and also master subject knowledge (Changder, 2017).

Research

According to Redman and Mory, “research is a systematized effort to gain new knowledge” (Jharotia, 2015). This basically means research is a walking from known thing towards the unknown thing. It is a systematized process of discovery. The concept of teacher-as-researcher also known as teacher-researcher is the idea that a classroom teacher can conduct his or her own studies to improve his or her teaching practices (Creswell, 2005). Some educational experts believe that the increasing emphasis on the teacher-as-researcher reinvents the teacher’s role and improves teaching and students’ learning (Cochian-Smith & Lytle, 1990; Flake & others, 1995; Gill, 1997).

To obtain information, the teacher researcher uses methods such as participants’ observations, interviews and case studies. Learning about educational research methods not only can help to understand the research but also have another practical benefit. The more knowledge about research in educational psychology, the more effect will be in the increasingly popular teacher researcher roles (Airasian & Gay, 2000).

Aptitude

Aptitude refers to the composite ability in natural or acquired capacity, inclination to learn or understand. An aptitude may be the result of either an innate intellectual endowment of special training or both. Aptitude is classified as verbal, numerical, spatial, motor, musical, social, intelligential, natural, mechanical, teaching, academic, learning, etc. Also, it is a present condition with a forward reference. An aptitude is a composite of different component abilities that together make for success in a particular field. If the lower aptitude is possessed, the lower the probability of achievement will be gained. Aptitude tests measure and describe special abilities, capacities or talents which are supposed to determine the level of achievement that is expected from individuals in a specific field. Aptitude tests are measures of potential abilities that foreshadow success on a related task of some future time. (Menka, 2016).

General Knowledge

This test aims to assess the teaching and research aptitude as well as their awareness. Participants are expected to possess and exhibit cognitive abilities which include comprehension, analysis, evaluation, understanding and reasoning. They are also expected to have communication also known as a general knowledge of sources of information. They should be aware of the interaction between people and the environment and their impact on quality of life.

Comprehension is the ability to read and understand the texts they read. Analysis, the systematic study of real and complex value continuous function, is a branch of something with continuous changes and includes the theory of integration, differentiation, measured limited analytic function and infinite series. Again, evaluation is a systematic process of determining to what extent instructional objectives: teaching and research aptitude have been achieved. Reasoning means a process of thinking about something in a logical way in order to form a conclusion. The last part of general knowledge, communication, refers to the ability that the participants use when giving and receiving different kinds of information.

Methodology

Sampling

Year	No. of Students
Second Year	96
Fourth Year	75
Master	75
Total	246

Method

Descriptive survey design was applied in this study,

Instrument

In order to find out the teaching and research aptitude of the participants, a questionnaire constructed by Madaan and Changder (2017) was used. This questionnaire contains 10 items for teaching aptitude, 10 items for research aptitude, 13 items for general knowledge involving communication, comprehension, logical reasoning and data interpretation and 2 open-ended questions. The number of total items is 35.

Data Analysis and Findings

Teaching and Research Aptitude of BEd Students and MEd Students in YUOE

To observe teaching and research aptitude of the participants, descriptive analysis was firstly done. According to Table 1, descriptive analysis revealed that mean percentage of research aptitude subscale was the lowest among those of subscales in teaching and research aptitude.

Table 1 Descriptive Statistics for Teaching and Research Aptitude

Subscales	N	Minimum	Maximum	Mean	Mean Percent (%)	Standard Deviation
TA	246	1.00	10.00	5.30	53.00	1.87
RA	246	.00	10.00	3.65	36.50	1.82
GK	246	.00	11.00	5.83	52.99	1.95
Total	246	5.00	30.00	14.78	49.27	4.01

To compare teaching and research aptitude among BEd students and MEd students in YUOE, one-way ANOVA was computed. According to Table 2, the result showed that there were significant differences among education levels in teaching and research aptitude at $p < .05$.

Table 2 ANOVA Result for Teaching and Research Aptitude

(I)	(J)	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Second Year	Fourth Year	-1.49667*	.57720	.027	-2.8578	-.1355
	Master	-3.53667*	.57720	.000	-4.8978	-2.1755
Fourth Year	Second Year	1.49667*	.57720	.027	.1355	2.8578
	Master	-2.04000*	.61162	.003	-3.4823	-.5977
Master	Second Year	3.53667*	.57720	.000	2.1755	4.8978
	Fourth Year	2.04000*	.61162	.003	.5977	3.4823

*The mean difference is significant at the 0.05 level.

Critical Analysis on Open-ended Questions

To collect this data, the participants were asked to answer the two open-ended questions which were (1) to write down their attitudes toward conducting research in educational field and (2) the types of research they want to conduct. Responses for these two open-ended questions were coded and analyzed.

Specifically, participants' responses to the research questions were reviewed and explored the following major themes by summarizing the significant key answers from participants' responses as the important discoveries of this study.

The responses, frequency and percentages to the first open-ended question which was about the attitudes toward conducting research in educational field were shown in Table 3.

Table 3 Responses, Frequency and Percentages to Attitudes toward Conducting Research in Educational Field

No	Responses	Frequency	Percentage
1	Conducting research in educational field is very beneficial for - studying current problems - overcoming educational challenges - changing teaching strategies - making effective teaching and learning - developing education system	99	41.59
2	Conducting research in educational field is important to - improve the abilities of teachers and students - find out educational problems and solutions - become better education system	29	12.18
3	Conducting research in educational field is essential for - producing qualified teachers - developing education system	11	4.62
4	Conducting research in educational field is good because it - solves educational problems - makes deeper understanding about educational field - gives feedback to education system - helps the needs of educational field - promotes the level of society	75	31.51
5	Conducting research in educational field is interesting.	5	2.10
6	Conducting research in educational field is complex and difficult.	2	0.84
7	Conducting research in educational field is not affect in real situation. (e.g urban and rural)	2	0.84
8	Another answers	15	6.30

According to Table 3, the students have received knowledge related to research. They answered about conducting research in the educational field that it is (1) very beneficial for developing education system, (2) important to find out educational problems and solutions, (3) essential for producing qualified teachers, (4) good because it promotes the level of society and (5) interesting. Most responses represent positive attitudes toward conducting research in the educational field although a few responses state that research in educational field does not affect in the real situation. (e.g urban and rural). Based on the result, most students accept the benefits of conducting research in educational fields.

Then, the responses, frequency and percentages to the second open-ended question which was about the types of research they want to conduct were shown in Table 4.

Table 4 Responses, Frequency and Percentages to Types of Research Wanted to Conduct

No.	Responses	Frequency	Percentages
1	Survey research - to collect data from a large simple size - to collect data easily - to collect data online - to save time consuming	36	17.31
2	Quantitative research - to test hypotheses - to get numerical data	34	16.35
3	Experimental research - to conduct by the researcher - to face educational challenges - to get fundamental principles	41	19.17
4	Qualitative research - to explore ideas, meanings and thoughts - to study in depth	15	7.21
5	Action research - to improve educational practice in classroom - to enhance students' abilities	11	5.29
6	Case study - to study in depth	6	2.88
7	Longitudinal research -to get information how people develop over time	1	0.48
8	Deductive method - to generate from general to specific	10	4.08
9	Observation - to observe detail	7	3.37
10	Not sure	25	12.01

According to Table 4, students were examined to be knowledgeable concerning with types and natures of research in educational fields. They want to conduct (1) survey research - to collect data from a large simple size easily, (2) quantitative research - to get numerical data, (3) experimental research - to get fundamental principles, (4) qualitative research - to explore ideas, meanings and thoughts, (5) action research - to improve educational practice in classroom, (6) case study - to study in depth (7) longitudinal research - to get information how people develop over time, (8) deductive method - to generate from general to specific and (10) observation - to observe detail. Although some students are not sure what type of research wanted to conduct, most students answer types of research wanted to conduct with reasons why they want these types. The result showed that the students' research knowledge will contribute to their research studies.

Discussion

The main aim of this study was to investigate the teaching and research aptitude of BEd students and MEd students in YUOE. This study also compared teaching and research aptitude among BEd students and MEd students in YUOE.

The results revealed that second year students are knowledgeable concerning educational research although they are taught in curriculum widely. However, they are also learning about educational research in their environment informally. Although research aptitude subscale was the lowest among the three subscales in teaching and research aptitude.

In teaching aptitude, according to Yar Zar Chit (2020), the teacher trainees' teaching aptitude was significantly improved during three academic years. In the study of Shallu Rani, there was no significant difference between the teaching aptitude among (boys and girls) B.Ed. student teacher. The result of Abdullah (2022) showed that there was a significant difference between trained and un-trained secondary school teachers on teaching aptitude.

In this study, the teaching and research aptitude of BEd students and MEd students in YUOE were different according to education level. The teaching and research aptitude of master students were significantly improved compared with BEd students. Fourth year students were also more improved than second year students. The results of open-ended questions stated that all students were knowledgeable related to the types, natures and effectiveness of educational researches. They also have knowledge of some characteristics of research types. However, the research aptitude of the students was needed to improve.

Conclusion

This present research found that there were significant differences according to education level in teaching and research aptitude. Although they are knowledgeable in educational researches, research aptitude is needed to improve. The research aptitude can be improved by training effectively. Therefore, it is needed to carry out in educational research in this era and the education system can be developed by conducting educational researches.

Limitations of the Study

Further research can be conducted with large sample size in EDCs including the students from SUOE and UNDRs because sample size participated in this study was small.

Acknowledgements

We would like to offer our respectful gratitude to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-rector, Yangon University of Education) for allowing us to do this study. And we would like to express our honorable gratitude to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her great support and expert guidance for our study. Then, we would like to special thanks to all participants of this study.

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A STUDY ON ACADEMIC SELF-CONCEPT OF FIRST YEAR STUDENT TEACHERS

Nu Nu Yee¹, Tin Mar Naing², Si Thu Hein³

Abstract

The primary purpose of this study was to investigate the academic self-concept of first year student teachers in Yangon University of Education. The descriptive survey research method was applied and quantitative data analysis was executed in this study. As the research instrument, the three dimensions of the academic self-concept questionnaire developed by Liu and Wung (2005) was applied in this study. A total of 19 items with three dimensions: academic motivation, academic persistence and academic ability were involved. The total of 300 first year student teachers (150 males and 150 females) from Yangon University of Education. Independent sample *t*-test and ANOVA results revealed that student teachers' academic self-concept differed depending on gender, subject stream, father's job and mother's job. The female student teachers were higher in self-concept than male student teachers. Student teachers who were in arts and science were better than those with science subject stream in academic motivation. In addition, student teachers whose father's job in self-employed was better than those with random academic persistent. Student teachers' mother jobs as house keeper were better than those with government staff and self-employed in academic motivation.

Keywords: Self-concept, Academic self-concept, Academic motivation

Introduction

Educational psychology contributes important background knowledge that pre-service teachers (student teachers) and in-service teachers can utilize as the foundation for professional practice. Educational psychology can be referred to as a distinct scientific discipline within psychology that comprises both a method of study and a resulting knowledge base. It is thought that the development of students' self-concept depends on the focus of educators on educational psychology in classroom practice. A student's favorable self-concept can positively impact their academic performance by fostering optimistic personal expectations about themselves.

Success in school favorably influences one's academic self-concept (Marsh & Yeung, 1997), which in turn affects a student's desire for learning and academic endeavors (Prince & Nurius, 2014). According to Bong and Skaalvik (2003), academic self-concept also influences the amount of effort students put into their learning pursuits, how persistent they are in the face of learning challenges, their approaches to tackling these challenges with the help of others, and their overall motivation for learning.

Not all university students have the academic self-concept required for an effective transition from high school to university. This may impact their aptitude for learning so negatively that their engagement in lifelong learning, a prerequisite for success at and beyond university, may be limited. Moreover, academic self-concept is one of the most important variables in the academic domain due to its significant impact on appropriate cognitive functioning. According to Marsh and Rhonda (2002), it is the opinion and assessment that a student has or makes of their academic abilities. Zimmerman (2000) demonstrated how different cognitive and self-regulatory methods

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that are based on an academic self-concept might lead to improved academic achievement. So, it can be said that academic self-concept directly affects learning processes, academic achievement, and expectations of students (Henson & Heller, 2000).

Academic self-concept consists of different aspects which are linked to the academic achievement of the pupils (Liu & Wang, 2005). Students' academic self-concept are more or less concerned with their results in examination. This achievement of students is much more linked to their knowledge about the potential and talents they possess. Therefore, the present study will observe the academic self-concept of first-year student teachers at Yangon University of Education.

Purposes of the Study

The primary purpose of the study was to investigate the academic self-concept of student teachers from Yangon University of Education. The specific objectives of this study are:

1. To examine the academic self-concept of student teachers by gender
2. To investigate the academic self-concept of student teachers by their subject stream
3. To explore the academic self-concept of student teachers by their age, their parent's education and job.

Definitions of Key Terms

Self-concept. Self-concept is generally defined as the knowledge and view about oneself. It is built on self-awareness and assessment of qualities and characteristics made through involvements in one's situation (Eccles, 2005).

Academic self-concept. Academic self-concept is defined as perceptions of individuals' capacity and competence level regarding his or her abilities within the academic settings (Reynold, 1988). It can also be defined as how an individual feels about himself as learner and play his role in academic settings (Guay, Marsh & Boivin, 2003).

Academic motivation. Academic motivation is a student's desire (as reflected in approach, persistence, and level of interest) regarding academic subjects when the student's competence is judged against a standard of performance or excellence (Wigfield & Eccles, 2002).

Review of Related Literature

Theory of Self-concept

The academic self-concept has a long history in the fields of education and psychology. In essence, it is in charge of figuring out how social and academic roles affect people's emotional well-being (Vaughan, Elbaum & Boardman, 2001). Academic self-concept is typically considered a significant academic output. It may be described as an overall perspective of one's surroundings as well as a picture of oneself that is based on information acquired and evaluated via experiences (Eccles, 2005). Academic self-concept is defined as the intellectual attitude of personality. Students believe in themselves and their abilities make them able to deal with the practical issues of professional life. It is commonly referred to as the complex, planned and self-motivated system of opinions, outlooks, and thoughts that each human comprehends to be accurate practically regarding his survival. Self-concept and academic achievement are collaborative and mutual. According to Adler (1930), having an intellectual self-concept helps one set and realize goals as well as offer

life new meaning and perspective. It enhances the idea about one's view regarding the world and it improves one's image of the world and creates a more favorable future vision. Additionally, it helps a person understand who they are, what they are capable of doing, and what they are not (cited in, Guay, Marsh, & Boivin., (2003).

The formation of one's self-concept is influenced by a variety of factors, including parental upbringing, ongoing failure, depression, and internal self-criticism. A positive self-concept can be expanded by acting objectively in knowing oneself, always appreciating oneself, being friends with oneself, and always having positive and rational thinking.

Studies conducted by Marsh, Hau, and Kong (2000) and Trautwein et al. (2006) revealed that the academic self-concept of the pupils can be increased and improved when they engaged in the high achiever group within the classroom situation, and they adjust the characteristics of others in the group in order to understand and enhance their academic self-concept and hence their achievement.

Thus, a learner's enthusiasm for learning outside of school as well as cognitive development in formal educational settings can both be negatively impacted by a lower academic self-concept. A learner who perceives themselves as having a low academic self-concept is probably not motivated to pursue lifelong learning. Therefore, lifelong learning opportunities provided by governmental and non-governmental agencies will fail to reach such individuals. In contrast, learners with a high academic self-concept will stay focused and work hard to succeed (Biney, 2015); they will also be more likely to participate in lifelong learning activities.

Self-Worth Theory

The construct of self-concept is grounded primarily in self-worth theory (Covington, 1992). Briefly, self-worth theory suggests that all individuals have a motivational “tendency to establish and maintain a positive self-image, or sense of self-worth” (Eccles & Wigfield, 2002).

The idea of the self-concept comes mainly from the self-worth theory (Covington, 1992; Eccles & Wigfield, 2002). This theory proposed that all humans have a capacity to build and keep constructive and optimistic self-image and sense of pride and self-worth (Covington, 2000). It asserts that since children spend most of their time being evaluated in school, it is noteworthy to maintain and develop a positive academic self-concept. The academic self-concept of the students plays an important role in their academic progress (Shumane, 2019). It is the ability and assurance of a student about his or her own skills to overcome academic challenges and hurdles successfully. Parents no doubt try to help and guide their children in their studies, but mostly in the early classes.

It is also important to improve and uphold constructive academic self-concept, in such a way that all the students learn with their own will. The students also show a positive attitude towards gaining and acquiring knowledge without having a competitive environment (Covington, 1998). The cooperative learning atmosphere helps each and every student in the classroom to avoid failure in academics and hence promote ones 'understanding regarding one's own self. (Eccles & Wigfield, 2002).

Self-concept is vibrant and dynamic in nature as it gains maturity with the age of the person and this aspect basically plays a vital role in determining that it can be modified and changed. It is not constant because as the person becomes older, he/she gets more insight about his/her abilities, capacities and gets more knowledge about his/her potentialities and knows how to come across

different situations in life (Franken, 1994). Self-concept is the set of views and opinions an individual has about himself, such as qualities, characteristics, lacks, deficiencies, capabilities and capacities, limits and relationships in which an individual thinks/describes his individuality (Marsh & Yeung, 1997). Self-concept is the knowledge and approach a person has about himself. It is the insight that the individual has about himself and the way how he describes his abilities and potentials. Self-concept has great significance and contributed a lot in building personality of an individual. It is how students do school work and feel about themselves as learners. It asserts that since children spend most of their time being evaluated in school, it is noteworthy to maintain and develop a positive academic self-concept.

Trautwein, et al. (2006) said that academic self-concept is referred to as a person's self-evaluation regarding specific academic domains or abilities (Trautwein, et al. 2006). It is how students do school work and feel about themselves as learners. The construct of self-concept is grounded primarily in self-worth theory (Covington, 1992). Briefly, self-worth theory suggests that all individuals have a motivational "tendency to establish and maintain a positive self-image, or sense of self-worth" (Eccles & Wigfield, 2002). It asserts that since children spend most of their time being evaluated in school, it is noteworthy to maintain and develop a positive academic self-concept. It has been studied that as children devote an important part of their lives to acquiring education and remain under school/classroom evaluation process so they come up with the potentials and competencies they hold within (Covington & Dray, 2002).

From the extensive literature, it has been seen that academic self-concept affects the academic achievement of the students and different researchers measured academic self-concept on certain parameters like gender, levels of study and different programs on which the academic achievement depends. But very few researches have been carried out to study the relationship between academic self-concept and academic achievement of distance learners. Many studies have explored the relationship between academic self-concept and academic achievement in the actual classroom environment. Success and failure in academic settings depends upon the belief one has in his or her abilities and the way one feels about the strengths, capabilities and potentials one possesses. It sometimes seems that achievement depend on the capacity of the students and also how strong their self-concept is regarding their potentials and capabilities they possess.

Method

This study sought to investigate the academic self-concept of student teachers from Yangon University of Education. To achieve the purpose of the study the performance of the research procedures as selecting the sample of the study, research design and method, instrumentation, procedure and collection of the data are presented in this study, descriptive research design and survey methods were conducted. Among the types of survey studies, a cross-sectional survey was used. Student teachers' academic self-concept was examined by using a questionnaire survey method.

Participants of the Study

First year student teachers from Yangon University of Education were selected as a sample for the study in the academic year 2022-2023. Total participants were 300 first year student teachers (150 males and 150 females) were selected as participants in quantitative study. The characteristics of the chosen number of participants are presented in Table 1.

Table 1 Characteristics of Participants for Quantitative Study

Region/State	Teacher Education Institutions	Gender		Total
		Male	Female	
Yangon Region	University of Education	150	150	300

Measures of Academic self-concept. To assess student teachers’ academic self-concept, the Academic Self-Concept Questionnaire (ASCQ) was used. It was designed by Liu and Wung (2005). The ASCQ includes 19 items and it is a kind of self-report measure. It has three subscales; Academic Motivation, Academic Persistence and Academic Ability. There were six items for Academic Motivation. Each item was assessed along a 4-point Likert scale. The Cronbach’s alpha value in this study was 0.75.

Instrumentation and Procedure

The measure used in this study was adapted to the Myanmar language version. Then, the expert review was conducted for face validity and content validity of the instruments by seven experts in the field of educational psychology and educational test and measurement from Yangon University of Education. Next, the questionnaire was modified according to their suggestions and recommendations. And then, a pilot study was conducted to test whether the wording of items, statements and instructions had their clarity in Myanmar language version and were appropriate to student teachers. The Cronbach’s alphas for all the measures in the pilot study were above 0.7, hence having satisfactory reliability.

Data Analysis and Findings

Analysis of Data on Student Teachers’ Academic Self- Concept

Means and standard deviation of student teachers’ academic self-concept were analyzed and the results were shown in Table 2.

Table 2 Descriptive Statistics of Student Teachers’ Academic Self-Concept

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Minimum	Maximum
Academic Self-Concept	300	51.40	4.660	35	63

Note. *M* = Mean, *SD* = Standard Deviation

Analysis of Data on Subscales of Student Teachers’ Academic Self-Concept

Mean and standard deviation of subscales of student teachers’ academic self-concept were analyzed and the results were shown in Table 3.

Table 3 Descriptive Statistics for Subscales of Student Teachers’ Academic Self-Concept

Variables	No. of Items	<i>N</i>	<i>M</i>	Mean%	<i>SD</i>	Minimum	Maximum
Academic motivation	6	300	18.41	24.22%	2.022	9	23
Academic persistence	8	300	20.05	26.38%	2.696	13	27
Academic ability	5	300	12.95	17.04%	1.748	5	18

Note. *M* = Mean, *SD* = Standard Deviation

Comparison of Student Teachers' Academic Self-Concept by Gender

To find out whether there were gender differences in academic self-concept of student teachers, descriptive statistics and independent samples *t*-test were conducted (see Table 4).

Table 4 Means, Standard Deviations and Results of Independent Samples *t*-test of Student Teachers' Academic Self-Concept by Gender

Variables	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Academic motivation	Male	150	18.17	2.222	-2.038*	284	.042
	Female	150	18.65	1.777			
Academic persistence	Male	150	19.95	2.681	-.599	298	.550
	Female	150	20.14	2.717			
Academic ability	Male	150	12.89	1.832	-.528	298	.598
	Female	150	13.00	1.663			
Academic Self-Concept	Male	150	51.02	4.745	-1.427	298	-.155
	Female	150	51.79	4.557			

Note. * $p < .05$.

M = Mean, *SD* = Standard Deviation

The result of independent samples *t*-test stated that the mean score of academic motivation for female student teachers was significantly higher than that of male student teachers, $t(284.247) = -2.038$, $p = .042$

Comparison of Student Teachers' Academic Self-Concept by Subject Combination

To make more detailed information on the difference of student teachers' academic self-concept by subject stream, one-way Analysis of Variance (ANOVA) was conducted (see Table 5).

Table 5 Means, Standard Deviations, and ANOVA Results of Student Teachers' Academic Self-Concept by Subject Stream

Variables	Subject Stream	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
Academic motivation	Science	100	17.98	2.309	3.499*	.031
	Arts & Science	100	18.67	1.729		
	Arts	100	18.58	1.934		
Academic persistence	Science	100	20.31	2.677	2.096	.125
	Arts & Science	100	19.60	2.590		
	Arts	100	20.23	2.788		
Academic ability	Science	100	13.04	1.414	.960	.384
	Arts & Science	100	12.90	1.573		
	Arts	100	13.20	1.602		

Note. * $p < .05$.

M = Mean, *SD* = Standard Deviation

ANOVA results indicated that there were significant differences of academic motivation, $p = .031$, with respect to subject stream.

To obtain more detailed information for subject combination, post hoc test was carried out by Tukey HSD multiple comparison procedure for science, arts & science, and arts (see Table 6).

Table 6 Results of Tukey HSD Multiple Comparisons for Student Teachers’ Academic Self-Concept by Subject Stream

Variable	(I)Subject Stream	(J) Subject Stream	Mean Difference(I-J)	<i>p</i>
Academic motivation	Art &Science	Science	.690*	.041

Note. * $p < .05$.

According to the above Table 6, it can be concluded that the student teachers who was arts and science group was better than those with science subject stream in academic motivation.

Comparison of Student Teachers’ Academic Self-Concept by Father’s Jobs

To make more detailed information on the difference of student teachers’ academic self-concept by father’s job, one-way Analysis of Variance (ANOVA) was conducted (see Table 7).

Table 7 Means, Standard Deviations, and ANOVA Results of Student Teachers’ Academic Self-Concept by Father’s Job

Variables	Fathers’ Job	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
Academic motivation	Government Staff	31	17.77	1.783	1.722	.180
	Self-Employed	252	18.48	2.073		
	Random	17	18.53	1.463		
Academic persistence	Government Staff	31	20.32	2.508	2.974*	.05
	Self-Employed	252	20.12	2.693		
	Random	17	18.53	2.764		
Academic ability	Government Staff	31	13.06	13.06	1.029	.359
	Self-Employed	252	13.08	13.08		
	Random	17	12.53	12.53		

Note. * $p < .05$.

M = Mean, *SD* = Standard Deviation

ANOVA results indicated that there were significant differences of academic persistence, $p = .05$, with respect to father’s job.

To obtain more detailed information for father’s job, post hoc test was carried out by Tukey HSD multiple comparison procedure for government staff, self-employed, and random (see Table 8).

Table 8 Results of Tukey HSD Multiple Comparisons for Student Teachers' Academic Self-Concept by Father's Job

Variable	(I)Father's Job	(J) Father's job	Mean Difference(I-J)	<i>p</i>
Academic persistence	Self-Employed	Random	.1586*	.049

Note. * $p < .05$.

According to the above Table 8, it can be concluded that the student teachers' father job in self-employed was better than random in academic persistence.

Comparison of Student Teachers' Academic Self-Concept by Mother's Job

To make more detailed information on the difference of student teachers' academic self-concept by mother's job, one-way Analysis of Variance (ANOVA) was conducted (see Table 9).

Table 9 ANOVA Results of Each Subscales of Student Teachers' Academic Self-Concept by Mother's Job

Variables	Mothers' Job	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
Academic motivation	Government Staff	27	17.48	2.242	15.058*	.000
	Self-Employed	103	17.78	2.183		
	House Keeper	170	18.41	1.709		
Academic persistence	Government Staff	27	20.41	2.965	2.351	.097
	Self-Employed	103	20.44	2.882		
	House Keeper	170	19.75	2.509		
Academic ability	Government Staff	27	12.81	.962	1.654	.193
	Self-Employed	103	13.26	1.584		
	House Keeper	170	12.95	1.564		

Note: * $p < .05$.

M = Mean, *SD* = Standard Deviation

ANOVA results indicated that there were significant differences of academic motivation, $p=.000$, with respect to mother's job.

To obtain more detailed information for subject combination, post hoc test was carried out by Tukey HSD multiple comparison procedure for government staff, self-employed, and house keeper (see Table 10).

Table 10 The Results of Tukey HSD Multiple Comparison for Subscale of Student Teachers’ Academic Self-Concept by Mother’s Job

Variable	(I)Mother’s Job	(J) Mother’s job	Mean Difference(I-J)	<i>p</i>
Academic motivation	House Keeper	Government Staff	1.460**	.001
		Self-Employed	1.164***	.000

Note: ***p* <.01, ****p* <.001.

According to the above Table 10, it can be concluded that the student teachers’ mother job in house keeper was better than those with government staff and self-employed in academic motivation.

Discussion

Firstly, to find out the analysis of data on student teachers’ academic self-concept, the results showed that the mean score of academic self-concept was 51.40 and the standard deviation was 4.660. The highest mean score for student teachers’ academic self-concept was 63 and the lowest mean score was 35. And then, the observed mean is 51.40 and the theoretical mean is 47.50. it can be said that the academic self-concept of first year student teachers from Yangon University of Education was satisfactory. Then, to find out the analysis of data on subscales of student teachers’ academic self-concept, the results showed that the mean percentage of 24.22%, 26.38% and 17.04% in academic motivation, academic persistence and academic ability respectively. It can be concluded that the mean percentage of first year student teachers’ academic self-concept in academic persistence (24.22%) was higher than those of othe subscales.

According to the independent simple *t*-Test result of first year student teachers’ academic self-concept by gender, there was significant difference in academic motivation at 0.05 level. This study is consistent with the results of previous studies by Pirmohamed, Debowska & Boduszek, 2017; Matovu, 2012; Liu, 2010; Liu & Wang, 2005. They found that female students tend to have higher academic self-concept than male students. It was found that female student teachers’ academic self-concept was higher than male student teachers. It can be said that female student teachers are generally interested in academic activities and have good attention to learning. They also do carefully in academic work and are able to do the best in academic duties than the male student teachers.

Moreover, based on the ANOVA results in determining the differences in first year student teachers’ academic self-concept by subject stream, there was a significant difference in academic motivation at 0.05 level by the subject stream. The results of the present study are similar to the results of Gakhar & Gains, 2011. They found that the students of Science and Arts streams differed significantly in their level of self-concept. Based on the post hoc analysis, it was found that arts and science student teachers possess better academic motivation than science student teachers. It can be said that art and science student teachers have high intrinsic motivation. Deci & Ryan (1985) said that academic motivation is usually described as internal or intrinsic and external or extrinsic factors. Race (1998) believed that internal or intrinsic motivation is connected to the desire for education. They would perform learning activities with internal emotions. They would feel a sense of joy, curiosity, happiness, and interest during teaching learning process.

According to the ANOVA results, there were significant differences in academic persistence at 0.05 level by father's job. Based on the post hoc analysis, it was found that student teachers whose fathers have the self-employed jobs had higher academic self-concept than those of their fathers have random jobs. It can be concluded that the fathers who have the self-employed jobs may have preferred more involvement with children. They can give more than to cater to their children because they don't have rigid work whenever they want to. This desire for involvement in family life, and many arranges their schedules to participate or be present for special activities can support their children's academic self-concept. Craig and Bittman, (2008) said that self-employment provides strong carrying potential as people have more control over their own progression. They also said that going hand in hand with the flexible life style, individual who works for them can go over and above to work long hours on some days, network and reap the benefits of their hard work.

In determining the significant differences in academic self-concept among first year student teachers by mother's job, ANOVA results showed a significant difference in academic self-concept among first year student teachers by mother's job at 0.01 level. Specifically, based on the post hoc results, it was found that student teachers whose mothers are housewives would have higher academic persistence than student teachers whose mother are government staff and non-government staff. Thus, it can be concluded that mothers who are housewives can give their children more time and support, moreover, they allow their children to choose their goals and then they can help their children create a plan and listen for opportunities to help their children to achieve goals of interest to them. Therefore, parents' jobs influence their children academic self-concept.

Limitations of the Study and Future Research

This study was conducted with a cross-sectional study design, so longitudinal studies should be employed to determine the development of academic self-concept. This study included only one university of education. To be more representative, future research should be conducted with the remaining universities of education and education degree colleges. Moreover, participants comprised only student teachers. Additionally, more empirical studies among other populations such as in-service teachers, adolescents, basic education students and other university students should be studied to elucidate the importance of academic self-concept.

Acknowledgements

We would like to offer our respectful gratitude to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-rector, Yangon University of Education) for allowing us to do this study. And we would like to express our honorable gratitude to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her great support and expert guidance for our study. Then, we would like to special thanks to all participants of this study.

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PARENT-ADOLESCENT CONFLICT AND PSYCHOLOGICAL WELL-BEING AMONG EDUCATION DEGREE COLLEGE STUDENT TEACHERS

Phyu Phyu Aung¹, Khin Hnin Nwe²

Abstract

The main purpose of this study was to investigate parent-adolescent conflict and psychological well-being among education degree college Student Teachers. The quantitative research design and survey method were used in this study. A total of 700 (male=226 and female=474 student teachers) were randomly chosen from HPEDC, MEDC, YEDC and TEDC. Quantitative, descriptive research design and survey method were used in this study. The questionnaires were used to collect demographic information of the participants such as gender, education level, subject combination and college. Parent-adolescent Conflict questionnaire, the students adopted to parent-adolescent conflict scale; developed by Wohabie Birhan (2007) consisting of 32 items was used to measure parent-adolescent conflict of Education Degree College students and psychological well-being scale (PWB) consisting of 42 items was applied to measure the psychological well-being of Education Degree College Student Teachers. Both the descriptive and independent samples *t* test and ANOVA were carried out. The result of independent samples *t* test showed that there was significant difference in parent-adolescent conflict by gender, education level. Female student teachers had significantly higher than that of male student teachers in parent-adolescent conflict. ANOVA showed that there was significant difference in parent-adolescent conflict by college. This study found that there was no significant difference on parent-adolescent conflict of student teachers by subject combination. And Psychological Well-being scale (PWB) developed by Ryff (2014) was used. The result of *t* test showed that there were no significant differences in psychological well-being by gender, education level. But the result of ANOVA showed that there was significant difference in psychological well-being by college. The study found that there was no significant difference in psychological well-being by subject combination. And, the result of correlation analysis revealed that parent-adolescent conflict and psychological well-being was significantly correlated.

Keywords: Parent-adolescent Conflict, Psychological Well-Being, Student Teachers

Introduction

All the creature human beings are superior from the other due to their thinking ability. Human development is the most complex process occurring in nature. Every human being will go through various stages of development from infancy through adolescence till they reach adulthood. Among these stages adolescence is the most turbulent one. The parents, relatives, society expects adolescent to behave like an adult for getting the fact that adolescent is neither an adult nor a child.

Adolescence involves a series of changes that would impact mental health and personal relationships. The growing autonomy expectations and needs of adolescents must be met by their parents. Conflict is usually seen as a transient perturbation that is functional in realigning adolescent-parent relationships.

Adolescence is a period of transition and rapid change. In contrast to more stable periods in the life cycle, such as middle childhood and adulthood, adolescence is characterized by accelerated physical, psychological, and cognitive development as well as by new and changing social demands.

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Shek (1992) defined psychological well-being as the state of a mentally healthy person who possesses a number of positive mental health qualities such as active adjustment to the environment and unity of personality. According to Ryff (1989), psychological well-being is active engagement in a number of existential challenges.

Therefore, psychological well-being is about lives going well. It is a combination of feeling good and functioning effectively. Psychological well-being is negotiated when negative emotions are extreme or very long-lasting and interfere with a person's ability to function in his or her daily life (Huppert, 2009).

Aim of the Study

The relationship between parent-adolescent conflict and psychological well-being among education degree college student teachers.

The specific objectives of the study were as follows:

- To explore parent-adolescent conflict among education degree college students by gender, education level, subject combination and college.
- To explore psychological well-being among education degree college students by gender, education level, subject combination and college.
- To find out the relationship between parent-adolescent conflict and psychological well-being among education degree college students

Scope of the Study

The participants of this study were selected student teachers from Hpa-an Education Degree college, Mawlamyine Education Degree College, Yankin Education Degree College and Thingangyun Education Degree College.

Definition of the Key Term

Parent-adolescent Conflict: a disagreement between parents and their adolescent children over varied issues as measured by questionnaire administered with adolescents (Wohabie,2007).

Psychological Well-being: Shek (1992) defined psychological well-being as the state of a mentally healthy person who possesses a number of positive mental health qualities such as active adjustment to the environment and unity of personality.

Well-being: Well-being is a dynamic concept that includes subjective, social, and psychological dimensions as well as health related behavior (Ryff (1989).

Review of Related Literature

Parent-adolescent Conflict

Renk and Simpson (2005), although adolescents and their parents may experience conflict over serious issues that affect each family member, a significant number of adolescents and their parents experience minor conflicts over the daily details of family life. Because conflict, even when it is over everyday issues, has significance in the lives of adolescents and their parents (Smetana, 1996 cited by Renk and Simpson, 2005).

Conflicts unlike destructive ones are likely to be resolved by means of negotiations in a way that is acceptable to both parties. Adolescents experience a decline in the desire for

companionship with their parents, experience an increase in conflict and distance in relationships with their parents. The transformation from childhood to adolescence creates a disturbance felt not only by adolescents, but by their parents as well. Adolescents’ and parents’ contrasting desires and experiences contribute to increase in conflict (Shehata and Ramadan, 2010).

In order to allow a sensitive response to the child's changing developmental needs, the parent-child interaction must undergo change during adolescence. As adolescents become older, providing behavioral guidelines remains an important concern, but gradually becomes secondary to allowing and encouraging the adolescent's independence. Several studies have noted that the most beneficial parenting in adolescence is characterized by a high degree of warmth and acceptance, a high level of monitoring or supervision (Riesch et al. 2005; Dekovic´ 1999; Steinberg et al. 1994 cited by Ozmete and Bayogly 2009).

Theoretical Framework of Parent-adolescent Conflict

Wohabie (2007) Parent-adolescent Conflict Theories, Sociobiological Theory- based on the observation that conflict intensifies at puberty in other species of primates and that the underlying tension may be delivered from an evolved basis. Psychoanalytic theory, leads a mutual relationship with them, adolescent must come to term with parents’ fallibility and as a result, lessen their dependence on their parents. Cognitive Development Theory, cognitive –development perspective, conflict in adolescents is related to the development of social reasoning. The theories of Wohbie Birhan (2007) and were used as theoretical foundation models for this study.

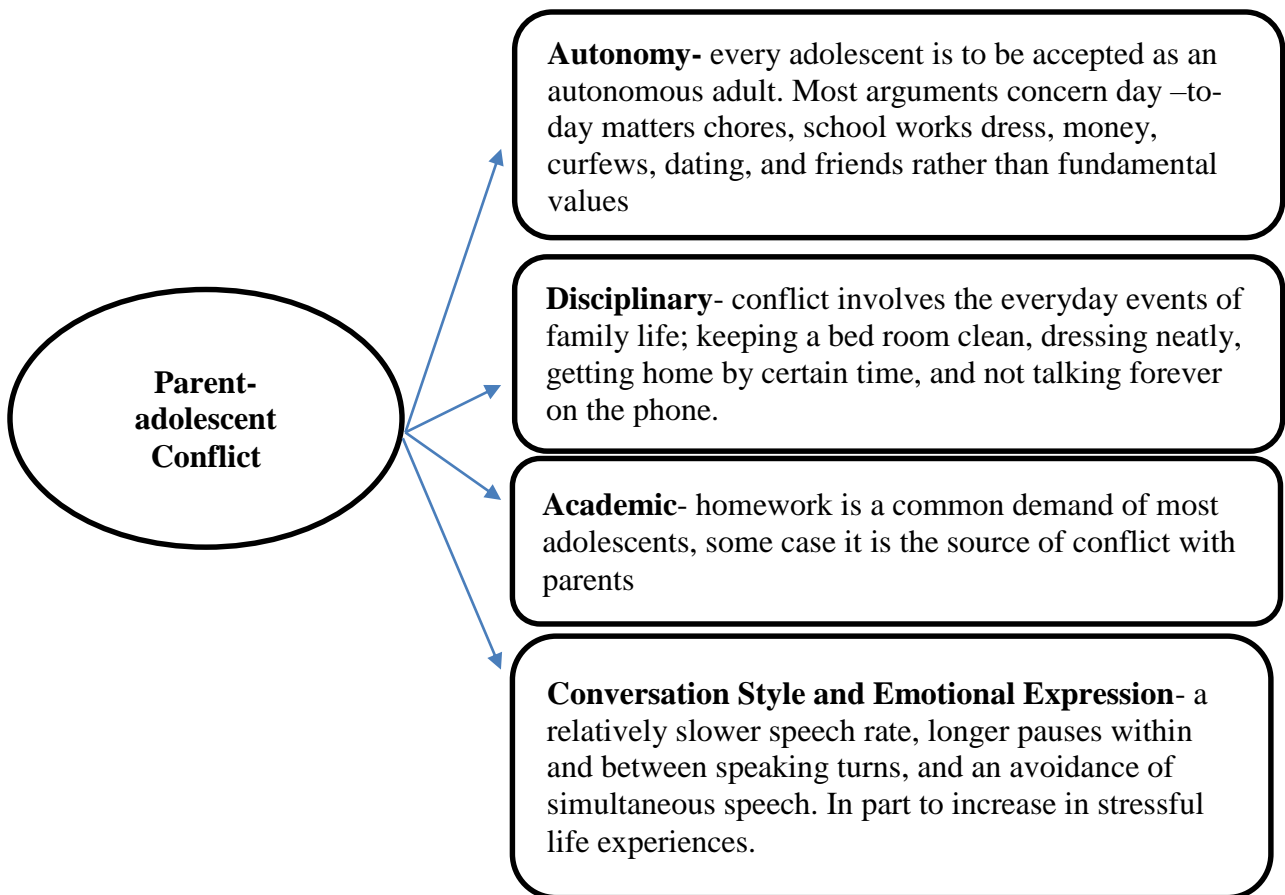


Figure: Four Dimension of Parent-adolescent Conflict

Psychological Well-being

Well-being includes not only subjective, social and psychological aspects but health-related behaviors also. Psychological well-being is about lives going well. It is the combination of feeling good and functioning effectively. Sustainable well-being does not require individuals to feel good all the time; the experience of painful emotions is a normal part of life, and being able to manage these negative or painful emotions is essential for long-term wellbeing. Psychological well-being is, however, compromised when negative emotions are extreme or very long lasting and interfere with a person's ability to function in his or her daily life (Huppert, 2009). Ryff's (1989) defined well-being is the optimal psychological functioning and experience.

Well-being is also defined as a positive and sustainable state that allows individuals, groups or nations to thrive and flourish and well-being is exemplified with happiness, satisfaction, empathy, motivation, interest, physical vitality, satisfying social relationships and resilience (Huppert, Baylis & Keverne, 2004).

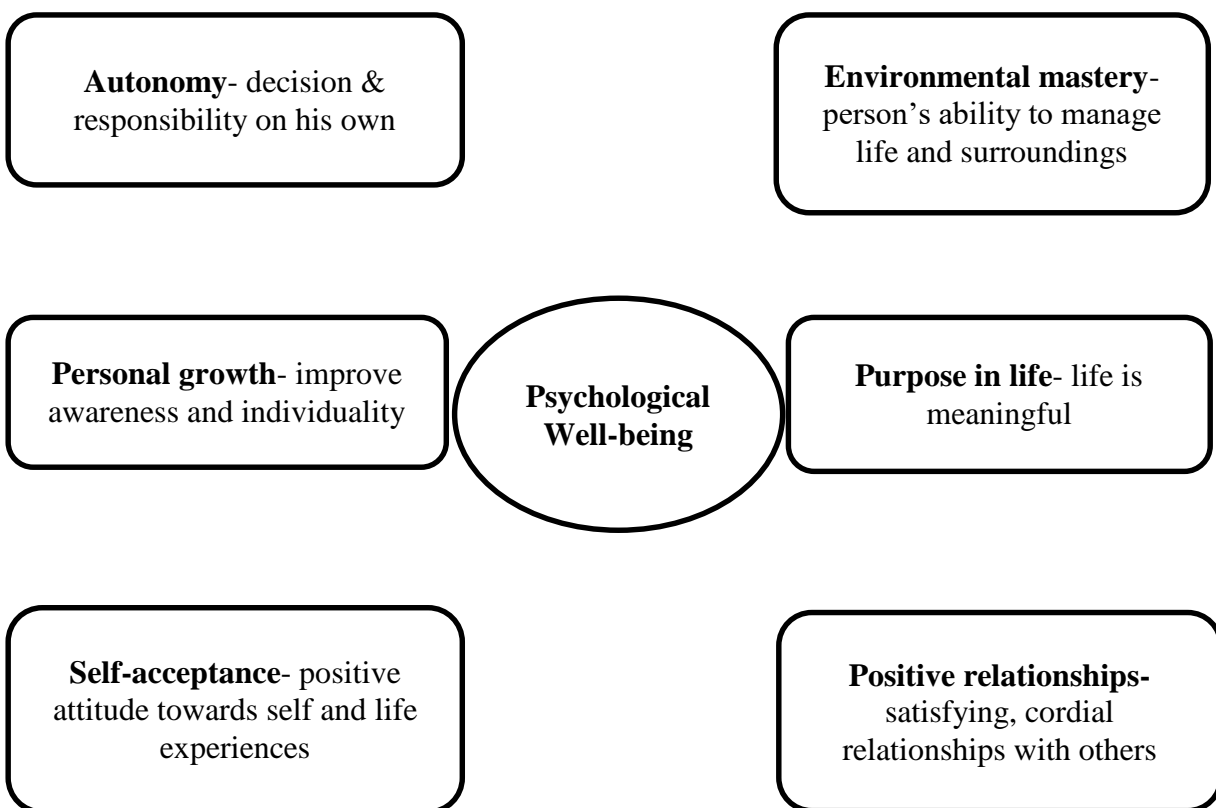


Figure: The Scale of Psychological Well-being (SPWB; Ryff,2014), six dimensions

Method

Sampling

In this study, 700 student teachers (Male=226, Female=474) in Hpa-an, Mawlamyine, Yankin and Thiingangyun Education Degree College were selected as the participants. In this study, simple random sampling method was used.

Method

Descriptive research design and questionnaire survey method were used in this study.

Instrumentation

Parent-adolescent conflict scale was used. Wohabie Birhan (2007) questionnaire classified four parent-adolescent conflict; autonomy, disciplinary, academic and conversation style and emotional expression. The statements were designed to respond on Four point Likert Scale. The scale valued used against each response were always =1, usually=2, sometimes=3 and no at all=4.

Psychological Well-being scale was used. Psychological Well-being Scale (PWB) developed by Ryff (2014), six dimension; autonomy, environmental mastery, personal growth, purpose of life, self-acceptance and positive relationship with others. The statements were designed to respond on Five point Likert Scale. The scale valued used against each response were Strongly Agree=5, Agree=4, No opinion =3, Disagree=2, Strongly Disagree=1.

After translating these questions to Myanmar Version, the researcher asked for the experts from Department of Educational Psychology, Yangon University of Education (YUOE) to check the instruments for the content validity. Then, after preparing the instruments, pilot study was conducted with 50 student teachers in Mawlamyine and Hpa-an Education Degree College. After making pilot study, the reliability of the instruments was analyzed by using Statistical Packaged for Social Sciences SPSS (Version 20). The Cronbachs' alpha reliability coefficients were 0.574 for parent-adolescent conflict scale and 0.704 for psychological well-being scale respectively.

Procedure

Firstly, literature review was done from several available books, reports, thesis, journals and internet sources. This scale of parent-adolescent conflict and psychological well-being was adapted and translated to Myanmar version. Data collection was done after validating and piloting the instruments. After collecting the required data, the data were analyzed and interpreted. Finally, the necessary suggestions and recommendation of the study were discussed.

Data Collection

In this study, the data were collected with the permission of the respective Principals. The participants were given about 45 minutes to complete all items.

Data Analysis

In this study, the collected data were analyzed by using descriptive statistics and correlation. Statistical Package for the Social Science (SPSS) was used to analyze the data.

Data Analysis and Findings

Parent-adolescent Conflict

Table 1 Descriptive Statistics for Parent-adolescent Conflict of Student Teachers

Variables	No. of items	Minimum	Maximum	Mean	Mean%	SD
Autonomy	6	16	24	20.24	84.33%	1.252
Disciplinary	13	38	52	47.02	90.42%	2.295
Academic	8	24	32	27.87	87.09%	1.512
Conversation Style and Emotional Expression	5	15	20	17.37	86.85%	1.198
Parent-adolescent Conflict	32	98	125	112.49	87.88	4.304

According to the table 1, the mean percent of autonomy, disciplinary, academic, conversation style and emotion expression were 84.33%, 90.42%, 87.09% and 86.85%. Among them, the mean percent of disciplinary was the highest. For parent-adolescent conflict, the highest possible score was 125 and the lowest possible score was 27. The mean score of parent-adolescent conflict of student teachers in this study was 112.49. Therefore, it can be said that the parent-adolescent conflict of student teachers in four Education Degree College were satisfactory.

Table 2 Results of Descriptive Statistics and Independent Sample *t* test for Parent-adolescent Conflict by Gender

Variables	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Autonomy	Male	226	20.25	1.220	.157	698	.875
	Female	474	20.24	1.269			
Disciplinary	Male	226	46.50	2.354	-4.128***	698	.000
	Female	474	47.26	2.228			
Academic	Male	226	27.76	1.586	-1.353	698	.176
	Female	474	27.92	1.474			
Conversation Style and Emotional Expression	Male	226	17.44	1.218	1.149	698	.251
	Female	474	17.33	1.187			
Parent-adolescent Conflict	Male	226	111.96	4.346	-2.293	698	.022
	Female	474	112.76	4.265			

According to the table 2, there was significant difference in parent-adolescent conflict according to disciplinary by gender. It can reasonably be said that student teachers' parent-adolescent conflict depends on gender. It may conclude both male and female student teachers may

probably experience similar nurturing college environment and society. This result was consistent with the finding of Sullivan (2006).

Table 3 Results of Descriptive Statistics and Independent Sample *t* test for Parent-Adolescent Conflict and by Education Level

Variables	Education Level	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Autonomy	Year 1	577	20.22	1.251	-.976	698	.330
	Year 2	123	20.34	1.260			
Disciplinary	Year 1	577	47.07	2.255	1.347	698	.178
	Year 2	123	46.76	2.466			
Academic	Year 1	577	27.95	1.529	3.162	698	.002
	Year 2	123	27.48	1.369			
Conversation Style and Emotional Expression	Year 1	577	17.41	1.148	2.091	698	.037
	Year 2	123	17.16	1.244			
Parent-adolescent Conflict	Year 1	577	112.65	4.282	2.123	698	.034
	Year 2	123	111.75	4.347			

According to Table3, there was significant difference in parent-adolescent conflict at 0.01 level by education level.

Table 4 Mean and Standard Deviation for Parent-adolescent Conflict of Student Teachers by Subject Combination

Variable	Subject Combination	N	Mean	SD
Parent-adolescent Conflict	Science	197	113.03	4.088
	Arts	226	112.27	4.776
	Arts & Science	277	112.30	4.022

According to Table 4, the mean score of science students was higher rather than arts and arts & science student teachers.

Table 5 ANOVA Results for Parent-adolescent Conflict of Student Teachers by Subject Combination

Variable		<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Parent-adolescent Conflict	Between Group	2	39.449	2.136	.119
	Within Group	697	18.468		
	Total	699	13.108		

According to the result of Table5, there was no significant differences in parent-adolescent conflict by subject combination. It can be concluded that parent-adolescent conflict does not depend on subject combination

Table 6 Mean and Standard Deviation for Parent-adolescent Conflict Student Teachers by College

Variable	College	N	Mean	SD
Parent-adolescent Conflict	HPEDC	140	111.80	4.154
	MEDC	167	113.17	4.293
	YEDC	194	112.95	4.338
	TEDC	199	111.96	4.275

According to Table 6, the mean score of student teacher from MEDC had the highest mean score 113.17 and HPEDC had the lowest mean score 111.80.

Table 7 ANOVA Results for Parent –adolescent Conflict Student Teacher by College

Variable		Sum of Squares	df	Mean Square	F	p
Parent-adolescent Conflict	Between Groups	241.277	3	80.426	4.404**	.004
	Within Groups	12709.700	696	18.261		
	Total	12950.977	699			

According to ANOVA results, there was significant differences in parent-adolescent conflict student teacher according to college. The mean difference was significant at 0.01level.

Table 8 ANOVA Results of Each Subscale for Parent –adolescent Conflict Student Teacher by College

Variable		Sum of Squares	df	Mean Square	F	p
Autonomy	Between Groups	29.487	3	9.829	6.413***	.000
	Within Groups	1066.712	696	1.533		
	Total	1096.199	699			
Disciplinary	Between Groups	50.557	3	16.852	3.230*	.022
	Within Groups	3631.237	696	5.217		
	Total	3681.794	699			
Academic	Between Groups	30.905	3	10.302	4.576*	.003
	Within Groups	1567.004	696	2.251		
	Total	1597.909	699			

According to ANOVA results, there was significant difference in autonomy, disciplinary and academic subscales of student teachers' parent-adolescent conflict by college at 0.001, 0.01 and 0.05 level.

Table 9 Results of Game-Howell Multiple Comparison for Parent-adolescent Conflict of Student Teachers by College

Variable	College (I)	College(J)	Mean Difference (I-J)	p
Autonomy	HPEDC	MEDC	-.452**	.007
	MEDC	HPEDC	-.452**	.007
		YEDC	.339*	.040
		TEDC	.546***	.000
	YEDC	MEDC	-.339*	.048
	TEDC	MEDC	-.5468***	.000
Academic	HPEDC	MEDC	-.530**	.005
		YEDC	-.516**	.009
	MEDC	HPEDC	.530	.005
	YEDC	HPEDC	.526**	.009

Note * The mean difference was significant at 0.05 level.

Note ** The mean difference was significant at 0.01 level.

Note *** The mean difference was significant at 0.001 level.

According to the Table 9, the results indicated that parent-adolescent conflict may differ according to college. Student Teachers in HPEDC were higher than in autonomy than those in MEDC. It was found that the student teachers from MEDC had higher in academic than those in HPEDC.

Table 11 Description Statistics for Psychological Well-being of Student Teachers

Variables	No. of items	Minimum	Maximum	Mean	SD
Autonomy	7	24	35	29.35	1.893
Environmental Mastery	7	25	35	30.14	1.696
Personal Growth	7	24	35	30.36	2.128
Positive Relation	7	24	35	29.82	1.877
Purpose in life	7	23	35	31.30	2.185
Self-acceptance	7	23	35	29.35	2.519
Psychological Well-being	42	158	200	180.32	7.048

In Table 11, the mean scores of autonomy, environmental mastery, personal growth, positive relation, purpose in life and self-acceptance were 29.35, 30.14, 30.36, 29.82, 31.30 and 29.35. Among them, the mean of personal growth was the highest. Therefore, it can be said that psychological well-being of student teachers was satisfactory.

Table 12 Results of Descriptive Statistics and Independent Sample *t* test for Psychological Well-being by Gender

Variables	Gender	<i>N</i>	Mean	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Autonomy	Male	226	29.55	1.862	1.936	698	.053
	Female	474	29.26	1.903			
Environmental Mastery	Male	226	30.32	1.667	1.958	698	.051
	Female	474	30.05	1.705			
Personal Growth	Male	226	30.55	2.146	1.623	698	.105
	Female	474	30.27	2.116			
Positive Relation	Male	226	29.77	1.700	-.530	698	.596
	Female	474	29.85	1.957			
Purpose in life	Male	226	31.23	2.198	-.609	698	.542
	Female	474	31.33	2.180			
Self-acceptance	Male	226	29.46	2.642	.830	698	.407
	Female	474	29.29	2.459			
Psychological Well-being	Male	226	180.88	7.004	1.446	698	.149
	Female	474	180.05	7.062			

According to Table 12, the result of independent samples *t* test showed that there were no significant differences between subscale of psychological well-being by gender. It can reasonably be said that student teachers psychological well-being does not depend on gender.

Table 13 Descriptive Statistics for Psychological Well-being Student Teachers by College

Variable	College	<i>N</i>	Mean	<i>SD</i>
Psychological Well-being	HPEDC	140	180.43	6.770
	MEDC	167	181.29	6.828
	YEDC	194	180.57	7.256
	TEDC	199	179.18	7.113

Table 13, The mean score of student teachers from YEDC had highest mean score 180.43 and TEDC had the lowest mean score 179.18.

Table 14 ANOVA Results for Psychological Well-being of Student Teachers by College

Variable		Sum of Squares	df	Mean Square	F	p
Psychological Well-being	Between Groups	432.716	3	144.239	2.928	.033
	Within Groups	34289.242	696	49.266		
	Total	34721.959	696			

According to ANOVA results, there were significant differences in psychological well-being of student teachers by college at 0.05 level.

Table 15 ANOVA Results of Subscale for Psychological Well-being of Student Teachers by College

Variable		Sum of Squares	df	Mean Square	F	p
Autonomy	Between Groups	30.050	3	12.683	3.577*	.014
	Within Groups	2467.794	696			
	Total	2505.844	699			
Environmental Mastery	Between Groups	31.577		10.526	3.701*	.012
	Within Groups	1979.257		2.844		
	Total	2010.834				
Personal Growth	Between Groups	53.808		17.936	4.011**	.008
	Within Groups	3112.299		4.472		
	Total	3166.107				
Positive Relation	Between Groups	29.238		9.746	2.787*	.040
	Within Groups	2434.082		3.497		
	Total	2463.320				
Self-acceptance	Between Groups	62.079		20.693	3.294*	.020
	Within Groups	4372.258		6.282		
	Total	4434.337				
Psychological Well-being	Between Groups	432.716		144.239	2.928*	.033
	Within Groups	34289.242		49.266		
	Total	34721.959				

According to ANOVA results, there was significant difference in autonomy, environmental mastery, personal growth, self-acceptance and psychological well-being of student teachers according to college at 0.01level, 0.05 level.

Table 16 Results of Game-Howell Multiple Comparison for Psychological Well-being of Student Teachers by College

Variable	College (I)	College (I-J)	Mean Difference (I-J)	<i>p</i>
Psychological Well-being	MEDC	TEDC	2.118*	.021

According to the results of Table 16, student teachers from MEDC were significantly higher than those from TEDC.

Table 17 Relationship Between Parent-adolescent Conflict and Psychological Well-being of Student Teachers

Variable	Parent-adolescent Conflict	Psychological Well-being
Parent-adolescent Conflict		.275**
Psychological Well-being	.275**	

By the result of Table 20, there was significant positive relationship between parent-adolescent conflict and psychological well-being of student teachers ($r=.275$, $p<0.01$).

Conclusion

The main purpose of this study was to explore parent-adolescent conflict and psychological well-being among Education Degree College Students. For this purpose, the researcher adapted the questionnaires developed by Wohbie Birhan (2007) and Ryff (2014) in this study. After organizing, tabulating and interpreting the data, the following findings are discussed in this section.

This study examined overall parent-adolescent conflict and each subscale by gender. The results of the independent samples *t* test indicated that there were significant differences in disciplinary by gender.

To Compare parent-adolescent conflict of student teachers by Education level, independent samples *t* test was used and the result revealed that there was a significant difference in parent-adolescent conflict by Education level. This may be due to regular done in the home, homework may have a larger impact on the parent-adolescent conflict than other academic skills such as test-taking strategies.

In studying, parent-adolescent Conflict of Student Teachers by Subject Combination, the result revealed that there was no significant difference in parent-adolescent conflict by subject combination.

To Compare parent-adolescent conflict of students by college, one -way ANOVA was used and the result revealed that there was significant difference in overall parent-adolescent conflict by college. It may be due to the fact the student teachers in HpEDC, MEDC, YEDC and TEDC may have more autonomy and academic about how to do typical done in the home, homework may have a larger impact on the parent-adolescent conflict than other academic skills such as test-taking strategies than student teachers in other colleges.

By Comparing overall psychological well-being and each subscale by gender, the results of the independent samples *t* test indicated that there were no significant differences in psychological well-being by gender. It may be concluded both male and female student teachers were creating opportunities for social interaction and engagement is sufficient for facilitation meaningful relationship, particularly across racial/ ethnic groups.

By Comparing overall Education level and each subscale; (autonomy, environmental mastery, personal growth, positive relation, purpose in life and self-acceptance), The results of the independent samples *t* test indicated that there were no significant differences in psychological well-being by Education level.

One-way ANOVA was used and the result revealed that there were no significant differences in psychological well-being by subject combination.

The result revealed that there was a significant difference in overall psychological well-being and autonomy, environmental mastery, personal growth, positive relation and self-acceptance by college. It may be concluded MEDC student teachers may probably experience better feeling and functioning effectively, have confidence to take on and put in the necessary effort to succeed at challenging tasks.

According to the result of study, there was a statistically significant correlation between parent-adolescent conflict and psychological well-being of student teachers.

Acknowledgements

We would like to offer respectful gratitude to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-Rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-Rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-Rector, Yangon University of Education) for their official permission to do this research. Especially, we are grateful to Dr. Khin Hnin Nwe (Professor and Head of Department of Educational Psychology, Yangon University of Education) for his encouragement and valuable comments. Moreover, we wish to express our deep gratitude to all principles and participants of this study.

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TEACHING APTITUDE OF PRE-SERVICE TEACHERS FROM SAGAING UNIVERSITY OF EDUCATION

Khin Khin Thant¹

Abstract

Pre-service teachers are the energy of today, the bright hope of the future and the key persons in promoting the educational system. Pre-service teachers' aptitude is an important characteristic to success in teaching. The main aim of the study is to investigate teaching aptitude of pre-service teachers. Moreover, the present study was conducted to find out the differences in teaching aptitudes of pre-service teachers according to gender, grade and age. In this study, the descriptive survey method was used and the samples were a total of 200 pre-service teachers from Sagaing University of Education. There were 100 first year pre-service teachers (50 Males and 50 Females) and 100 fifth year pre-service teachers (50 Males and 50 Females). The participants were selected by using the random sampling technique. Teaching Aptitude Questionnaire developed by Jain & Vishitha (2011) was utilized to measure their aptitudes. This questionnaire consists of three factors that affect teaching aptitudes; teacher perception of teacher effectiveness, attitude towards teaching profession and teaching interest. According to descriptive statistics, pre-service teachers from Sagaing University of Education had satisfactory teaching aptitude. The descriptive results showed that female teachers possessed more teaching aptitude than male teachers. It was found that fifth year pre-service teachers had higher teaching aptitude compared to first year pre-service teachers. The results indicated that aged pre-service teachers possessed better teaching aptitude than younger pre-service teachers. Based on the analysed results, conclusion, discussion and recommendations were made.

Keywords: Teaching, Teaching aptitude, Pre-service teacher

Introduction

Education is a systematic process through which a child or an adult acquires knowledge, experience, skill and sound attitude. It makes an individual civilized, refined, cultured and educated. It is the key to solve the various problems of life (Reddy, 2004). Teaching is an art to give knowledge to students with effective way. Teaching is a science to educate fact and causes of different topics of different subjects. It is an activity involving teacher and student with a view to the development of student. In the educational process, teacher and teaching- learning process play a vital role. Teaching is a complex process which brings socially desirable behavioral change in a person. The role of teacher is always challenging and dynamic and a teacher is the most important input. The teacher's job is not only transmission of knowledge, but it is something more. (Aggarwal, 2013).

Aptitude is an important thing in education and a main characteristic in teaching. A good teacher must possess significant aspect of teaching. A person will be considered possessing high teaching aptitude if he possesses good mental ability, positive attitude towards children, adaptability, professional information, interest in profession. Aptitude, quality, competence and character of teacher highly influence the quality of Education. (Ganoje, 2011).

Teaching is considered to be one of the noblest professions in the world. The success of any country is determined by its system of education and teachers are the main stakeholders in the overall system of education. Education system varies tremendously globally, but the esteem of teachers has been quite high all across the globe. The important dilemma in the world of teacher

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education is that whether teachers are born, or teachers are made. Although there is a general consensus on the fact that teachers are born but the percentage of such born teachers is quite dismal across the world. (Chandel and Dhiman, 2014).

Teaching as profession can be considered as a highly promising occupation which provides highly specialized intellectual services. Aptitude can be defined as natural ability to do something. Teaching aptitude, hence, refers to an individual's innate ability in teaching. By testing aptitude, we are able to know a great extent whether an individual has the potentiality to become a good teacher, and a good leader etc. Aptitude tests measure and describe special abilities, capacities or talents which are supposed to determine the level of achievement that is expected from individuals in specific fields of study and activity (Aggarwal, 2013).

Teaching needs three qualities; knowledge communication skill and aptitude (Hindu, 2002). An aptitude is an important characteristic in teaching. Teaching aptitude is an aptitude concerned with teaching. Bingham (1937) also said that teaching aptitude involves a specific ability, potentiality, interest, satisfaction and fitness in teaching profession.

Pre-service teachers are the energy of today and the bright hope of the future. The quality of teacher education can be improved by many methods, such as improving the curriculum, improving the practice teaching etc. In teacher education program, it is necessary to give adequate importance to pre-service teachers' aptitude. Teaching aptitude is also found to be a good predictor of teacher effectiveness (Beena, 1995).

The pre-service teachers are the key persons in promoting the educational system. Aptitude is considered to be an important characteristic of an individual, which can predict the future success or failure of an individual in one occupation or areas of occupations. This study may be helpful in the assessment of pre-service teachers' teaching aptitudes. It will provide teacher educators' efforts on developing aptitude among the pre-service teachers. It will support to an extent for teacher education and teacher training programmes in Myanmar.

Aim of the Study

The main aim of this study is to investigate teaching aptitude of pre-service teachers from Sagaing University of Education. The specific objectives are:

1. To explore the perceptions of pre-service teachers on their teaching aptitude.
2. To examine the difference between the teaching aptitude of male and female pre-service teachers.
3. To investigate the differences in the teaching aptitude of pre-service teachers by their grade and age.

Definition of Key Terms

Teaching. Teaching is an art to give knowledge to students with effective way. Teaching is a science to educate fact and causes of different topics of different subjects. It is an activity involving teacher and student with a view to the development of student (Ochathevan, 2010).

Aptitude. Aptitude is a condition or a set of characteristics regarded as symptomatic of an individual's ability to acquire with training, some specific field of knowledge, skill or set of responses such as the ability to speak a language, to produce music etc. (Warren, 1934, cited in Chugh, 2012).

Teaching Aptitude. Teaching aptitude is a person's capacity to acquire proficiency in teaching under appropriate conditions (Gull Kulsooma & Jan Tasleema, 2002). Teaching aptitude may be considered as a special ability or specific capacity besides the general intellectual ability (Ganoje, 2011).

Pre-service Teachers. Per-service teachers are those who are getting training to become teachers and they are known by different names like – would be teachers, pupil teachers, student teachers, and future teachers. (Parvez & Shakir, 2013).

Review of Related Literature

Pre-service Education often provides the first step in the professional development of teachers. It exposes pre-service teachers to new perspectives as well as prepares them in knowledge and skills (Wilke, 2004). Wilke (2004) indicated that knowledge includes disciplinary content, or subject knowledge, and pedagogical content knowledge, or knowledge of how to teach. This forms the basis for quality practice. Pedagogical knowledge can be defined as the content, skills and strategies required for effective teaching (Gerges, 2001). Pedagogical knowledge is linked closely to teachers' belief in that there are factors that influence teachers' attitudes and beliefs towards the implementation of a variety of instructional models and strategies (Sylvia Chong & Choon Lang, 2007).

Meaning and Nature of Teaching

Teaching is an organized system of specific activities aimed to help the learner learn something. Teaching includes all the activities of providing education to other. It is also not a fundamental concept as it is greatly influenced by social and human factors. Teaching is a continuous process. The main aim of teaching is to bring about socially desirable behavioral changes in the students and can be achieved only if teaching is effective and based on certain values or principles (Ochathevan, 2010).

Teaching has six basic requirements. They are- three variables in teaching (includes the teacher, student and environmental factors), professionalism, suitable environment, teacher student relationship, students discipline, teacher and student's devotion to teaching and learning. The person who provides education is called teacher. Effective teaching depends on the teacher. The teacher also uses different methods for giving best knowledge to his students.

Meaning and Nature of Aptitude

Aptitude means ability to do a work by a particular task and it is a natural talent. Aptitude is considered to be an important characteristic of an individual, which can predict the future success or failure of an individual in one occupation or areas of occupations. Aptitude may be defined as a specific ability or a specific capacity distinct from the general intellectual ability, which helps an individual to acquire degree of proficiency or achievement in a specific field. Aptitude is a condition, a quality or a set of qualities in an individual which is indicative of the probable extent to which he will be able to acquire under suitable training, some knowledge, skill or composite of knowledge, understanding and skill, such as ability to contribute to art or music, mechanical ability, mathematical ability or ability to read and speak a foreign language (Taxer, 1957, cited in Reddy, 2004).

An aptitude is an innate component of a competency (the others being knowledge, understanding, learned or acquired abilities (skills) and attitude) to do a certain kind of work at a

certain level. Aptitude is the dynamic trend of the whole personality with mental organization that makes one good in learning and in performing a specialized type of work (Mursell, 1494, cited in Sujata, 2005).

Teaching as a Profession

Teaching is a demanding job that requires in-depth knowledge of subject content, age-specific pedagogy, and many varied skills such as patience, leadership, and creativity, just to name a few. Teaching is a very professional career where an individual is held accountable through a series of tests, assessments and tools to gauge the achievement of students and their learning. Teachers utilize their skills to convey a variety of teachable subjects to students within the classroom from mathematics, science, history, social studies, to music, art and life skills.

Teachers are a valuable resource to communities worldwide, nationwide, and community-wide. They provide an essential role of helping provide the best possible means of education to a group of students that they possibly can. In becoming a teacher, individuals learn a variety of tools in their education. Pre-service teachers have a criterion of classes that will help shape their knowledge base to become outstanding educators.

The teaching profession requires certain dominant behaviors which show teacher's intellect, desire to excel, extended professionalism and teaching as a life concern. (Goodings, 1995, cited in Hussain, 2011). It is the teaching profession, which helps an individual for his growth fully, in his body, mind, spirit, intellectual emotion and with moral values and artistic sensitivity. Therefore, teaching has been accepted as the noblest profession.

Factors influencing on Teaching Aptitude

Teaching aptitude is affected by various factors. According to Ushakumari (2008), there are three factors that have been influencing on teaching aptitude. They are (i) Teacher Perception of Teacher Effectiveness, (ii) Attitude towards Teaching Profession, and (iii) Teaching Interest.

Teacher Perception of Teacher Effectiveness

Teacher Perception of Teacher Effectiveness has been found as one of the major characteristics of effective teaching. Othman (2009) mentioned that teaching is seen as a rational activity and teachers are seen as adaptable to the new theories and external circumstances. Teacher effectiveness is a crucial factor which determines the academic achievements of the pupil both qualitatively and quantitatively. The most common criteria used in evaluating teacher effectiveness were (a) teacher preparation, (b) personal motivation and abilities, (c) the teacher-student relationship, (d) professional roles and practices and (e) teaching environment (Ruff, 1989, cited in Rajammal, 2012).

Attitude towards Teaching Profession

Attitude is important to understand human behavior. Generally, it is defined as a complex mental state involving beliefs (Anastasia, 1957, cited in Jagannadh, 2012). Attitudes are typically conceptualized as having three related components: cognitive that is idea or assumption upon which the attitude is based, affective that is feeling about the issue and behavioral that is a predisposition towards an action that corresponds with the assumption or belief (Wood, 2000, cited in Maliki, 2013). These concepts significantly influence teachers' thinking processes, classroom activities, professional changes, improvements and teaching skills (Pajares, 1992, cited in Guneyli and Aslan, 2009).

Teaching Interest

Interest is a dynamic and active concern with a material, object, or skill. A task of interest is perceived in terms of its relationship to the individual as well as its relationship to other things, as part of a whole (Dewey, 1913, cited in Parr, 2006). According to Crow and Crow (1973), interest may refer to the motivating force that impels us to attend to a person, a thing or an activity, or may be the effective experience that has been stimulated by the activity itself.

Methodology

Research Design

In this research, descriptive survey method was utilized to study teaching aptitude of per-service teachers. Quantitative approach was employed to collect and analyze the data.

Participants

The participants in this study were a total of 200 pre-service teachers; 100 first-year (50 males and 50 females) and 100 fifth-year (50 males and 50 females) pre-service teachers from Sagaing University of Education. They were selected by using random sampling technique.

Instrumentation

In this study, teaching aptitude questionnaire (TAQ) developed by Jain & Vishitha (2011) was used to assess teaching aptitude of pre-service teachers. The questionnaire was constructed with 27 items including 3 subscales; 9 items of teacher perception of teacher effectiveness, 8 items of attitude towards teaching profession and 10 items of teaching interest. The instrument was 5 points Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Research Findings

After collecting the required data, data entry was computed by using the SPSS 16.0 software (Statistical Package for Social Science). To find out more detailed information, independent sample *t*-test and one-way ANOVA (Analysis of Variance) were conducted.

1. Teaching Aptitude of Pre-service Teachers

To find out teaching aptitude of pre-service teachers, statistical descriptive procedure was made by using data from pre-service teachers’ responses on teaching aptitude questionnaire.

Table 1 Descriptive Statistics for Teaching Aptitude of Pre-service Teachers

Factors	N	Minimum	Maximum	Mean	Mean Percent (%)	SD
Effectiveness	200	12	45	39.14	86.98	3.314
Attitude	200	24	40	34.39	85.98	3.027
Interest	200	28	50	41.15	82.3	3.857
Teaching aptitude	200	89	135	114.67	84.94	8.205

According to the Table 1, the mean percentages of pre-service teachers in effectiveness, attitude and interest were 86.98%, 85.98% and 82.3% respectively. Therefore, pre-service teachers

have higher teaching aptitude in effectiveness. According to the result, teaching aptitude of pre-service teachers was satisfactory enough because the mean percentage value of teaching aptitude was 84.94.

2. Gender Differences in Teaching Aptitude of Pre-service Teachers from Sagaing University of Education

Firstly, descriptive statistics was conducted to explore gender differences in teaching aptitude of pre-service teachers from Sagaing University of Education.

Table 2 Mean and Standard Deviation of Pre-service Teachers' Teaching Aptitude by Gender

Variable	Gender	N	Mean	SD	Mean difference
Teaching Aptitude	Male	100	112.43	8.283	-4.490
	Female	100	116.92	7.519	

According to Table 2, the mean values of teaching aptitude were 112.43 and 116.92 for the male and female pre-service teachers respectively. Female teachers have the higher mean value than male teachers. On the basis of higher mean value, it can be said that female teachers had better aptitude towards teaching profession compared to male teachers.

Table 3 Result of *t*-test for Gender Differences in Teaching Aptitude

Variable	Gender	Mean difference	<i>t</i>	<i>df</i>	<i>p</i>
Teaching Aptitude	Female	-4.490	-4.014***	198	.000
	Male				

According to the result of *t*-test, it was found that there was gender difference in teaching aptitude. It was significantly different at 0.001 level. So, female pre-service teachers had more teaching aptitude than male pre-service teachers. In addition, descriptive statistics was used to find out gender differences in each factor.

Table 4 Result of Mean Comparison for Three Factors of Teaching Aptitude of Pre-service Teachers by Gender

Factors	Gender	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	Mean Difference
Effectiveness	Male	38.61	3.795	-2.285*	198	.023	-1.060
	Female	39.67	2.667				
Attitude	Male	33.57	3.288	-3.970***	198	.000	-1.640
	Female	35.21	2.500				
Interest	Male	40.25	3.891	-3.365**	198	.001	-1.790
	Female	42.04	3.626				

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

According to the result of Table 4, female pre-service teachers' mean scores were better than male on three factors of teaching aptitude. And there was statistically significant between genders on three factors.

3. Grade Differences in Teaching Aptitude of Pre-service Teachers from Sagaing University of Education

Descriptive statistics was applied to investigate the teaching aptitude of pre-service teachers by grade.

Table 5 Means and Standard Deviations of Pre-service Teachers by Grade

Variable	Grade	N	Mean	SD	Mean Difference
Teaching Aptitude	First Year	100	114.04	8.829	-1.270
	Fifth Year	100	115.31	7.521	

Table 5 showed that the means and standard deviations of first year pre-service teachers were 114.04 and 8.829. Fifth year pre-service teachers' means and standard deviation were 115.31 and 7.521. According to this table, the mean score of fifth year pre-service teachers was slightly better than that of first year pre-service teachers.

Table 6 Result of t-test for Grade Difference in Teaching Aptitude

Variable	Grade	Mean Difference	t	df	p
Teaching Aptitude	First Year	-1.270	-1.095	198	.275
	Fifth Year				

Owing to the result of t-test, the difference in teaching aptitude of pre-service teachers by grade has not been found to be significant. To know more detailed, the means and standard deviations for the three factors of teaching aptitude by grade were shown in Table 7.

Table 7 Result of Mean Comparisons for Three Factors of Teaching Aptitude of Pre-service Teachers by Grade

Factors	Grade	Mean	SD	t	df	p	Mean Difference
Effectiveness	First Year	38.48	3.963	-2.867**	198	.005	-1.320
	Fifth Year	39.80	2.344				
Attitude	First Year	34.58	2.760	.887	198	.376	.380
	Fifth Year	34.20	3.275				
Interest	First Year	40.98	4.154	-.604	198	.547	-.330
	Fifth Year	41.31	3.550				

** p < .01

In Table 7, fifth year pre-service teacher's mean score was better than first year pre-service teachers for the first factor. There was a significant difference for the first factor (teacher perception of teacher effectiveness), but there was no significant difference on other two factors of

teaching aptitude (attitude toward teaching profession and interest) of pre-service teachers by grade.

4. Age differences in Teaching Aptitude of Pre-service Teachers from Sagaing University of Education

To examine whether there were any differences in teaching aptitude of pre-service teachers by age, a descriptive analysis was reported in Table 8.

Table 8 Means and Standard Deviations of Pre-service Teachers' Teaching Aptitude by Age

Variable	Age Groups	N	Mean	SD
Teaching Aptitude	18-21	100	114.04	8.829
	22-25	97	115.31	7.629
	26-29	3	115.33	2.517
	Total	200	114.68	8.205

Student teachers from Sagaing University of Education were classified into three age groups, students' age groups between 18 and 21 years, between 22 and 25 years and then between 26 and 29 years. It can be concluded that overall teaching aptitude was found at maximum level in the pre-service teachers with age group (26-29 years), at average level in the age group (22-25 years), and at minimum level in the age group (18-21 years).

Table 9 ANOVA Result for Teaching Aptitude of Pre-service Teachers

Factors		Sum of Squares	df	Mean Square	F	p
Effectiveness	Between Groups	88.000	2	44.000	4.131*	.017
	Within Groups	2098.080	197	10.650		
	Total	2186.080	199			
Attitude	Between Groups	7.894	2	3.947	.428	.652
	Within Groups	1815.686	197	9.217		
	Total	1823.580	199			
Interest	Between Groups	8.395	2	4.198	.280	.756
	Within Groups	2952.400	197	14.987		
	Total	2960.795	199			
Teaching Aptitude	Between Groups	80.647	2	40.323	.596	.552
	Within Groups	13317.228	197	67.600		
	Total	13397.875	199			

* $p < .05$

The result expressed that there was significant difference in teacher perception of teacher effectiveness at 0.05 significant level. But, there was no significant difference in attitude towards teaching profession and teaching interest.

Table 10 Result of Tukey HSD for First Factor of Teaching Aptitude by Age

Factor	(I) Age	(J) Age	Mean Difference (I-J)	<i>p</i>
Teacher Perception of Teacher Effectiveness	18-21	22-25	-1.304*	.015
		26-29	-1.853	.597
	22-25	18-21	1.304*	.015
		26-29	-.550	.955
	26-29	18-21	1.853	.597
		22-25	.550	.955

* $p < .05$

Table 10 indicated that the pre-service teachers of 22-25 years age group were significantly higher than the teachers of 18-21 years age group in teacher perception of teacher effectiveness at 0.05 level.

Discussion and Conclusion

Discussion

Aptitude has future reference and tries to predict the degree of attainment or success of an individual in an area or activity after adequate training. Teaching aptitude is a person's capacity to acquire proficiency in the teaching under appropriate conditions (Gull Kulsooma & Jan Tasleema, 2002). Teaching aptitude is a crucial role in promoting the quality of teacher education and in teaching learning process. It is important for not only pre-service teachers but also in-service teachers. To succeed in teaching, every teacher must have high teaching aptitude. Pre-service teachers are the energy of today and the bright hope of the future. Thus, this study was made to investigate pre-service teachers' teaching aptitude in Sagaing University of Education.

In the present study, teaching aptitude was measured by the three factors according to Ushakumari (2008). These factors are teacher perception of teacher effectiveness, attitude towards teaching profession and teaching interest. Unless a teacher has better perception of effective teaching, he can never do justice to his profession. The content of teacher effectiveness includes some aspects of the teachers' aptitude. Teacher effectiveness must be defined in terms of behaviors and learning of students, not behaviors of teachers (Shweta Tyagi, 2013). The most important factor that affects a teacher's success and efficiency is his attitude towards teaching profession (Kavcar, 2005, cited in Guneyli and Aslan, 2009). Teachers' attitudes influence on their performance and behavior. Teachers' attitudes towards teaching have an effect not only on their teaching practice but also on their students. Teachers' interests may act as a lens for understanding classroom situations and possible solutions. An interested teacher can inculcate interest for the subject in students and all other activities, in and out of the school (Mishra, 2012). It is essential

that a teacher should have positive interest in teaching to attain efficiency in every aspect of teaching. All three factors are very important and related to teaching aptitude.

In the present study, the factors of teaching aptitude of pre-service teachers from Sagaing University of Education are satisfactory. It can be considered that they possess good mental ability, positive attitude towards adaptability, professional information and interest in profession. According to the result, the factor of teacher effectiveness is the best among three factors. Based on the assumption of Sharma (1971), it can be interpreted that the higher the teachers' teaching effectiveness, the higher the school effectiveness. After the teaching aptitudes of pre-service teachers were studied according to gender, it was found that teaching aptitude of male pre-service teachers was weak. Some male pre-service teachers have reached into Sagaing University of Education due to the encouragement by their parents and environment. Thus, they must be motivated to be interested in and appreciate on teaching profession at current time. For female pre-service teachers, they were more capable to concentrate on their teaching profession. In this study, it was also found that pre-service teachers' aptitudes were different according to their ages and grades. It was found that grade or qualification was linked with the teaching aptitude of pre-service teachers. Similarly, pre-service teachers having higher academic and professional qualification (grade) possessed more teaching aptitude. Moreover, it was observed that teaching aptitude increased with age, and there was a strong link between age and teaching aptitude. So, teaching aptitude of pre-service teachers came with age and professional qualification.

According to the research findings and related literature review, the following recommendations should be made to become sound aptitude of pre-service teachers.

- Should have an aptitude test for selecting pre-service teachers.
- Should provide effective trainings for supporting pre-service teachers' teaching aptitude.
- Should train pre-service teachers to appreciate on teaching profession.
- Should provide conferences, staff development programme, seminars and other activities that will develop pre-service teachers' positive attitudes, interests and perceptions affected on teaching aptitude.
- Should provide instructional strategies concerning academic course and co-curriculum activities.
- Should give adequate training programme for not only pre-service teachers but also in-service teachers to enhance teaching aptitude annually.
- Should evaluate with an aptitude test whether there were any changes in pre-service teachers' teaching aptitude during training and after training.

Based on the findings of the study, some of the contributions are made as follows.

- The present study identified teaching aptitude of pre-service teachers as an important factor contributing to the improvement of quality of education.
- This study will contribute for giving the knowledge of various aspect of teaching aptitude.
- This study will contribute to compare the teaching aptitude of teachers in different types of school.
- This study will help teacher educators for nurturing and creating good attitudes of pre-service teachers towards teaching profession.
- By this study, teacher community will get sensitized about the factors of teaching aptitude.
- This study will provide teacher educators' efforts on developing teaching aptitude among the pre-service teachers.

- This study may be helpful in the assessment of pre-service teachers' teaching aptitude.
- This study will support to an extent for teacher education and teacher training programmes in Myanmar.

Conclusion

The main aim of this study was to investigate teaching aptitude of pre-service teachers from Sagaing University of Education. A survey study was made in 2022-2023 academic year to examine aptitude level of 200 pre-service teachers from Sagaing University of Education. Pre-service teachers' aptitude was measured by Teaching Aptitude Questionnaire. by Jain & Vishihta (2011).

Among three factors of teaching aptitude, the highest scoring factor is teacher perception of teacher effectiveness (mean percent value 86.98). So, it can be said that pre-service teachers from Sagaing University of Education had high perception of teacher effectiveness. According to the result of the study, it can be interpreted that pre-service teachers from Sagaing University of Education had satisfactory level of teaching aptitude (mean percent value 84.94). On the other hand, the mean percentage values of attitude subscales and interest subscale were 85.98 and 82.3. So, it may be assumed that attitude and interest of pre-service teachers were also satisfactory enough.

To explore gender differences in teaching aptitude, the independent sample *t*-test was applied. It can be seen that pre-service teachers' teaching aptitudes significantly differ according to gender. Among all pre-service teachers, female teachers had better aptitude than male teachers. So, this result is harmony with the studies of Singh (2015) on teaching aptitude of BEd teacher trainee of Himachal Pradesh in relation to their gender and stream. The present study was examined whether there was no significant difference in teaching aptitude between first year and fifth year pre-service teachers by using the independent sample *t*-test. According to the result of *t*-test, it can be said that the mean score of teaching aptitude of fifth year pre-service teachers was slightly better than that of first year pre-service teachers. In the two factors of teaching aptitude (teacher perception of teacher effectiveness and teaching interest), fifth year pre-service teachers were better than first year. It can be seen that significant difference was found in teacher perception of teacher effectiveness factor in teaching aptitude by grade. Moreover, age differences in teaching aptitude among first year and fifth year pre-service teachers were investigated by using one way analysis of variance (ANOVA). Based on the result of Tukey HSD, there was significant difference in teacher perception of teacher effectiveness factor in teaching aptitude between teachers of 18-21 years age group and those of 22-25 years age group. It can be concluded that pre-service teachers' teaching aptitude may be dependent upon their existing ages.

Acknowledgements

I would like to offer respectful gratitude to Dr. Myat Myat Thaw, (Rector, Sagaing University of Education). Dr. Khin Hnin Yi (Pro-rector, Sagaing University of Education) and Dr. Cho Kyi Than (Pro-rector, Sagaing University of Education) for their official permission to conduct this study. Then, I would like to express honorable thanks to Dr. Myo Ko Aung (Professor and Head, Department of Educational Psychology, Sagaing University of Education) for his invaluable suggestions, precious comments and support for this study. I also want to express my appreciation and respect to all first-year and fifth-year pre-service teachers from Sagaing University of Education for their help and active participation in conducting this paper.

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ACADEMIC MOTIVATION AND COLLEGE ADJUSTMENT OF STUDENT TEACHERS FROM EDUCATION DEGREE COLLEGES

Chaw Su Win¹, Khin Hnin Nwe²

Abstract

The main purpose of this study is to investigate academic motivation and college adjustment of student teachers from selected Education Degree Colleges. A total of 700 student teachers (Male=209, Female=491) from selected Education Degree Colleges were selected randomly in this study. Quantitative, descriptive research design and survey method were used in this study. The questionnaires were used to collect demographic information of the participants such as gender, subject combination, year and colleges. The Academic Motivation Scale by Robert J. Vallerand, Luc G. Pelletier, Marc R. Blais, & Nathalie M. Briere (1989)) was used to measure academic motivation of Education Degree College students. Both descriptive and inferential statistics such as *t* test and ANOVA were carried out. The *t* test result revealed that there was no significant difference in academic motivation by gender ($t=-1.533, p \geq 0.05$). And then, the *t* test result revealed that there was significant difference in academic motivation by year ($t=3.044, p < 0.01$). According to ANOVA result, there was no significant difference in academic motivation by subject combination ($F=.632, p \geq .532$). There was significant difference in academic motivation by colleges ($F=11.493, p < .001$). And College Adjustment questionnaire, the Student Adaptation to College Questionnaire (SACQ); developed by Baker & Siryk, 1984, 1999) was used to measure college adjustment of Education Degree College student teachers. Both descriptive and inferential statistics such as *t* test and ANOVA were carried out. The *t* test result revealed that there was no significant difference in college adjustment by gender ($t=1.067, p \geq 0.05$). The *t* test result revealed that there was significant difference in college adjustment by year ($t=3.728, p < 0.001$). According to ANOVA result, there was no significant difference in college adjustment by subject combination ($F=.430, p \geq .650$). There was significant difference in college adjustment by colleges $F=24.767, p < 0.001$). And, the result of correlation analysis revealed that academic motivation and college adjustment was significantly correlated.

Keywords: Academic Motivation, College Adjustment

Introduction

Human being must face a great number of changes throughout one's life. Today's youth view enrolling in college as one of their priorities. When students enroll in the university, their goal is to fulfill their departmental requirements and graduate with honors while also realizing their career goals. The degree to which students expectations are met it directly correlated with their motivation and professional skills (Abu Karsh, 2018). Every students must make the necessary adjustment in order to pursue a college education. Moreover, first year student teachers at college can be a very stressful period of social and academic change.

A number of issues faced by the student teachers included the fact that their classroom, learning materials, and teaching methods differed from those found in universities. The competition is also more subtle. For these situations, students need to adjust academically. Moreover, instructors also need to guide them how to cope these situations. Socially, students need to form and establish new friends both with peers and lecturers. Living with roommates in hostels or halls in the college can have special problems.

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Students who are unable to properly adapt to obstacles report higher level of stress, depressive symptoms (Dyson & Renk, 2006). In contrast, if they can adapt well, they spend more time with peers, have more opportunities to explore different lifestyles and values and be challenged intellectually by academic work (Heaven, 2000). Therefore, college life is both opportunity and challenge for them. Sommer (2013) described students who enthusiasm in and who are parts of social activities may adjust better.

According to Tinto's (1993) student integration theory, if students supervise to have informal and formal social and academic integration, they can reconsider their commitments, goals and intentions from and to the institution Higher levels of interaction can lead to higher levels of student persistence and graduation (Tinto, 1993).

Purpose of the Study

The main aim of this study is to investigate academic motivation and college adjustment of student teachers from selected Education Degree Colleges.

The specific objectives are as follow;

- To compare academic motivation and college adjustment of student teachers by gender and subject combination.
- To compare academic motivation and college adjustment of student teachers by colleges,
- To compare academic motivation and college adjustment of student teachers by Year,
- To examine whether there is a relationship between academic motivation and college adjustment of student teachers

Definitions of Key Terms

Motivation

The simplest definition of motivation boils down to wanting (Baumeister, 2016). We want a change in behavior, thoughts, feelings, self-concept, environment, and relationships.

Academic Motivation

Academic motivation is defined by a student's desire (as reflected in approach, persistence, and level of interest) regarding academic subjects when the student's competence is judged against a standard of performance or excellence (McClelland, et al., 1953).

Adjustment: is a continual process by which a person varies his/her behavior to produce a more harmonious relationship between himself/herself and his/her environment (Aggarwal, 1998).

College adjustment: refers to how successfully a student meets educational demands, commits to the institutional goals, deals with interpersonal experiences, and manages psychological distress during their first year of college (Baker & Siryk, 1989).

Materials and Methods

Research Design and Participants

The sample of this study consists of 700 student teachers from selected Education Degree Colleges. The participants of this study were 200 student teachers from Mawlamyine Education Degree College, 150 student teachers from Hpa-an Education Degree College, 200 student teachers

from Yankin Education Degree College and 150 student teachers from Thingangyun Education Degree College was selected. The sample was chosen by using simple random sampling method.

Instrumentation

Instrument of Academic Motivation; The Academic Motivation Scale by Robert J. Vallerand, Luc G. Pelletier, Marc R. Blais, & Nathalie M. Briere (1989) measures the seven subscales of motivation towards college studies. It contains 28 items assessed on a 5-point scale. The AMS-C 28 is subdivided into seven subscales which measures three types of intrinsic motivation (intrinsic motivation to know, to accomplish things, and to experience stimulation), three types of extrinsic motivation (external, introjected, and identified regulation) and amotivation. Cronbach's alphas was calculated to assess the internal consistency of academic motivation for the whole sample ($\alpha=.729$).

Instrument of Student Adaptation to College Questionnaire SACQ; the Student Adaptation to College Questionnaire SACQ; developed by Baker & Siryk, 1984, 1999) was used. This inventory is intended to access the four dimensions of the Student Adaptation to College Questionnaire (SACQ) was composed of 50 items and it has four subscales of college adjustment; Academic adjustment, Social adjustment, Personal/Emotional adjustment and Institutional adjustment. This questionnaire concerns five-point Likert scale; strongly disagree, disagree, agree, and strongly agree with a score of 1, 2, 3, and 4 respectively. Cronbach's alphas was computed to measure the internal consistency of college adjustment for the whole sample ($\alpha=.732$).

Finding

Descriptive Statistics for Academic Motivation of Student Teachers

In terms of descriptive statistics, minimum-maximum scores, mean and standard deviation of academic motivation were calculated and used to describe the data. The results of analysis were described in Table 1.

Table 1. Descriptive Statistics for Academic Motivation of Student Teachers

Variables	Minimum	Maximum	Mean	SD
Academic Motivation	99	139	122.15	7.089

Table. 1 indicated that the mean score and standard deviation for the whole scale were 122.15 and 7.089 respectively. Moreover, to be more specific the independent samples *t* test was used to examine the differences in academic motivation by gender. So, the independent samples *t* test result were described in Table 2.

Table 2. Results of Independent Sample *t* Test for Academic Motivation by Gender

Variable	Gender	Number	<i>t</i>	<i>df</i>	<i>P</i>
Academic Motivation	Male	209	-1.533	698	.126
	Female	491			

According to table 2, there was no significant difference in academic motivation by gender ($t=-1.533, p \geq 0.05$). The academic motivation did not differ significantly between the male and

female student teachers. The reason is attitude, capabilities and behaviors of teenagers are generally similar than varying.

Comparison for Academic Motivation of Student Teachers by Years

To find out the year differences between year 1 and year 2 student teachers in academic motivation statistical descriptive analysis was conducted. The independent samples *t* test was used to examine the differences in academic motivation by years. So, the mean, standard deviation, and the independent samples *t* test result were described in Table 3.

Table 3. Results of Independent Sample *t* Test for Academic Motivation by Education Level

Variable	Years	Number	Mean	SD	<i>t</i>	<i>df</i>	<i>P</i>
Academic Motivation	Year 1	540	122.59	7.058	3.044	698	.002**
	Year 2	160	120.66	7.009			

Note** the mean difference was significant at 0.01 level

According to table 3. there was significant difference in academic motivation by years ($t=3.044, p \leq 0.01$). It was revealed that the academic motivation differs significantly between the year 1 and year 2 student teachers. Student teachers have to demonstrate the complex combination of knowledge, understanding, skills and practice values and disposition growth and development while competencies were introduced in year 1 and developed in year 2. In year 1 student teachers tend to build a strong foundation and continually build the knowledge and understanding, skill and disposition to improve their practice over their professional career.

Comparison for Academic Motivation of Student Teachers by Subject Combination

To test the statistically significant differences among academic motivation of student teachers by subject combination, one-way analysis of variances (ANOVA) was conducted and the results were shown in Table 4.

Table 4. ANOVA Result for Academic Motivation of Student Teachers by Subject Combination

Variable		Sum of Square	<i>df</i>	Mean Square	<i>F</i>	<i>P</i>
Academic Motivation	Between Groups	63.595	2	31.797	.632	.532
	Within Groups	35059.543	697	50.301		
	Total	35123.137	699			

According to ANOVA result, there were no significant differences in academic motivation ($F=.632, p \geq .532$). Student teachers from both year 1 and 2 have to study the same learning areas and subject. A spiral curriculum approach student teachers return to familiar concept and then to obtain more detail information of how different in student teachers' academic motivation by subject combination.

To explore whether the differences of academic motivation by colleges were significant or not, one way analysis of variance (ANOVA) was conducted. The results of the analysis were displayed in Table 5.

Table 5. Result of ANOVA for Academic Motivation by Colleges

Variables		Sum of Square	df	Mean Square	F	P
Academic Motivation	Between Groups	1657.800	3	552.600	11.493	.000***
	Within Groups	33465.337	696	48.082		
	Total	35123.137	699			

Note***the mean difference was significant at 0.001

According to the result of Table 5, there were significant differences in student teachers' academic motivation by colleges at .001 level ($F=11.493, p \leq .001$). To obtain more detailed information on which particular colleges had the significant differences, the Post Hoc Test was carried out by Games-Howell method. The results were shown in Table 6.

Table 6. Result of Games-Howell Test for Academic Motivation by Colleges

Variable	College (I)	College (J)	Mean Difference (I-J)	P
Academic Motivation	MEDC	HEDC	-.902	.640
		YEDC	2.120*	.012*
		TEDC	3.112*	.000***
	HEDC	MEDC	.902	.640
		YEDC	3.022*	.000***
		TEDC	4.013*	.000***
	YEDC	MEDC	-2.120*	.012*
		HEDC	-3.022*	.000***
		TEDC	.992	.534
	TEDC	MEDC	-3.112*	.000***
		HEDC	-4.013*	.000***
		YEDC	-.992	.534

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

Note**the mean difference was significant at 0.01 level.

Note***the mean difference was significant at 0.001 level.

According to the Post Hoc Test Games-Howell results, it was found that there was significant difference by colleges. The reasons behind this may be the following facts. The study habits and efforts of student teachers may not equal because of their different values and

expectations regarding their college life. Student motivation will be associated with study habits and efforts (Maurer et al., 2008).

Comparison for College Adjustment of Student Teachers by Gender

To be more specific the independent samples *t* test was used to examine the differences in college adjustment by gender. So, the mean, standard deviation, and the independent samples *t* test result were described in Table 7.

Table 7. Results of Independent Sample *t* Test for College Adjustment by Gender

Variable	Gender	Number	<i>t</i>	<i>df</i>	<i>P</i>
Academic Motivation	Male	209	.721	698	.471
	Female	491			

According to table 7, there was no significant difference in college adjustment by gender ($t=1.067, p \geq 0.05$). It was revealed that the college adjustment did not differ significantly between the male and female student teachers. Degree of adjustment experienced by each students depend on background, experience, environmental factor.

Comparison for College Adjustment of Student Teachers by Years

To be specific the independent samples *t* test was used to examine the differences in college adjustment by years. So, the mean, standard deviation, and the independent samples *t* test result were described in Table 8.

Table 8. Results of Independent Sample *t* Test for College Adjustment by Education level

Variable	Years	Number	<i>t</i>	<i>df</i>	<i>P</i>
Academic Motivation	Year 1	540	3.728	698	.000***
	Year 2	160			

Note**the mean difference was significant at 0.001 level.

According to table 8, there was significant difference in college adjustment by years at 0.001 level ($t=3.728, p \leq 0.001$). It was revealed that the college adjustment differ significantly between the year 1 and year 2 student teachers. These include attending all the discussions or lectures, reading and exploring new books and reviewing notes regularly. College administrator and faculty should implement programs that can intensify adjustment of students to college. The future researchers may include other variables that can affect the level of adjustment to college.

To test the statistically significant differences among college adjustment of student teachers by subject combination, one-way analysis of variances (ANOVA) was conducted and the results were shown in Table 9.

Table 9. ANOVA Result for College Adjustment of Student Teachers by Subject Combination

Variable		Sum of Square	df	Mean Square	F	P
College Adjustment	Between Groups	137.350	2	68.675	.430	.650
	Within Groups	111194.037	697	159.532		
	Total	111331.387	699			

According to ANOVA result, there were no significant differences in college adjustment ($F=.430$ $p\geq.650$). It seems like how successfully every student teachers meet educational demands, commit to the institutional goals, deal with interpersonal experiences and manage psychological distress. They learn both science, arts & science and arts so that there is flexibility in teacher deployment in basic education school.

To explore whether the differences of college adjustment by colleges were significant or not, one way analysis of variance (ANOVA) was conducted. The results of the analysis were displayed in Table 10.

Table 10. Result of ANOVA for College Adjustment by Colleges

Variables		Sum of Square	df	Mean Square	F	P
College Adjustment	Between Groups	10738.790	3	3579.597	24.767	.000***
	Within Groups	100592.597	696	144.530		
	Total	111331.387	699			

Note***the mean difference was significant at 0.001

According to the result of Table 10, there were significant differences in student teachers' college adjustment by colleges at .001 level ($F=24.767$, $p\leq.001$). The reasons behind this may be the following facts. Students' interaction with faculty (teachers) may diverse among Education Colleges. If there was a rapport between students and teachers, students may have opportunities to discuss their feelings and adjustment difficulties and may also get guidance from teachers (faculty support). Students who dedicate their energy to interact with faculty members, their adjustment level increase (Yalim, 2007).

To know whether there were significant relationships between academic motivation scores and college adjustment scores; Pearson Product-Moment Correlation was conducted. The results of the analysis were displayed in Table 11.

Table 11. Relationship between Academic Motivation and College Adjustment of Student Teachers

Variables	Academic Motivation	College Adjustment
Academic Motivation	-	.612***
College Adjustment	.612***	-

Note*** Correlation is significant at the 0.001 level

According to Table 11, the result showed that there was significant positive relationship between academic motivation and college adjustment of student teachers ($r=.612, p\leq 0.001$).

According to Table 11, the result revealed that there was a statistically significant positive correlation between overall academic motivation and overall college adjustment ($r=0.655$ ($r=0.612, p\leq 0.001$), it can be seen that academic motivation was positively correlated with college adjustment.

Therefore, it can be said that Education Degree College student teachers with high intrinsic motivation and well integrated extrinsic motivation may be better in their college adjustment.

Conclusion

This study showed that the student teachers from four selected Education Degree Colleges learned educational studies, Myanmar, English, mathematics, sciences, social studies, arts, local curriculum, physical education and ICT in their education Degree colleges. Therefore, they may be curious and have eager to explore about their interests. Intrinsically motivated behavior is characterized by “curiosity, exploration, manipulation, spontaneity, and interest” (Petersen, Louw & Dumont, 2009). To maintain and improve student teachers’ intrinsic motivation, faculty members should equally provide autonomy, competence and relatedness.

Students who were well adjusted to university reported to receive more social support than moderately or poorly adjusted students (Halamandaris & Power, 1997). In addition, student teachers may replace family support systems with peer support systems to separate past communities (Law, 2007). Misra et al., (2000) described perceived social support from friends was predictive students’ adjustment. Above these facts, the student teachers from four selected Education Degree Colleges had better college adjustment. The instructors should guide college students to seek adequate social support for adjusting to the new demands, tasks, responsibilities and requirements of college life.

Differences in Academic Motivation by Gender: There was no significant difference in academic motivation by gender ($t=-1.533, p\geq 0.05$). The academic motivation did not differ significantly between the male and female student teachers. The reason is attitude, capabilities and behaviors of teenagers are generally similar than varying by gender.

Differences in College Adjustment Gender: It was revealed that the college adjustment does not differ significantly between the male and female student teachers Degree of adjustment experienced by each students depend on background, experience, environmental factor

Differences in Academic Motivation by Education Level: The result of independent sample t test for comparing academic motivation revealed that the year 1 student teachers had more academic motivation than the year 2 student teachers. This is particularly important for college students because the year of university is a very complex and sensitive moment that, on the one hand, can bring unique and positive changes but, on the other hand, can often give rise to negative

outcomes, such as switching academic courses or abandoning the university altogether. Students are not always able to ask for support, and when they do, the situation has often become problematic.

Differences in College Adjustment by Education Level: The result of independent sample *t* test for comparing college adjustment revealed that the year 1 student teachers had college adjustment than the year 2 student teachers. These include attending all the discussions or lectures, reading and exploring new books and reviewing notes regularly. The college administrator and faculty should implement programs that can intensify adjustment of students to college. The future researchers may include other variables that can affect the level of adjustment to college

Differences in Academic Motivation by Colleges: The ANOVA results for academic motivation by colleges revealed that there was significant difference in academic motivation among four selected Education Colleges. The study habits and efforts of student teachers may not equal because of their different values and expectations regarding their college life. Student motivation will be associated with study habits and efforts (Maurer et al., 2008).

Differences in College Adjustment by Colleges: The ANOVA results for college adjustment by colleges showed that there was significant difference in college adjustment among four selected Education Colleges. Students' interaction with faculty (teachers) may diverse among Education Colleges. If there was a rapport between students and teachers, students may have opportunities to discuss their feelings and adjustment difficulties and may also get guidance from teachers (faculty support). Students who dedicate their energy to interact with faculty members, their adjustment level increase (Yalim, 2007).

The Relationship between Academic motivation and College Adjustment: The study found that academic motivation had a significant positive correlation with college adjustment. It is consistent with the previous researches conducted by Baker, 2004; Petersen et al., 2009; Sommer, 2013; Bryan, 2013; Vallerand & Bissonnettee (1992).

According to the result of the study, it was found that the higher the academic motivation, the better adjustment to college the student teachers have. For improving and maintaining academic motivation and having better college adjustment of student teachers, this research may provide information for instructors in their educational field. In addition, this research suggests that the other facts such as performance, achievement, persistence and coping may influence academic motivation and college adjustment of student teachers.

This study provides recommendations to institutions of higher education in order to prepare for their student during the orientation of campus life, academic tasks, and how to get along with faculty and fellow college student. Fear of negative evaluation has an effect on academic adjustment and emotional-personal adjustment, but not on social adjustment and institutional adjustment. Facts such as performance, achievement, persistence and coping may influence academic motivation and college adjustment of student teachers. Social avoidance and distress have an effect on academic adjustment, social adjustment, personal-emotional adjustment and institutional adjustment. College students are adolescents who have capability to do highest adjustment with so many dreams, lot of wishes to fulfill it, commitments and flexibility as well.

Acknowledgement

Firstly, I would like to express my respectful thanks to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-Rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-Rector, Yangon University of Education), Dr. Nyo Nyo Lwin (Pro-Rector, Yangon University of Education) for their administrative supports in this study. I am particularly grateful to the members of Ph.D course supervising committee who allowed me to write this paper.

I would also like to thank to my supervisor Dr. Khin Hnin Nwe ((Professor, Head of Department, Department of Educational Psychology, Yangon University of Education) for his generous help, encouragement and motivation. My special gratitude extends to my external examiner, Professor Dr. Khin Thuzar Saw (Principal (Retired), Thingangyun, Education Degree College for her essential help of assessing my research study and in valuable commitment for my study.

I am grateful to all my teachers in Department of Educational Psychology, Yangon University of Education, for guiding me to be convenient in everything with warm and kind hearted supports and then precious suggestions and help.

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AN INVESTIGATION INTO CHILDREN'S PERCEPTION ON INTER-PARENTAL CONFLICT AND SELF-ESTEEM

Aye Swe Htun¹, Su Myat Aye²

Abstract

The main purpose of this study was to investigate children's perception of inter-parental conflict and self-esteem. Descriptive survey research method was applied and quantitative data analysis was executed in this study. For inter-parental conflict, three instruments with 65 items were used. For self-esteem, two instruments with 58 items were used. A total of 843 students from basic education schools (435 males and 408 females) were randomly selected. Grade 6 & 7 students in Shan State, Mandalay Region and Magway Region were examined. The descriptive statistics, the independent sample t-test and one-way ANOVA were conducted. Besides, Post-Hoc test, Pearson's Product-Moment correlation, and regression analysis were undertaken. According to descriptive statistics, children's perception of inter-parental conflict was quite prominent and their self-esteem was relatively high. Based on the result of the independent sample t-test, there was no significant difference in children's perception of inter-parental conflict and self-esteem according to gender and grade. According to the result of One-way ANOVA, there was no significant difference in children's perception of inter-parental conflict and self-esteem. The result of Pearson's Product Moment correlation showed that there was a significant relationship between children's perception on inter-parental conflict and their self-esteem. Regression was conducted to investigate the best prediction of self-esteem scores.

Keywords: perception, inter-parental conflict and self-esteem

Introduction

One of the primary goals of education is to promote a child's holistic development. It seeks to grow the overall personality of the children. These include psychological and social growth. Every child has the capacity to do something remarkable for his or her life. When a child's imagination is unlocked, possibilities are opened up and they can also be flexible in any situation.

Family environment is the most critical development of a child's personality, psychological and physical growth. The family is an effective social agent; especially parents play a primary role in many areas of a child development such as self-esteem. In contrast, the conflict in the family has the impact on the child's development. So, Inter-parental conflicts are present in all societies across the globe. The conflicts between parents and how they will continue to develop associations potentially affect the children in many ways.

Inter-parental conflict is a term that represents a continuum of parental behaviours ranging from verbal disagreements to physical violence (Grych & Finchman, 1993). The children may accept their parents' conflict in different ways. Moreover, children of parents who engage in significant conflict are more likely to experience internalizing and externalizing symptoms (Buehler et al., 1997). Child internalizing symptoms refer to difficult feelings that are turned inward, such as anxiety, depression, and somatic symptoms, while externalizing symptoms typically refer to negative behaviors directed at others, such as verbal and physical aggression, destruction of property, and theft (Mash & Dozois, 2003).

One of the possible answers become "conflicts" between individuals. If an individual cannot return to the reality world, he or she can lose consciousness, cannot pay attention to people in his or her environment, and cannot give carefulness to his or her child if he or she were a parent. At this time, the problems of inter-parental conflicts become enlarged; as a consequence, their

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children may be the victims of their conflicts. In this situation, the children may suffer from their parents' conflicts and they may try to get freedom themselves by maladjustment factors such as blaming themselves, growing threats, low self-esteem.

Purpose of the study

- To investigate children's perception of inter-parental conflict and self-esteem
- To investigate children's perception of inter-parental conflict and self-esteem by gender, grade and age
- To explore the relationship between inter-parental conflict and self-esteem of children
- To explore the factors affecting the self-esteem of children

Definition of Key Terms

Inter-parental Conflict. Inter-parental conflict is a term that represents a continuum of parental behaviors ranging from verbal disagreements to physical violence (Grych & Finchman F, 1993).

Children's Self-esteem. Self-esteem of children is rather difficult to define, but a skeleton definition of it relates to the level of satisfaction or dissatisfaction that a kid has about himself/herself (Kernis, 2013).

Perception. Perception is a process where we take in sensory information from our environment and use that information in order to interact with our environment (Jennifer Levitas, 2022).

Review of Related Literature

Children's Perception of Inter-parental Conflict: When examining the effects of community violence on early childhood behavior, it is important to consider that young children may have concurrent exposure to family conflict. Family conflict is defined as interparental or interpartner aggression that is characterized by a range of behaviors from verbal or emotional abuse to physical abuse, such as hitting a partner (Straus, 1979). Family conflicts are related to human love, and literature is about human feelings and behavior, also love and romance. That's the reason why inter-parental conflicts can be constructive or destructive, depending on whether their impact on children's development is positive or negative (McCoy *et al.*, 2009).

Children's Self-esteem: Self-esteem is defined as the set of positive or negative evaluations of individuals about their own selves (Rosenberg 1965). Self and self-esteem constitute two different dimensions of personality. The self represents the cognitive part of the personality, whereas self-esteem represents the affective and psychologic dimension. Self-esteem also plays a significant role in students' participation in schools and formal activities as those with high self-esteem appear to be more active and enthusiastic than those with low self-esteem (Zuffiano, *et. al.*, 2011). A high level of perceived satisfaction indicates that the individual has high self-esteem, whereas a low level of satisfaction indicates low self-esteem. Berg and Kelly (1979) compared the self-esteem of children from three different family types. Children classified their families as either intact or satisfactory, intact but unsatisfactory (i.e., "my family fights a lot"), and divorced. Children who viewed their families as intact but unsatisfactory had the lowest self-esteem. Interestingly, children from divorced families were not different from the children from intact, satisfactory families.

Method

Sample of the Study

In this research 843 students (435 males and 408 females) were selected using simple random sampling method. Grade 6 & 7 students from Shan State, Mandalay Region and Magway Region were examined.

Instrumentation

In order to study the children's perception of inter-parental conflict, the researcher used "Children's Perception of Inter-parental Conflict Scale" which was validated by the researcher. Total number of items in inter-parental conflict is 65 items with three subscale; 21 items for conflict properties, 17 items for self-blame and 27 items for threat.

And then, in order to study the children's self-esteem, the researcher used "the State Self-Esteem Scale" which was validated by the researcher. Total number of items in Self-esteem is 58 items with three subscales; 22 items for performance self-esteem, 23 items for social self-esteem and 13 items for physical self-esteem. These items are measured on 4 point Likert scales such as 1 (Strongly Disagree), 2 (Disagree), 3 (Agree) and 4 (Strongly Agree).

Procedure

Firstly, the related literature was studied through intensive reading from a variety of sources such as books, journals, thesis, research papers and internet sources. Next, research instruments were prepared under the guidance of the supervisor to collect data. In order to validate the prepared instruments, expert reviews were requested. According to the suggestion, some items were modified. And then, pilot testing was carried out to assess the reliability coefficient of the respective questionnaires. After the pilot testing, factor analysis was carried out and the researcher analyzed the received data. Factor analysis is used as a tool to investigate the underlying concepts or aspects that the tests or groups of tests are measuring. And then, in order to explore the difference between gender and grade, the independent sample t-test was used. Then, one-way ANOVA was conducted in order to investigate the differences among ages. And Pearson's Product-Moment correlation analysis was undertaken in order to find out the relationship between children's perception of inter-parental conflict and self-esteem. Simultaneous Regression analysis was conducted to investigate the best prediction of self-esteem scores.

Descriptive Statistics of the Children's Perception on Inter-parental Conflict

Descriptive analysis revealed the differences in means and standard deviations with respect to each variable and total perception on inter-parental conflict. To find out the children's perception on inter-parental conflict, descriptive statistics was carried out and the results were shown in Table 1.

Table 1 Descriptive Statistics of the Children's Perception on Inter-parental Conflict

Variables	Number of Items	Mean Percentage	SD	Minimum	Maximum
Conflict Properties	6	56.33%	3.93	6	24
Threat	9	76.42%	5.25	9	36
Self-blame	6	57.60%	3.29	6	24
Perception on Inter-parental Conflict	21	62.45%	8.880	21	81

Since the number of items included in each subscale of perception on inter-parental conflict questionnaire were not the same, the mean scores were transformed to the corresponding mean percentages. According to Table 1, the total mean percentage of perception on inter-parental conflict was 62.45%, the mean percentage of conflict properties, threat and self-blame were slightly different. The threat was the highest mean percentage and it was (76.42%) greater than conflict properties and self-blame. Besides, the mean percentage of the self-blame was (57.60%) slightly greater than conflict properties. After descriptive statistics was conducted, the independent samples *t*-test was used to examine differences in the mean scores of the study sample for the test of children's perception on inter-parental conflict in relation to the gender variable.

Comparison of Perception on Inter-parental Conflict by Gender

In order to explore the differences in children's perception of inter-parental conflict by gender, descriptive statistics and independent samples *t*-test were conducted. Descriptive analyses revealed the differences in means and standard deviations with regard to each variable of perception on inter-parental conflict by gender. The results were shown in Table 2.

Table 2 Mean Comparison of Children's Perception on Inter-parental Conflict by Gender

Variables	Gender	N	Mean	SD	<i>t</i>	df	<i>p</i>	Mean difference
Conflict Properties	Male	430	13.62	3.76	.791*	841	.032	.214
	Female	413	13.42	4.09				
Threat	Male	430	27.23	5.54	1.582**	841	.006	-.571
	Female	413	27.80	4.92				
Self-blame	Male	430	11.61	3.31	1.655	841	.524	.375
	Female	413	11.23	3.26				
Perception on Inter-parental Conflict(Total)	Male	430	52.46	8.56	.028	841	.301	.017
	Female	413	52.45	9.21				

p* < .05, *p* < .01



Figure 1 Mean Comparison of Perception on Inter-parental Conflict by Gender

According to Table 2, the total mean scores of inter-parental conflicts were almost similar by gender (male = 52.46, female = 52.45). In the subscale of conflict properties, the mean scores of male students were slightly greater than female students and it was found that there was significant difference at the 0.05 level ($t = .791, p = .032$). It can be concluded that male students were significantly higher than female students in conflict properties.

In the subscale of threat, female students were higher than the male students and it was also found that there was significant difference between male and female at 0.01 level ($t = -1.582, p = .006$). It can be concluded that female students had been more highly threatened by their parents than male students in conflicts. It was congruent with the previous study in which there was a highly significant main effect on threat of boys and girls when they perceive inter-parental conflicts (Yahya, 2014). The findings indicated that boys reported lower level of threat than girls. The possible reason may be that female students are more frightened to be shamed by something in their nature than male students. In Myanmar culture, girls solve the problems silently and thus other people have the opportunity to threaten to them.

In the subscale of self-blame, the mean scores of male students were higher than the female students but there was no significant difference between them. Moreover, it was found that there was no significant difference in the perception of inter-parental conflict.

Table 3 Mean Comparison of Children’s Perception on Inter-parental Conflict by Grade

Variables	Grade	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Conflict Properties	Grade - 6	386	13.60	.579	841	.131
	Grade - 7	457	13.45			
Threat	Grade - 6	386	27.18	-1.712	841	.427
	Grade - 7	457	27.80			
Self-blame	Grade - 6	386	11.72	2.393*	841	.029
	Grade - 7	457	11.18			
Perception of Inter-parental Conflict	Grade - 6	386	52.50	.129	841	.942
	Grade - 7	457	52.42			

* $p < .05$

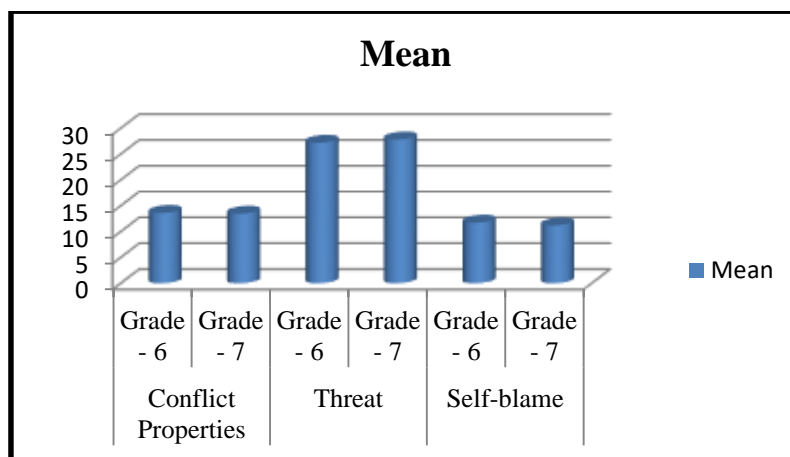


Figure 2 Mean Comparison of Perception on Inter-parental Conflict by Grade

According to Table 3, the total mean scores of inter-parental conflicts by grade were slightly different. In the conflict properties, the mean score of Grade-6 students were slightly higher than the mean score of the students of Grade-7, there was no significant difference between them. In the subscale of threat, the mean score of Grade-7 students was higher than that of Grade-6 students, there was also no significant difference between them.

In the subscale of self-blame, it was found that there was significant difference between Grade-6 and Grade-7 students at 0.05 level ($t = 2.393, p = .029$) with the mean scores of Grade-6 students were 0.54 higher than that of Grade-7 students. It can be concluded that Grade-6 students were highly more blamed on themselves than Grade-7 students in inter-parental conflict.

In Piaget's cognitive development theory, Grade-6 students included in the concrete operational stage and they begin to start new feature of thinking and operating new things that challenges to them. Thus, boys make more mistakes than girls because they were interested in new things and they like to get new knowledge and experience by handling them whether it may be right or wrong. In this way, they gradually have the opportunity to get autonomy and responsibility for their life. Therefore, they blame on themselves whatever happen in their environment including their inter-parental conflicts. It was congruent with the previous study that there was a significant difference between six grade and seventh grade students. The finding suggested that the seventh-grade students more blamed on themselves by their parents and environment in their parental conflicts (Cummings et al., 2012). It was found that there were no significant differences between the total mean scores of students by grade.

Table 4 Mean Comparison of Children's Perception on Inter-parental Conflict by Age

Variables	Age	N	Mean	SD
Conflict Properties	10-11 years	148	13.34	3.70
	12-13 years	634	13.58	3.96
	14-above	61	13.34	3.93
Threat	10-11 years	148	27.10	5.68
	12-13 years	634	27.76	5.04
	14-above	61	25.97	5.97

Variables	Age	N	Mean	SD
Self-blame	10-11 years	148	11.50	3.63
	12-13 years	634	11.40	3.18
	14-above	61	11.44	3.56
Perception on Inter-parental Conflict	10-11 years	148	51.94	9.17
	12-13 years	634	52.74	8.66
	14-above	61	50.75	10.26

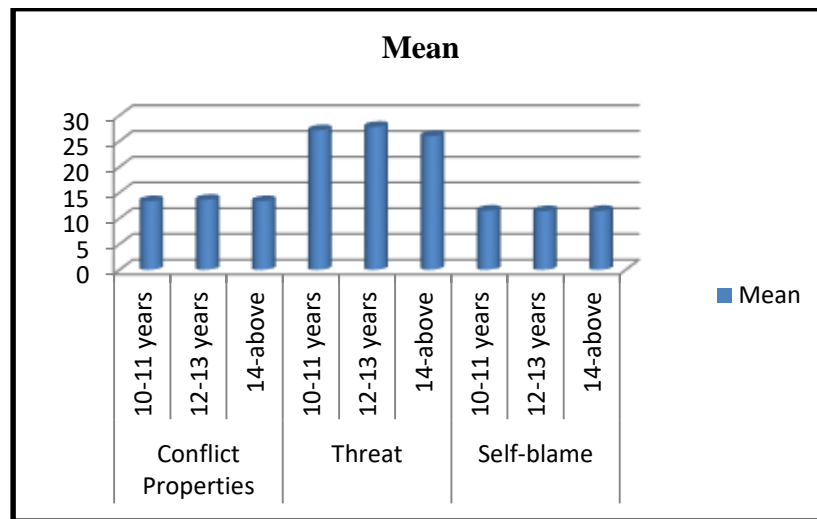


Figure 3 Mean Comparison of Perception on Inter-parental Conflict by Age

According to Table 4, the 12-13 years old students had the highest mean score in the subscales of conflict properties; threat and the total mean scores of inter-parental conflict. In the subscale of self-blame, the students with the age of 10-11 years had the higher mean score than the other age group. Besides, one way analysis of variance (ANOVA) was worked out so that it would observe clearly the significant differences in inter-parental conflict. The ANOVA results were presented in Table 5.

Table 5 ANOVA Results for the Subscales of Inter-parental Conflict by Age

Variables		Sum of Squares	df	Mean Square	F	p
Conflict Properties	Between Groups	8.873	2	4.437	.287	.750
	Within Groups	12965.592	840	15.435		
	Total	12974.465	842			
Threat	Between Groups	208.612	2	104.306	3.814*	.022
	Within Groups	22970.007	840	27.345		
	Total	23178.619	842			
Self-blame	Between Groups	1.135	2	.567	.052	.949

Variables		Sum of Squares	df	Mean Square	F	p
	Within Groups	9104.680	840	10.839		
	Total	9105.815	842			
Perception on Inter-parental Conflict	Between Groups	266.691	2	133.346	1.694	.184
	Within Groups	66126.300	840	78.722		
	Total	66392.992	842			

* $p < .05$

According to Table 5, it was found that there was a significant difference in threat at 0.05 level ($p = .022$). There were no significant differences in the subscales of conflict properties and self-blame and also no significant difference in the perception of inter-parental conflict. Therefore, the Post Hoc Test was calculated in terms of Games-Howell method in order to observe more detailed information about the significance. The Post Host Test results were described in Table 6.

Table 6 Multiple Comparison for the Subscales of Perception on Inter-parental Conflict by Age

Variable	(I) Age	(J) Age	Mean Difference (I-J)	Sig.
Threat	10-11 years	14-above year	1.790*	.029
	12-13 years			

* $p < 0.05$

According to Table 6, it was found that 10-11 years and 12-13 years old students and 14-above years old students at the .05 level were significantly difference ($p = .029$) in threat. It can be concluded that 10-11 years and 12-13 years old students had been more threatened than the 14-above years old students.

The reason may be that students in the age of 12-13 years included in the formal operational stage of Piaget's cognitive development. They start to think about not only tangible objects and events, but also hypothetical or abstract ones. On the other hand, they begin to think themselves like an adult. Thus, they want to participate in every situation especially in their family affairs. At this situation, the time when they consider something went wrong and when their parents' emotion may be in high rate, they may be the victims of their parents' conflicts. There were some previous studies in which adolescence were more exposed to interparental conflict and violence than young adulthood (Martin et al., 2017), and preschool children experience more fear and threats than older children when exposed to interparental conflict (Kitzmann et al., 2003).

Descriptive Statistics for Components of Self-esteem

Table 7 Descriptive Statistics for Components of Self-esteem

Variables	Number	Mean Percentage	SD	Minimum	Maximum
Performance Self-esteem	843	76.36%	3.027	6	24
Social Self-esteem	843	72.49%	4.904	10	39
Self-esteem (Total)	843	74.04%	6.624	18	60

Since the number of items included in each subscale of self-esteem questionnaire were not the same, the mean scores were transformed to the corresponding mean percentages. According to Table 7, the total mean percentage of self-esteem was 74.04%, the mean percentage between variables were slightly different. The performance self-esteem was (76.36%) higher than the social self-esteem. Therefore, it was found that the performance self-esteem was better than social skill self-esteem among students.

Table 8 Mean Comparison of Self-esteem by Gender

Variables	Gender	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Performance Self-esteem	Male	430	18.05	-2.748**	841	.006
	Female	413	18.62			
Social Self-esteem	Male	430	26.00	-.645	841	.519
	Female	413	26.22			
Self-esteem (Total)	Male	430	44.05	-1.730	841	.084
	Female	413	44.84			

** $p < 0.01$

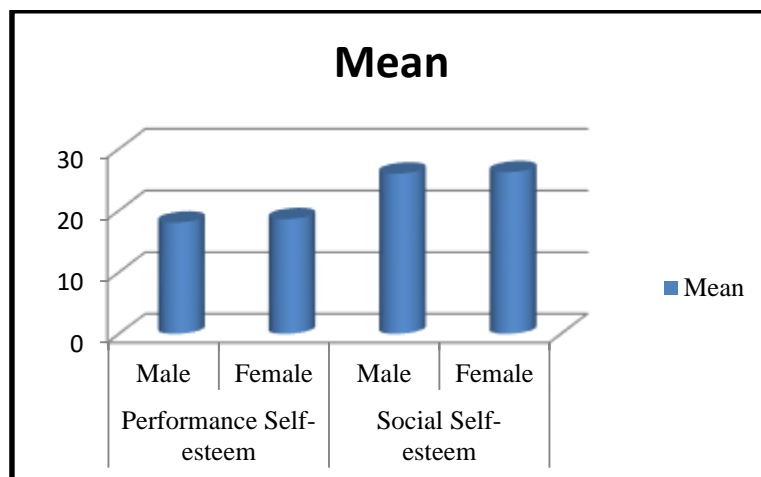


Figure 4 Mean Comparison of Self-esteem by Gender

According to Table 8, the total mean scores of self-esteem for female students were higher than male students. Moreover, the mean score of female students were also higher than male students in the performance self-esteem and social self-esteem. Besides, the performance self-esteem of female students was significantly different from male students at the 0.01 level ($t = -2.748, p=.006$). From the observation of the mean scores for the whole sample, it can be concluded that female students were significantly higher in performance self-esteem than male students.

The possible reason may be that females may be highly extroverted than males. Some of the previous studies showed that females reported highly extroversion than males (Weisberg et al.,

2011) and females found to be more agreeable than males (Feingold, 1994). Therefore, females may be more sociable and in good communication in their society. They may be preferable in showing their skills, excellent performance and mastery in front of a crowd with bravery than that of males. Moreover, they may be solved problems with tender kind hearted in any situation. On the other hand, they may adjust well in their environment that's why they may be higher performance self-esteem than males. The result was congruent with some previous studies in which females had higher levels of performance self-esteem than males (Vorbach, 2002).

Table 9 Mean Comparison of Self-esteem by Grade

Variables	Grade	N	Mean	<i>t</i>	<i>df</i>	<i>p</i>
Performance Self-esteem	Grade - 6	386	18.35	.207	841	.836
	Grade - 7	457	18.31			
Social Self-esteem	Grade - 6	386	26.23	.645	841	.519
	Grade - 7	457	26.01			
Self-esteem	Grade - 6	386	44.58	.572	841	.567
	Grade - 7	457	44.31			

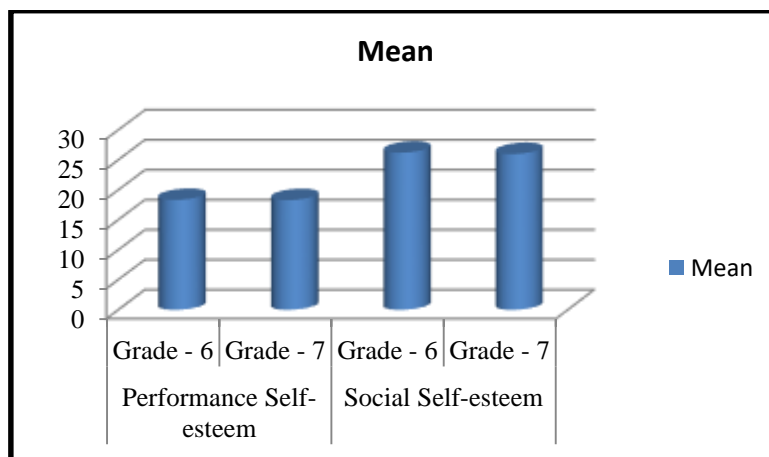


Figure 5 Mean Comparison of Self-esteem by Grade

According to table 9, the total mean score of self-esteem by grade were slightly different. It can be clearly found that there was no significant difference between Grade-6 and Grade-7 students in both performance self-esteem and social self-esteem. There was also no significant difference in the self-esteem. It can be concluded that the self-esteem of Grade-6 students may be similar in that of Grade-7 students.

Table 10 Mean Comparison of Self-esteem by Age

Variables	Age	N	Mean	<i>SD</i>
Performance Self-esteem	10-11 years	148	18.07	3.157
	12-13 years	634	18.44	2.912
	14-above	61	17.79	3.764
Social Self-esteem	10-11 years	148	26.38	5.075

	12-13 years	634	26.17	4.821
	14-above	61	24.79	5.209
Self-esteem	10-11 years	148	44.45	7.006
	12-13 years	634	44.61	6.440
	14-above	61	42.57	7.361

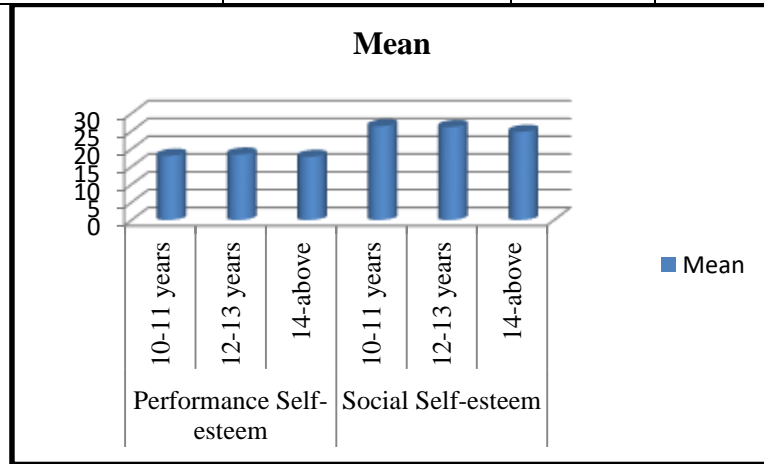


Figure 6 Mean Comparison of Self-esteem by Age

According to Table 10, the 12-13 years old students had the highest mean score and the least standard deviation in performance self-esteem. On the other hand, 10-11 years old students had the highest mean score in social self-esteem and 12-13 years old students had the lowest standard deviation. Besides, one way analysis of variance (ANOVA) was worked out so that it would clearly observe the significant differences in self-esteem. The ANOVA results were presented in Table 11.

Table 11 ANOVA Results for the Subscales of Self-esteem by Age

Variable		Sum of Squares	Df	Mean Square	F	P
Performance Self-esteem	Between Groups	35.636	2	17.818	1.948	.143
	Within Groups	7681.655	840	9.145		
	Total	7717.291	842			
Social Self-esteem	Between Groups	119.749	2	59.874	2.499	.083
	Within Groups	20128.643	840	23.963		
	Total	20248.391	842			
Self-esteem	Between Groups	230.487	2	115.224	2.636	.072
	Within Groups	36718.476	840	43.712		
	Total	36948.963	842			

According to Table 11, it was found that there was no significant difference in the self-esteem. Moreover, there were also no significant differences between performance self-esteem and social self-esteem ($p > .05$).

Table 12 Correlations between Variables of Teachers' Perception on Inter-parental Conflict and Self-esteem

Variables	CP	Threat	Selfblame	ICtotal	Per SE	Soc SE	SEtotal
CP	1	.243**	.496**	.769**	-.077*	-.219**	-.197**
Threat		1	.366**	.723**	.084*	-.130**	-.058
Selfblame			1	.628**	-.146**	-.348**	-.325**
Ictotal				1	-.038	-.302**	-.341**
Perfor					1	.359**	.723**
Social						1	.904**
Setotal							1

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

CP-conflict properties, IC-inter-parental conflict, Per SE-performance self-esteem
Soc SE-social self-esteem

According to the results of Table 12, it was found that there was significant relationship between children's perception on inter-parental conflict and children's self-esteem. The correlations are significant at the 0.001 level and at the 0.05 level. The social self-esteem scale highly correlates with self-esteem total scale ($r = .904$, $p < 0.01$). And then, the relationship between children's perception on total inter-parental conflict and performance self-esteem was low negative correlation.

Regression Analysis for Children's Perception on Inter-parental Conflict and Children's Self-esteem

Regressions were used to assess whether children's perception on inter-parental conflict significantly predicts children's self-esteem. Table 13 displayed the intercept, unstandardized regression coefficient (B), standardized regression coefficient (β) for model.

Table 13 Regression Analyses for Self-esteem and Inter-parental Conflict

Variable	B	β	t	R square	Adjusted R Square	F
Self-esteem	53.879					
Inter-parental Conflict (IC)	-.180	-.241	-7.214***	.058	.057	52.036

*** $p < .001$

The result indicated that the adjusted R Square was .057. This indicates only 5.7% of the variance in self-esteem was explained by inter-parental conflict, according to Cohen (1988). Inter-parental conflict significantly predicted self-esteem at $p < .01$. Therefore, the regression model can be defined as the following equation.

$$\text{Model Equation} \\ \text{SE} = 53.879 - .180\text{IC}$$

SE= Self-esteem

IC= Inter-parental Conflict

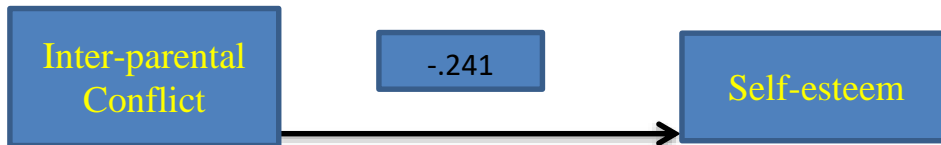


Figure 7 A Model Summary of the Results of Regression Analysis

Discussion

In this study, the independent sample t-test and one-way ANOVA were conducted. Besides, Post-Hoc test, Pearson’s Product-Moment correlation, and regression analysis were undertaken. So, this study was very useful for the researcher to adapt the instruments to be more effective.

Conclusion

In this study, according to descriptive statistics, children’s perception of inter-parental conflict was quite prominent and their self-esteem was relatively high. And then, in order to explore the difference between gender and grade, t-test was used. Based on the result, there was no significant difference in children’s perception of inter-parental conflict and self-esteem according to gender and grade. Then, one-way ANOVA was conducted in order to investigate the differences among ages. According to the result, there was also no significant difference in children’s perception of inter-parental conflict and self-esteem. And Pearson’s Product-Moment correlation was undertaken in order to find out the relationship between children’s perception of inter-parental conflict and self-esteem. The result showed that there was a significant relationship between children’s perception on inter-parental conflict and their self-esteem. The social self-esteem scale highly correlates with self-esteem total scale ($r = .904, p < 0.01$). And then, the relationship between children’s perception on total inter-parental conflict and performance self-esteem was low negative correlation. Therefore, it could be interpreted that the children would have the lower performance self-esteem if they perceive the more children’s perception on total inter-parental conflict. Simultaneous Regression was conducted to investigate the best prediction of self-esteem scores. Only 5.7% of the variance in self-esteem was explained by inter-parental conflict. And then, this study adapted the instruments which are reliable to find out the children’s perception of inter-parental conflict and children’s self-esteem in Myanmar societies.

Acknowledgements

We would like to offer respectful appreciation to Dr. Kay Thwe Hlaing, Rector of Yangon University of Education, Dr. Nyo Nyo Lwin, Dr. May Myat Thu and Dr. Khin Khin Oo, Pro-rectors of Yangon University of Education, for their encouragement, administrative support, official permission and providing facilities throughout the research. We are grateful to Dr. Khin Hnin Nwe, Professor and Head of the Department of Educational Psychology, Yangon University of Education for her careful supervision, valuable comments, encouragement and kindness to our study. Finally, we would like to acknowledge all the participants for their cooperation in data collection for this study.

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RELATIONSHIP BETWEEN SELF-DIRECTED LEARNING READINESS AND LEARNING STYLES OF SELECTED EDUCATION DEGREE COLLEGE STUDENTS

May Soe Aung¹, Yar Zar Chit²

Abstract

The main purpose of this study was to explore the relationship between the self-directed learning readiness and learning styles of education degree college students. The study adopted a descriptive research design and employed with a survey method. A total of 310 (male = 125, female = 185) students from 5 selected education degree colleges were selected as participants by using simple random sampling technique. As research instruments, Self-directed Learning Readiness Scale (SDLRS) developed by Fisher (2001) and Student Learning Style Scale (SLSS) developed by Grasha and Riechmann (1996) were used to assess self-directed learning readiness and learning styles of students. The results revealed that self-directed learning readiness of education degree college students was found to be satisfactory. In addition, significant differences were not found in self-directed learning readiness of education degree college students by their gender and college. Concerning learning styles, the results showed that the most dominant learning style of education degree college students was collaborative learning style. The results of chi-square test confirmed that there was a significant gender difference in the preferred learning styles of education college students ($\chi^2 = 21.163, p < 0.01$). It was also stated that there was a significant difference on the learning styles of students relating to their education colleges ($\chi^2 = 42.093, p < 0.01$). Finally, the association between the level of self-directed learning readiness and learning styles of education college students was confirmed by conducting a chi-square test ($\chi^2 = 52.53, p < 0.001$). Therefore, this study can provide some innovative ideas to the teachers and educators in developing the self-directed learning readiness and excellent learning styles of students as well as it provides the valuable suggestions and directions for their more effective teaching-learning processes.

Keywords: Self-directed Learning, Readiness, Learning Styles

Introduction

Education is one of the effective tools that help nations achieve their aims. The educators should do their best to bring up effective, productive, prospective, and qualified manpower. To improve education system, all citizens must try the best as much as possible. The teachers' role is also important for improving the education system and it is important for the teachers and prospective teachers to understand the nature of learning such as how learning takes place; how individual learns; which factors influence the learning process; and which factors effects academic achievement.

According to Karban (2015), learning is the process of acquiring new understanding, knowledge, behaviors, skills, values, attitudes, and preferences. Learning takes place when students interact with others and with environment by observing, taking, listening, discussing, writing and relating their own ideas and experiences with others. Over the past years, extensive research programs have been developed which investigate learning as it occurs in the context of higher education, using qualitative and quantitative research methods.

The importance of self-directed learning has been discussed over four decades. In 1975, Knowles predicted self-directed learning as a means of survival for individuals and the human race living in a new world. Several decades later, Guglielmino (2008) described self-directed learning

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as an effective mode of learning for individuals to possess in the information age since it encompasses the capacity to cope with constant changes.

Apart from its importance for survival and competition in general, self-directed learning readiness is also viewed as an effective mode of learning for college students in particular since college learning requires that learners be self-directed. College students need to be active in their own learning and able to conduct such learning at any time and any place (Cohen, 2012). Specifically, students in colleges of education, who will likely become teachers, need to possess the readiness for self-directed learning since knowledge in the field is constantly changing.

Like the readiness for self-directed learning, learners differ in their preferences to certain learning styles. It will be important for teachers to examine the variations in their students on the features of their learning styles because the information about learner's preference can help teachers become more sensitive to differences students bring to the classroom (Felder & Spurlin, 2005). In other words, the learning styles may have different effects on the student's academic achievement and thus, it is important for educational psychologists to know how learning styles influence pupils' academic achievement, and from there, to design possible means of intervention for promoting effective learning and academic achievement.

By investigating the self-directed learning readiness and learning style of students from education degree college, it will be helpful for students to identify and differentiate their own readiness for self-directed learning and their preferred learning style. Additionally, the findings in the present study will shed light on the current circumstances of students' self-directed learning readiness in education degree colleges in Myanmar. These findings will be able to add to the knowledge base of teacher educators and curriculum designers.

Purpose of the Study

The main aim of the study is to investigate the relationship between self-directed learning readiness and learning styles of education degree college students. The specific objectives are as follows:

- (1) To explore the state of self-directed learning readiness among education degree college students.
- (2) To inspect whether there is a significant difference in self-directed learning readiness of education degree college students by gender and college.
- (3) To find out the different learning styles of education degree college students,
- (4) To inspect whether there is a significant difference in learning styles of education degree college students by gender and college.
- (5) To examine whether there is an association between self-directed learning readiness and learning styles of education degree college students.

Definition of Key Terms

Self-directed Learning. Self-directed learning is learning that involves the learner taking primary responsibility for planning, implementing, and evaluating learning as well as accepting responsibility for one's thoughts and actions as a learner (Brockett & Hiemstra, 1991).

Self-directed Learning Readiness. Readiness in self-directed learning is the extent to which individuals perceive themselves to possess skills and attitudes frequently associated with self-directedness in learning (Brockett & Hiemstra, 1991).

Learning Style. Learning style is a stable and consistent mode of behaviour acquired by an individual, whenever he is engaged in learning activity (Rosalind, 2001).

Review of Related Literature

Self-directed Learning Readiness

There are several researchers who claimed that students need readiness in order to initiate and engage in self-directed learning. According to Merriam, et.al, (2007), readiness for self-directed learning includes self-discipline, autonomy, effective organization, effective communication, acceptance of constructive feedback, engagement in self-reflection, and self-evaluation. Self-directed learning (SDL) requires various skills and attitudes to ensure successful independent study. Therefore, students have to analyze their current situations, support networks, study habits, and family situations (Caffarella, 2006).

According to Fisher, King, & Tague (2001), the notion of self-directed learning readiness examines the degree at which the self-directed learner takes personal control and acknowledges the freedom that is associated with learning what the individual considers important. The degree of control is dependent on the learner's personality characteristics, attitudes, and abilities. Hence, self-directed learning readiness is considered to be highly individualized and representative along the continuum.

Learning Style

As stated by numerous researchers, the term "learning style" has been defined differently by different people. For some, it is congruent with cognitive style, and for others it denotes preferred approaches to learning based on modality strengths (Nel, 2008). Lawrence (1984) stated that the term learning style is used to incorporate four aspects of the person which include, cognitive style, patterns of attitudes and interests that affect an individual's focal point in a learning situation, a tendency to pursue situations attuned to one's own learning patterns, and an inclination to use certain learning strategies and evade others.

As individuals vary in their habit and views in certain conditions, so do their learning styles. It is realized that learning processes vary from person to person. Individuals do not learn in the same way. Each individual will adopt an approach to learning, with which they are most comfortable and in doing so leave behind the approaches which they are less comfortable. In addition, there may be several factors influencing on the student's learning style preference.

Design and Procedure

Sampling. The participants of this study were second year students who enrolled in Mandalay Education Degree College, Sagaing Education Degree College, Myitkyina Education Degree College, Kyine Tone Education Degree College, and Taunggyi Education Degree College during 2021-22 AY. A total of 310 students (125 males, 185 females) participated in this study. Simple random sampling technique was used to select the sample.

Research Method. The design and method used in this study were quantitative research design and descriptive survey method.

Self-directed Learning Readiness Scale (SDLRS). The key instrument used to explore the students' level of self-directed learning readiness was Self-directed Learning Readiness Scale (SDLRS) developed by Fisher (2001). This instrument involves three subscales with a total of 40

items and it is a 5-point Likert scale. The internal consistency for overall scale of SDLRS was 0.911.

Student Learning Style Scale (SLSS). The key instrument used to examine learning styles of education degree college students was the Student Learning Style Scale (SLSS), developed by Grasha and Riechmann (1996). It contains 60 items and it is a 5-point Likert scale. Six types of learning styles such as avoidant style, participative style, collaborative style, dependent style, independent style, and competitive style are included as subscales. The internal consistency for overall scale of SLSS was 0.825.

Data Collection. With the permission of administrative personal of selected education degree colleges, two questionnaires were administered to students in September, 2021. The participant students were also explained the purpose of the study and the importance of their participation as well as the assurance of confidentiality of their responses which would be used only for this research purpose. Then, the questionnaires were distributed and the participants were asked to complete all items in the questionnaires. On average, the participants spent about thirty minutes to complete all items. Then, all of the participants' responses were gathered.

Data Analysis and Findings

Self-directed Learning Readiness of Education Degree College Students

In terms of descriptive statistics, means and standard deviations of self-directed learning readiness were presented in Table 1.

Table 1 Descriptive Statistics of Self-directed Learning Readiness

Variable	N	Minimum	Maximum	Mean	Mean%	SD
Self-control	310	43	74	61.76	82.35%	5.09
Self-management	310	35	65	53.39	82.14%	5.49
Desire for Learning	310	34	56	47.64	79.4%	4.09
Self-directed Learning Readiness Total	310	112	195	162.79	81.39%	12.99

As shown in Table 1, the mean and standard deviation of self-directed learning readiness of education college students were 162.79 and 12.99. Since the sample mean (162.79) is greater than the theoretical mean (120) in overall self-directed learning readiness, it can be assumed that the self-directed learning readiness of education college students was satisfactory.

Concerning to the three subscales, the mean percentage of education college students' self-control was found to be highest (82.35%) and that of students' desire for learning was the lowest (79.4%). Thus, it can be concluded that education college students possessed high personal expectations and standards, high awareness to their own limitations and good responsibility and control over their own performance and learning process.

In order to examine whether there is a gender-related difference in the self-directed learning readiness of education college students, independent samples *t* test was conducted and the results were illustrated in Table 2.

Table 2 Independent Samples *t* test Results of Self-directed Learning Readiness by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
Self-directed Learning Readiness Total	Male	125	162.82	14.81	3.146	.077
	Female	185	162.77	11.64		

According to Table 2, although a slight difference in the mean scores exists between male and female participants, the result of independent samples *t* test indicated that there was no significant difference between male and female students in total self-directed learning readiness. Thus, it can reasonably be concluded that gender related difference was not found in self-directed learning readiness of education degree college students.

Then, in order to investigate the difference in self-directed learning readiness of education college students by college, descriptive statistics was firstly used. The results were shown in Table 3.

Table 3 Descriptive Statistics of Self-directed Learning Readiness of Students by College

Variable	College	N	Mean	SD
Self-directed Learning Readiness	College 1	67	161.31	15.49
	College 2	43	163.63	12.95
	College 3	80	163.99	10.81
	College 4	69	163.22	11.34
	College 5	51	161.59	14.76

Regarding the education degree college, the mean scores of participants from College 1 was lowest (161.31) and those of participants from College 3 was the highest (163.99) among five education degree colleges (see Table 3). In order to investigate whether these differences were statistically significant or not, one-way ANOVA was calculated and the results were shown in Table 4.

Table 4 ANOVA Result of Self-directed Learning Readiness of Students by College

Variable	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	
Self-directed Learning Readiness	Between Group	377.243	4	94.311	.556	.695
	Within Group	51737.544	305	169.631		
	Total	52114.787	309			

As it can be seen in Table 4, the obtained value $F(4, 305) = 0.556$ ($p > 0.05$) for self-directed learning readiness was not significantly different according to colleges. In other words, it intended that self-directed learning readiness of students did not differ by their education degree colleges.

Learning Styles of Education Degree College Students

The frequency and percentage of education college students related to their respective learning styles were shown in Table 5.

Table 5 Frequency and Percentage Distribution of Education College Students in Different Learning Styles

Learning Style	Frequency	Percentage
Independent	21	6.8 %
Avoidant	4	1.3 %
Collaborative	142	45.8 %
Dependent	29	9.4 %
Competitive	4	1.3 %
Participative	110	35.5 %

According to Table 5, it was clearly observed that the learning style of most education college students was found to be collaborative (45.8%). Thus, it can be interpreted that most students in this study preferred to share their ideas and opinions with each other, discuss in small groups rather than individual projects, work with others, and also interact with their teachers.

It can also be found out that the percentage of students having participative learning styles was the second largest (35.5%) among the others and therefore, it can be assumed that many education college students were eager to actively participate in the class activities and they also preferred active learning including discussions and presentations to the traditional teacher-centered approaches.

On the other hand, the percentage of students was found to be lowest (1.3%) under the avoidant and competitive learning styles. It can be concluded that there were very few students in education colleges who were either uninterested in learning content and attending classes or with the aim of having better performance than the other students in the classroom.

These must be due to the fact that the curriculum of education degree colleges placed the emphasis on the learner-centered activities and thus, it provided special opportunity for the students to become the collaborative learners.

Then, a Pearson chi-square test was conducted to address whether there was the relationship between the gender and their preferred learning style. Since 80% of the expected frequencies were above 5 and there were not less than 1, Pearson chi-square test was used. The results were presented in the following Table 6.

Table 6 Chi-square Test Result of Learning Styles of Education College Students by Gender

Learning Style	Male		Female		Chi-square	p
	N	%	N	%		
Independent	12	3.9%	9	2.9%	21.163**	0.001
Avoidant	4	1.3%	0	0%		
Collaborative	49	15.8%	93	30%		
Dependent	19	6.1%	10	3.2%		
Competitive	0	0%	4	1.3%		
Participative	41	13.2%	69	22.3%		

Note. ** $p < 0.01$, Cramer's $V = 0.261$

As it can be seen in Table 6, there was a significant gender difference in the preferred learning styles of education college students, $\chi^2 (5, N = 310) = 21.163, p < 0.01$. Thus, it can be concluded that there was a significant relationship between the gender and their learning style preference. Moreover, since Cramer's V for this association is 0.261, the effect size can be considered to be moderate.

Next, a Pearson chi-square test was conducted again to observe whether there was a significant difference in the learning styles of participant students related to their education colleges. Since 80% of the expected frequencies were above 5 and there were not less than 1, Pearson chi-square test was used. The results were presented in the following Table 7.

Table 7 Chi-square Test Result of Learning Styles of Students by College

	Independent	Avoidant	Collaborative	Dependent	Competitive	Participative	Chi-square	p
College 1	10	3	21	14	1	18	42.093**	0.004
	3.2%	1%	6.8%	4.5%	0.3%	5.8%		
College 2	1	0	25	1	0	16		
	0.3%	0%	8%	0.3%	0%	5.2%		
College 3	3	0	41	5	1	30		
	1%	0%	13.2%	1.6%	0.3%	9.7%		
College 4	2	0	35	4	1	27		
	0.6%	0%	11.3%	1.3%	0.3%	8.7%		
College 5	5	1	20	5	1	19		
	1.6%	0.3%	6.5%	1.6%	0.3%	6.1%		

Note. ** $p < 0.01$, Cramer's $V = 0.183$

From the results of chi-square test, it can clearly be observed that there was a significant relationship between the learning styles of students and education colleges, $\chi^2 (20, N = 310) = 42.093$ at 0.01 level (see Table 7). Therefore, it can be interpreted that College 3 possessed the greater percentage of students having either of the collaborative and participative learning styles than the other four education colleges.

Cramer's V which indicates the strength of association between two variables is 0.183 and thus the effect size is considered to be typical according to Cohen (1988). Thus, it can be concluded that although the result is statistically significant, the learning styles of education college students and their attending colleges are only weakly associated.

Association between Self-directed Learning Readiness and Learning Styles

In order to explore the association between the self-directed learning readiness and learning styles of education college students, the level of self-directed learning readiness for participant students were assigned first. Therefore, the students in this study were classified into three groups such as high, moderate and low. Based on the descriptive statistics of self-directed learning readiness as already stated in Table 1, the mean and standard deviation were 162.79 and 12.99.

Hence, students with scores above (+1) standard deviation from sample mean were identified as the high group and students with scores below (- 1) standard deviation from sample mean were considered as the low group. The rest of students whose scores were between (+1) and (- 1) standard deviation were considered to be moderate group. Then, 17.7% of participant students were fallen in high group, 69.4% were in moderate group, and 12.4% were in the low group of self-directed learning readiness. The frequency and percentage of students in different level groups were shown in Table 8.

Table 8 Frequency and Percentage of Education College Students in Different Levels of Self-directed Learning Readiness

Levels of Self-directed Learning Readiness	Frequency	Percentage
High	55	18 %
Moderate	215	69 %
Low	40	13 %

To enable the investigation of the association between the level of self-directed learning readiness and learning styles of education college students, a Pearson chi-square test was conducted. Since 80% of the expected frequencies were above 5 and there were not less than 1, Pearson chi-square test was used. The results were presented in the following Table 9.

Table 9 Association between Self-directed Learning Readiness and Learning Styles

		Independent	Avoidant	Collaborative	Dependent	Competitive	Participative	Chi-square	p
High	N	7	0	25	2	0	21	52.53***	0.000
	%	2.3%	0.0%	8.1%	0.6%	0.0%	6.8%		
Moderate	N	6	0	102	25	4	78		
	%	1.9%	0.0%	32.9%	8.1%	1.3%	25.2%		
Low	N	8	4	15	2	0	11		
	%	2.6%	1.3%	4.8%	0.6%	0.0%	3.5%		

Note. ***p < 0.001, Cramer’s V = 0.261

Based on the results of chi-square test, it can be observed that there was a significant relationship between the level of self-directed learning readiness and learning styles of education college students, $\chi^2 (10, N = 310) = 52.53$ at 0.001 level. Moreover, since Cramer’s V for this association is 0.261, the effect size can be considered to be typical. In other words, the level of self-directed learning readiness and learning style of education college students are moderately associated with each other. Therefore, it can be concluded that the association between the level of self-directed learning readiness and learning styles of education college students was clear.

Discussions

As conceded by Tudor (1996), students play active and participatory roles in the learning process while teachers act as facilitators to motivate learners and help them acquire strategies needed for self-directed learning. It is within this changing of perspective on the roles of teachers and learners that the concept of self-directed learning (SDL) began to gain popularity.

Moreover, Kolb (1984) suggested that a high degree of self-directedness may be linked to particular learning styles. Kolb theorized that learners integrate their preferred style of learning to produce a high level of self-direction. Successful self-directed learners are flexible and adaptable and are able to choose across learning styles, utilizing the one that best meets the demands of a particular learning project and/or learning.

From the findings of this study, it provided an implication for curriculum designers and material developers to incorporate self-directed learning approaches to syllabi, textbooks, tasks and activities to help the dependent learners to find a starting point to grasp autonomous and self-directed learning. In addition, collaboration between students such as giving and receiving peer feedback can be a crucial aspect of interaction that facilitates the development of self-directed learning.

In some educational institutions, self-directed learning can be encouraged through open-learning programs, individualized study options, non-traditional courses and other innovative programs (Esterhuizen, 2007). Hence, it is recommended to implement such incorporation of innovative methods in Myanmar Education Degree Colleges for the students to become more self-directed in their learning situations.

Furthermore, by making students aware of their specific learning style, teachers can encourage them to realize the importance of appropriate learning styles for different disciplines or subjects and that such styles may hopefully be changed to suit changing learning situations (Fatt, 2000). Therefore, it is recommended to the students to become aware of their preferred learning styles.

Moreover, the findings of this study asserted that the education degree college students had a common preference in their styles of learning. Specifically, the majority of education degree college students were found to have collaborative learning style. Due to the fact that students respond better to instructional methods that match their learning style, integrating different learning styles in the classroom environment can enhance the benefits for everyone (Kahtz & Kling, 1999). Therefore, a suggestion would be provided to the teachers that they should try to know their students' learning styles so as to deliver their teaching more effectively and efficiently.

Conclusion

Since this study spotlighted the current situations of students' self-directed learning readiness and learning styles in education degree colleges of Myanmar, the findings of this study can be used as the knowledge base for teacher educators and curriculum designers. This study could be beneficial to the students in order to become aware of their own readiness for self-directed learning and their preferred learning style. Additionally, the findings of this study could also help teachers (trainers) by reminding them to adopt teaching methods that meet the learning styles of their students. Therefore, this study could hopefully help to improve the teaching-learning processes of education college students and teachers in Myanmar to some extent.

Acknowledgements

We would like to express our sincere appreciation and gratitude to those who support and encourage for this study. Firstly, we would like to pay our gratitude to Dr. Myat Myat Thaw, Pro-rector of Sagaing University of Education for encouragement, administrative supports, official permission, and providing facilities throughout the research. Secondly, we would like to expand our sincere thankfulness to Dr. Myo Ko Aung (Professor and Head of Department of Educational Psychology, Sagaing University of Education) for his invaluable suggestions, caring attitude and emotional support throughout the process. Besides, we would like to thank the principals and teacher educators for their permission to conduct this study. Last, we would like to pay special thanks to student teachers from Education Degree Colleges for their active participation and cooperation in the vital role of data collection.

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THE RELATIONSHIP BETWEEN GRATITUDE, FORGIVENESS AND SUBJECTIVE WELL-BEING OF STUDENT TEACHERS FROM UNIVERSITIES OF EDUCATION IN MYANMAR

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Abstract

The main purpose of this study was to investigate the relationship among gratitude, forgiveness and subjective well-being of the student teachers from Universities of Education in Myanmar. The study conducted a survey research design and employed with a quantitative method. As the research instruments, gratitude questionnaire adapted by Bernabé-Valero et al., (2014), forgiveness scale developed by Thompson et al., (2005) and the Subjective well-being Inventory (Nagpal & Sell, 1992) modified by Sukhmeet and Rakesh, (2019) were applied. A total of 1200 student teachers (600 males and 600 females) were randomly selected from Universities of Education in Myanmar. The Pearson product-moment correlation results revealed that positively significant relationship ($r=0.413$, $p<0.01$) was found between gratitude and subjective well-being and positively significant relationship ($r=0.331$, $p<0.001$) was found between forgiveness and subjective well-being. The results of this study revealed that student teachers who have high gratitude and good forgiveness may experience better subjective well-being level. Moreover, forgiveness effected as the mediation role on the relationship between gratitude and subjective well-being. Finally, this study suggested that the student teachers should try to improve gratitude and forgiveness for better level of subjective well-being. Therefore, it was vital to emphasize the student teachers' gratitude, forgiveness and subjective well-being.

Keywords: gratitude, forgiveness, Subjective Well-being, Student teacher

Introduction

Today, modern education demands the students not only to be productive citizens but also to have good characteristics and sense of subjective well-being. Consequently, the most important function of modern education is to help the individuals to develop from the aspects of physical, social, sexual and psychological ways and to assist them as being raised effectively as harmonious with society, happy and productive individual.

To accomplish this function, according to Professor Dr. Khin Zaw (2001), the aims of education should be summarized under three aspects, (1) to help the child to develop his personality, (2) to help the child to relate himself to the society in which he lives, and (3) to help those who are growing up to be active and creative forces in society.

The most important actors in achieving the school objectives are teachers (Hattie, 2003). No education system is better than its teachers. Goodness of an education program was determined to a large extent by the teacher. The quality of education and the standards of achievement are inseparably interrelated with the quality of teachers.

Therefore, these interrelations provided clear evidence that subjective well-being is linked to many desirable outcomes that are also highly relevant for the education system and the teaching profession. According to general and specific objectives, increasing subjective well-being of teachers should contribute to improving their quality of health and have a positive impact on the teaching-learning processes in schools.

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To maximize subjective well-being, it is first necessary to identify its key drivers. Among these factors, gratitude and forgiveness will be examined in this study as the related factors which can strengthen the subjective well-being of student teachers.

Purposes of the Study

The main purpose of the study was to investigate the student teacher's gratitude, forgiveness and subjective well-being of Universities of education in Myanmar.

The specific objectives of the study were

- to examine the relationship between student teacher's gratitude and subjective well-being
- to find out the relationship between student teacher's forgiveness and subjective well-being
- to explore the relationship between student teacher's gratitude and forgiveness
- to examine the relationship among gratitude, forgiveness and subjective well-being and
- to investigate the mediation effect of forgiveness on relationship between gratitude and subjective well-being.

Definitions of Key Terms

Gratitude. Gratitude is emotion, a moral virtue, a habit, a personality trait or a coping response. It is a pleasant state and is linked with positive emotions, including contentment, happiness, pride and hope (McCullough, Emmons and Tsang; 2002).

Forgiveness. Forgiveness is an individual's condition to be more receptive to what has happened in his or her life, refrain from anger and make him or her feel better as well as leave the burden that might interfere and improve relationships and subjective well-being (Emmons & Larsen, 2002).

Subjective well-being. Subjective well-being refers to how people evaluate their lives and includes variables such as life satisfaction, environmental mastery, and lack of depression, anxiety and positive moods (Nagpal, & Sell, 1992).

Student teacher. Student teacher means any person who is engaged in a course of study at a college or university in the field of education and as a part of that course of study, teaches a class of students under the supervision of a certified teacher (Taylor, Borys & Larocque; 1992).

Review of Related Literature

Feeling grateful and forgiveness are like other positive emotions that help build a person's enduring personal resources and broaden an individual's thinking. They describe various ways by which gratitude and forgiveness can transform individuals, organization, and communities in positive and sustaining ways. Fredrickson supported that the specific benefits of gratitude and forgiveness including personal and social development, community strength and individual health and well-being (Fredrickson, 2011).

Gratitude is the positive emotion that a focal person experiences when another person has made and attempt to give, or purposefully given, the focal person something of value (Bartlett & De-Steno, 2006). Individuals who tend to experience gratitude and who attribute their happiness to an external source are considered to have dispositional gratitude. Dispositional gratitude is defined as a generalized tendency to recognize and respond with grateful emotion to the roles of other people's benevolence in the positive experiences and outcomes that one obtains (McCullough

et al., 2002). Based upon the broaden-and-build theory, dispositional gratitude plays a strong and positive role in the organizational setting by leading to other positive emotions outcomes.

In broaden- and- build theory, gratitude promotes the well-being of other people (including the benefactor) through creative actions (Fredrickson, 2004). By thinking about ways to help others, grateful individuals broaden their mindsets and think more creatively. Over time gratitude may create and support social bonds with their respective environments. Gratitude not only strengthens individual relationships but may also lead to helping in the broader community (Fredrickson, 2004). This is because when individuals feel that they cannot completely reciprocate with a benefactor, their gratitude broadens to help others in community. Therefore, grateful individuals will creatively endeavor to give back to their organization by working hard, performing well and helping others. Moreover, grateful individuals may also experience prosocial motivation and feel more satisfied with their life in general (Fredrickson, 2001) forgiveness has many benefits, as research shows that individuals forgive more happier and healthier than those who have less forgiveness. The forgiveness disposition is related to positive affectivity, subjective well-being, life satisfaction, optimism and happiness (McCullough et al., 2002).

Previous researches proved that gratitude and forgiveness have psychological benefits, they reduce anger and grief (Coyle & Enright, 1997); and decrease anxiety and depression (Freeman & Enright, 1996; Reed & Enright, 2006; Rye & Pargament, 2002). Many researchers also examined that gratitude and forgiveness improve mental health (Berry & Worthington, 2001; Watkins, Woodward, Stone, & Kolts, (2003); Wilson, Milosevic, Carroll, Hart & Hibbard, 2008); life satisfaction (Harris & Thoresen, 2005), as well as self-esteem, subjective well-being, empathy and friendliness (Berry, Worthington, 2001; McCullough et al., 2001).

Method

Research Design: The quantitative research design and survey method were used in this study.

Participants: The sample for this research selected 1200 student teachers (male= 600, female = 600) by using simple random sampling method. Student teachers in first year, second year, third year, and fourth year from Universities of Education in Myanmar were as participants of the study.

Instruments: In this study, the research instruments were the gratitude questionnaire was adapted by Bernabé-Valero et al., (2014), forgiveness scale developed by Thompson et al., 2005) and the Subjective Well-being Inventory (SUBI) modified by Sukhmeet and Rakesh, (2019). The gratitude questionnaire (G20) includes 20 items and it is kind of tendency to gratitude. It has four subscales; interpersonal gratitude, gratitude in the face of suffering, recognition of gift and expression of gratitude. The forgiveness scale involved 19 items and it has three sub-scales; forgiveness to one-self, forgiveness to other person and forgiveness to situation. The Subjective well-being Inventory was developed by Nagpal and Sell, (1992) and was modified by Sukhmeet and Rakesh, (2019). The SUBI includes 40 items and it is kind of self-report measure. By using these questionnaires, the researcher examined the relationship between gratitude, forgiveness and subjective well-being of student teachers of Universities of Education in Myanmar.

Research Findings

After preparing the instruments for the research and collecting the data with these instruments, the assessment for the gratitude, forgiveness and subjective well-being of student teachers from Universities of Education was conducted. The resulted data was assessed by using

descriptive statistics. In addition, the differences between gender, and Universities of Education were analyzed by using independent sample *t*-test and one-way analysis of variance (ANOVA). Finally, the correlation among the gratitude, forgiveness and subjective well-being of student teachers was determined by applying Pearson Product-Moment Correlation. By using the statistical analyses, correlational findings and results were discussed in the following.

The Relationship Between Student Teachers' Gratitude and Subjective Well-being

To explore the relationship between Student Teachers' Gratitude and Subjective Well-being, Pearson Product- Moment Correlation Coefficient was calculated. The result was shown in Table 1.

Table 1 Relationship between Gratitude and Subjective Well-being of Student Teachers

Variables	Gratitude	Subjective Well-being
Gratitude	-	0.413**
Subjective Well-being	0.413**	-

Note** The correlation is significant at the 0.01 Level.

According to the Table1, it was revealed that gratitude was significantly and positively correlated with subjective well-being ($r=.413, p=.000$). This finding indicated that gratitude of student teachers had a moderate positive association with their subjective well-being. It can be assumed that the higher the gratitude the student teachers had, the better they had subjective well-being.

This result was consistent with Froh, Yurkewicz, and Kashdan; (2008) on the relationship between gratitude and subjective well-being of student teachers with a sample of 1000 university students. They revealed that a significant positive correlation between gratitude and subjective well-being.

And then, inter- correlation between the two variables was conducted to examine whether the subscales of gratitude and subjective well-being were related (Table 2).

Table 2 Inter-Correlation Between Subscales of Student Teachers' Gratitude and Subjective Well-being

Variables	IG	GF	RG	EG	Subjective Well-being
IG	-	.351***	.245***	.337***	.331***
GF		-	.151***	.148***	.289***
RG			-	.245***	.232***
EG				-	.071
SWB					-

Note*** The correlation is significant at 0.001 level.

- IG** = Interpersonal gratitude
- GF** =Gratitude in the face of suffering
- RG** = Recognition of gifts
- EG** = Expression of gratitude
- SWB** = Subjective Well-being

Table 2 revealed that the subscales of gratitude and overall subjective well-being were significantly and positively correlated. The result of bivariate correlation showed that Interpersonal gratitude, Gratitude in the face of suffering and Recognition of gifts subscales were significantly and positively correlated with subjective well-being at 0.001 level.

Regression Analysis for Prediction of Overall Gratitude and Subjective Well-being

A simple linear regression was calculated to investigate how well Gratitude predicts Subjective Well-being. The predicting power of Gratitude on Subjective Well-being can be observed in Table 3.

Table 3 Predicting Power of Gratitude on Subjective well-being

Variables	B	β	t	P	R	R ²	Adj R ²	F
Constant	21.763							
Gratitude (GQ)	.436	.237	23.002***	.000	.336	.112	.216	547.124

Note***The prediction is significant at 0.001 level.

According to Table 3, the result of simple linear regression pointed out that the Gratitude made a significant predictive contribution to Subjective Well-being. Regression analysis also showed that the model is significantly a good fit for the data according to the p value (F= 547.124, p=.000). The Adjusted R² value was .216. This proved that Gratitude contributed 22% of the variance in Subjective Well-being. According to Cohen (1988), this is a medium affect.

By the result of simple linear Regression, the model for Subjective Well-being can be defined as the following equation.

$$SWB = 21.763 + .436 GQ$$

Where, SWB= Subjective Well-being, GQ=Gratitude

It can be predicted that Subjective Well-being of student teachers will increase 0.436 units for the increase in one unit of Gratitude. Based on the result of simple linear regression analysis, the model for the Gratitude on the overall Subjective Well-being was developed. It can be clearly seen in Figure 1.

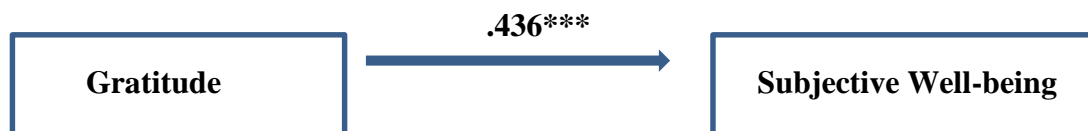


Figure 1 Model of Gratitude and Subjective Well-being

Regression Analysis for Prediction of Gratitude Subscales on Overall Subjective Well-Being

Next, the multiple linear regression analysis was calculated to investigate how well gratitude sub-scales predict Subjective Well-being. The predicting power of gratitude sub-scales on Subjective Well-being can be observed in Table 4.

Table 4 The Multiple Linear Regression Analysis Summary for Subscales of Gratitude on Subjective Well-being

Variables	<i>B</i>	β	<i>t</i>	<i>P</i>	<i>R</i>	<i>R</i> ²	<i>Adj R</i> ²	<i>F</i>
Constant	21.508		3.321***	.000				
IG	0.331	.319	3.028***	.000	.471	.221	.237	42.378
GF	0.351	0.250	2.465***	.000				
RG	0.245	0.316	2.966***	.000				
EG	0.017	0.247	0.057	.145				

Note***The prediction is significant at 0.001 level.

It was found that student teachers’ Gratitude in the face of suffering, Recognition of gifts, and Expression of gratitude of Gratitude subscales were significantly predicted with their overall Subjective Well-being. Therefore, the model can be defined as the following equation:

$$SWB = 21.508 + .331 IG + 0.351 GF + 0.245 RG + 0.017 EG$$

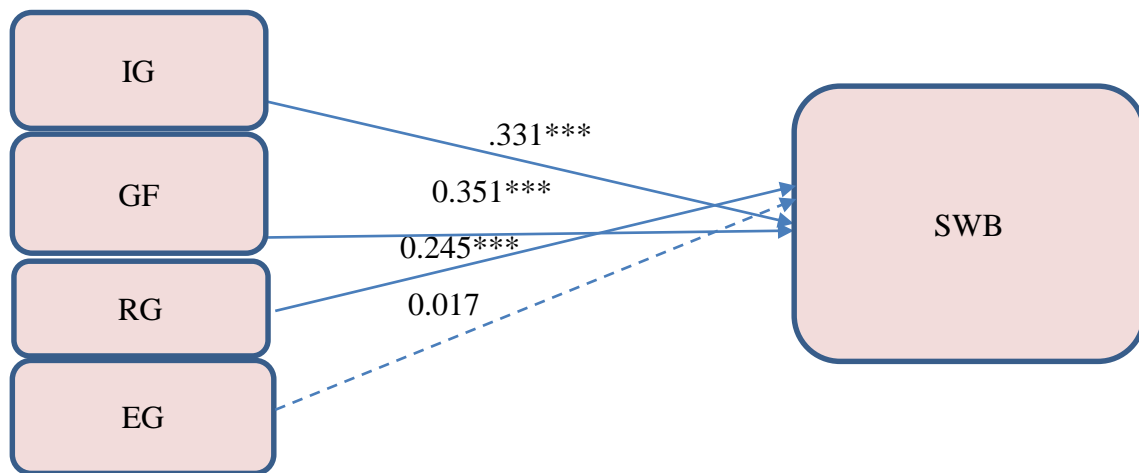
Where, IG= Interpersonal Gratitude

GF=Gratitude in the face of suffering

RG=Recognition of gifts

EG=Expression of gratitude

The multiple Regression Analysis results in Table 4 pointed out that three subscales of Gratitude made a significant predictive contribution to Subjective Well-being, ($F=42.378, P=.000$) and explain for contribution 23.7% of the variance in Subjective Well-being.



Note: *** $p < 0.001$

Figure 2 Predictive Model of Gratitude on Subjective Well-being of Student Teachers

Then, the relationship between forgiveness and subjective well-being was examined by using Pearson Product-Moment Correlation.

The Relationship between Student teachers’ Forgiveness and Subjective Well-being

To explore the Relationship between Student teachers’ Forgiveness and Subjective Well-being, Pearson Product- Moment Correlation Coefficient was calculated. The result was shown in Table 5.

Table 5 Correlation between Forgiveness and Subjective Well-being of Student teachers

Variables	Forgiveness	Subjective Well-being
Forgiveness	-	0.331**
Subjective Well-being	0.331**	-

Note** The correlation is significant at the 0.01 Level.

According to the Table 5, it was revealed that forgiveness was significantly and positively correlated with subjective well-being ($r=.331, p=.000$). This finding indicated that forgiveness of student teachers had a moderate positive association with their subjective well-being. It can be assumed that the higher the forgiveness the student teachers, the better their subjective well-being.

This result was consistent with Macnulty, (2007) on the relationship between forgiveness and subjective well-being of medical students in his international dissertation. He proved a significant positive correlation between forgiveness and subjective well-being.

Next, inter- correlation between the two variables was conducted to examine whether the subscales of forgiveness and subjective well-being were related (Table 6)

Table 6 Inter-Correlation Between Subscales of Student Teachers’ Forgiveness and Subjective Well-being

Variables	FS	FO	FOS	Subjective Well-being
FS	-	.278**	.383**	.372**
FO		-	.248**	.398**
FOS			-	.270**
SWB				-

Note*** The correlation is significant at 0.01 level.

FS = Forgiveness of Self

FO = Forgiveness to Other- person

FOS = Forgiveness of Situation

Table 6 revealed that the subscales of forgiveness and overall subjective well-being were significantly and positively correlated. The result of bivariate correlation showed that forgiveness of self, forgiveness to other person and forgiveness to situation of forgiveness subscales were significantly and positively correlated with subjective well-being at 0.01 level.

Regression Analysis for Prediction of Overall Forgiveness on Subjective Well-being

A simple linear regression was calculated to investigate how well Forgiveness predicts Subjective Well-being. The predicting power of Forgiveness on Subjective Well-being can be observed in Table 7.

Table 7 Predicting Power of Forgiveness on Subjective Well-being

Variables	<i>B</i>	β	<i>t</i>	<i>P</i>	<i>R</i>	<i>R</i> ²	<i>Adj R</i> ²	<i>F</i>
Constant	34.763							
Forgiveness (FG)	.331	.392	33.002***	.000	.292	.321	.311	497.124

Note*** The prediction is significant at 0.001 level.

According to Table 7, the result of simple linear regression pointed out that the Forgiveness made a significant predictive contribution to Subjective Well-being. Regression analysis also showed that the model is significantly a good fit for the data according to the *p* value ($F= 497.124, p=.000$). The Adjusted R^2 value was .311. This proved that Forgiveness contributed 31% of the variance in Subjective Well-being. Cohen (1988) suggested that, this is a medium affect.

By the result of simple linear Regression, the model for Subjective Well-being can be defined as the following equation.

$$SWB= 34.763+.331FG$$

Where, SWB= Subjective Well-being, FG=Forgiveness

It can be predicted that Subjective Well-being of student teachers will increase 0.511 units for the increase in one unit of Forgiveness. Based on the result of simple linear regression analysis, the model for the Forgiveness on the overall Subjective Well-being was developed. It can be clearly seen in Figure 3

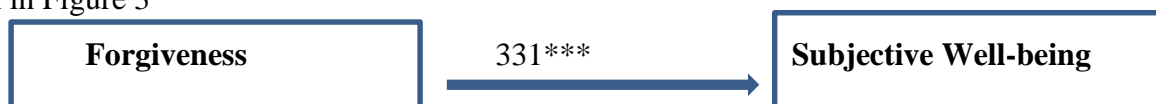


Figure 3 Model of Forgiveness and Subjective Well-being

Regression Analysis for Prediction of Forgiveness Subscales on Overall Subjective Well-Being

Table 8 The Multiple Linear Regression Analysis Summary for Subscales of Forgiveness on Subjective Well-being

Variables	<i>B</i>	β	<i>t</i>	<i>P</i>	<i>R</i>	R^2	<i>Adj R</i> ²	<i>F</i>
Constant	22.601		12.324***	.000	.372	.320	.322	45.361
FS	0.310	.380	6.528***	.000				
FO	0.213	.330	10.999***	.000				
FOS	0.125	.206	10.089***	.000				

Note*** The prediction is significant at 0.001 level.

It was found that student teachers’ Forgiveness of Self, Forgiveness to Other person and Forgiveness to Situation of Forgiveness subscales were significantly predicted with their overall Subjective Well-being. Therefore, the model can be defined as the following equation:

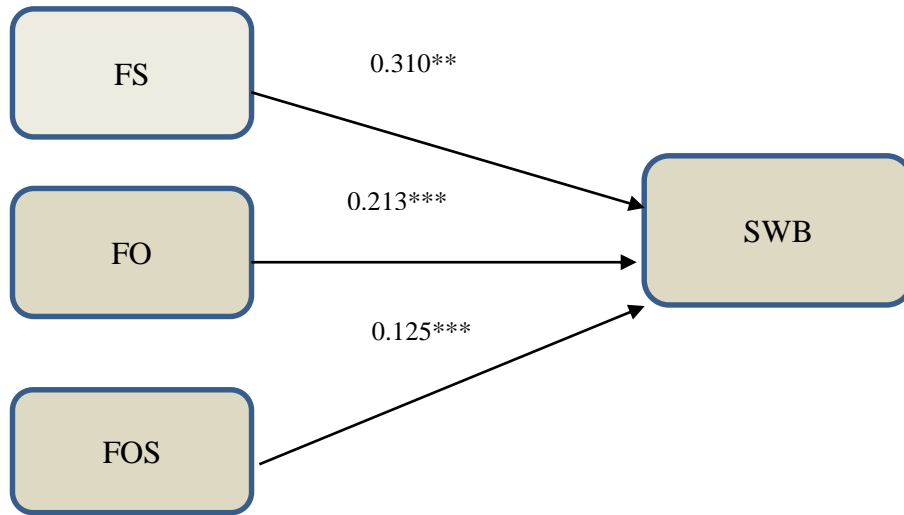
$$SWB = 22.601 + 0.310FS + 0.213FO+0.125FOS$$

Where, FS = Forgiveness of Self

FO = Forgiveness to Other- Person

FOS = Forgiveness to Situation

Regression Analysis results in Table 8, pointed out that the three subscales of Forgiveness made a significant predictive contribution to Subjective Well-being, ($F=45.361, P=.000$) and explained for contribution 32.2% of the variance in Subjective Well-being.



Note: *** $p < 0.001$

Figure 4 Predictive Model of Forgiveness on Subjective Well-being of Student Teachers

Predictive Power of Gratitude Subscales on Forgiveness

To test the predictive power of gratitude to forgiveness, a standard multiple regression analysis was conducted. The result of the standard multiple regression analysis revealed that interpersonal gratitude, gratitude in the face of suffering, recognition of gift and expression of gratitude together made a significant predictive contribution to forgiveness, $F(1199) = 22.31, p < 0.01$, and explained for 28% (adjusted R^2) of the variance in subjective well-being. According to Cohen (1998), this is a medium effect. The result of beta weights revealed that interpersonal gratitude, gratitude in the face of suffering, recognition of gift and expression of gratitude were positively and significantly related to forgiveness. The strongest predictor for forgiveness was recognition of gift followed by gratitude in the face of suffering, interpersonal gratitude and expression of gratitude. (see Table 9)

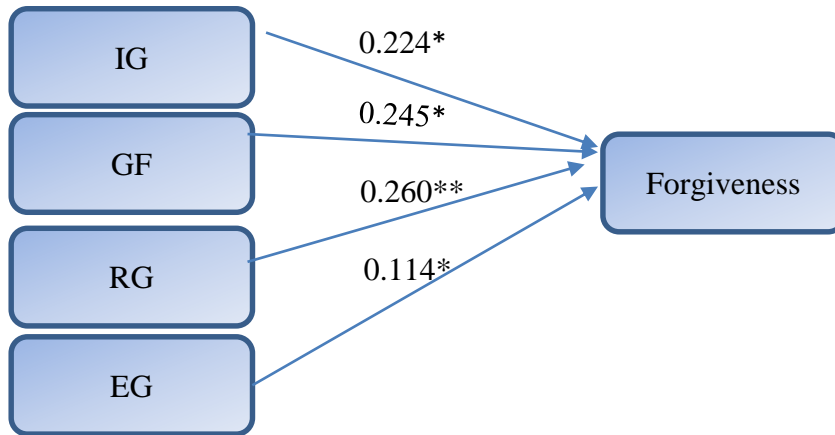
Table 9 Standard Multiple Regression Analysis Summary for Gratitude and Forgiveness

Predictors	<i>B</i>	β	<i>t</i>	<i>R</i>	R^2	<i>adjusted R^2</i>	<i>F</i>
Constant	54.23		17.275	0.435	0.265	0.275	22.31**
Interpersonal Gratitude (IG)	0.224	0.229	2.112*				
Gratitude in the face of Suffering (GF)	0.245	0.137	3.327*				
Recognition of Gift (RG)	0.260	0.105	3.346**				
Expression of Gratitude (EG)	0.114	0.157	1.423*				

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

Finally, based on the finding of standard multiple regression analysis, a diagram describing how gratitude significantly predicting forgiveness of student teachers in this study was drawn (see Figure 5). The resultant model for Forgiveness can be defined as in the following equation:

$$\text{Forgiveness} = 54.23 + 0.224\text{IG} + 0.245\text{GF} + 0.260\text{RG} + 0.114\text{EG}$$



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

Figure 5 Predictive Model of Gratitude on Forgiveness of Student Teachers

The Relationship among Student Teachers’ Gratitude, Forgiveness and Subjective Well-being

To explore the relationship among student teachers’ Gratitude, Forgiveness and Subjective Well-being, Pearson Product-Moment Correlation Coefficient was calculated. The result was shown in Table 10.

Table 10 Correlation among Student Teachers’ Gratitude, Forgiveness and Subjective Well being

	IG	GF	RG	EG	FG	SWB
(IG)	-	.288**	.287**	.209**	.311**	.309**
(GF)		-	.451**	.488**	.224**	.392**
(RG)			-	.545**	.265**	.232**
(EG)				-	.114	.031
(FG)					-	.247**
(SWB)						-

Note: ** $p < 0.01$

IG: Interpersonal Gratitude, GF: Gratitude in the face of Suffering, RG: Recognition of Gift, EG: Expression of Gratitude, FG: Forgiveness, SWB: Subjective Well-being

Table 10 showed that the significant correlation among interpersonal gratitude, gratitude in the face of suffering, and recognition of gift (gratitude), forgiveness and subjective well-being of student teachers. As expected interpersonal gratitude, gratitude in the face of suffering, and recognition of gift were significantly and positively correlated to forgiveness and subjective well-being. The more the student teachers’ gratitude and forgiveness, the higher the subjective well-being in their life. It can be said that student teachers’ who have enough gratitude knowledge can forgive more in their life situation and can get high subjective well-being. This finding was consistent with the result of Froh, Yurkewicz, & Kashdan; (2009) and the result of Emmons &

McCullough (2003). They found that there was positive and significant relationship between gratitude, forgiveness and subjective well-being.

The Mediation Analysis of Forgiveness on the Relationship Between Gratitude and Subjective Well-being

To assess the mediation role of forgiveness on relationship between gratitude and subjective well-being, the mediation analysis was conducted (see Table 11). The result showed that the direct effect of gratitude on subjective well-being was positive and significant (b=.114, p=.000). Furthermore, a significant indirect effect of the impact of gratitude on subjective well-being in presence of the mediator forgiveness was positive and significant (b=.083, p=.000). Hence, the forgiveness partially mediated the relationship between gratitude and subjective well-being. Mediation analysis summary was presented in Table 11.

Table 11 The Mediation Analysis Summary of Forgiveness on the Relationship Between Gratitude and Subjective Well-Being

Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence Interval		p-value	Conclusion
				Lower Bound	Upper Bound		
G → F → SWB	.190	.110	.083	0.056	0.116	.000	Partial Mediation

Note:

F = Forgiveness

G = Gratitude

SWB = Subjective Well-Being

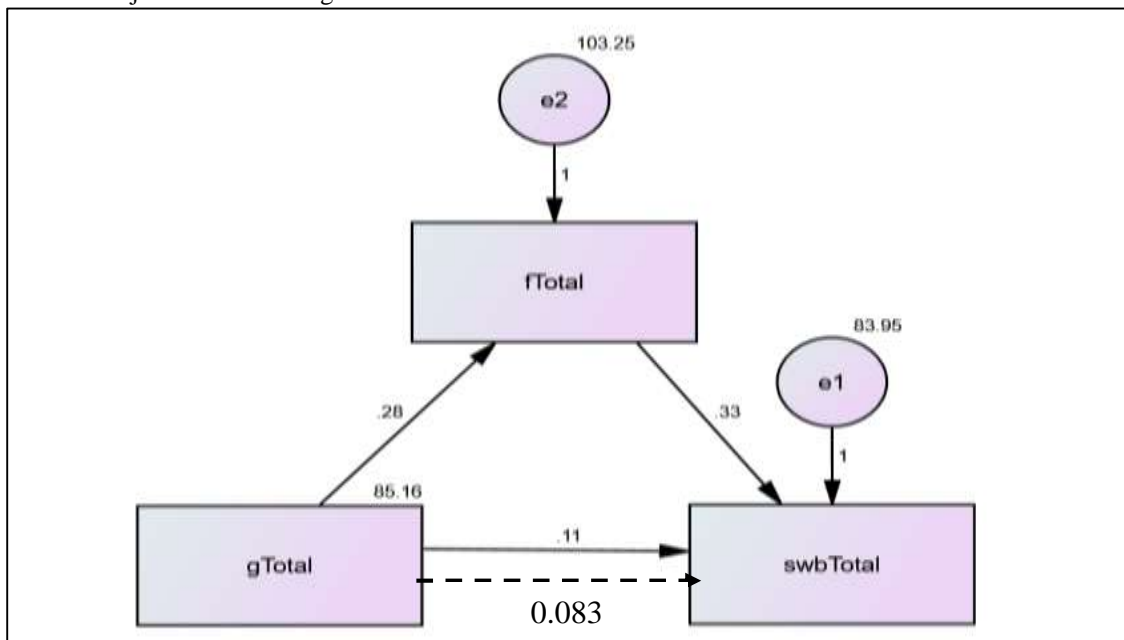


Figure 6 Mediating Role of Forgiveness Between Gratitude and Subjective Well-Being

Note:

- denoted direct effect
- - - - -→ denoted indirect effect

fTotal = Forgiveness Total

gTotal = Gratitude Total

swbTotal = Subjective Well-Being Total

Discussion

Based on the results, adjusted R square was .216, which meant that the total contribution by the combined set of SWB accounted for approximately 22% of the variance of gratitude. Therefore, the collective relationship between subjective well-being and the set of predictor variables can be characterized as moderate level of association. The beta (β) results showed that student teacher's expression of gratitude, gratitude in the face of suffering, and recognition of gifts were key predictors on subjective well-being. However, expression of gratitude Interpersonal gratitude was not significant predictor on subjective well-being.

And then, adjusted R square for forgiveness was .311, which meant that the total contribution by the combined set of subjective well-being accounted for approximately 31% of the variance of forgiveness. Thus, the collective relationship between subjective well-being and the set of predictor variables can be characterized as moderate level of association. The beta (β) results showed that student teachers' forgiveness to oneself, forgiveness to other person and forgiveness to situation were key predictors on subjective well-being.

Moreover, it can be predicted that student teachers who possess high gratitude and forgiveness have more subjective well-being. Therefore, the research investigated that the significant relationship between gratitude, forgiveness and subjective well-being of student teachers. The result from these analyses indicated that gratitude would be positively correlated with subjective well-being of student teachers and forgiveness would also be positively correlated with subjective well-being. Therefore, it can be concluded that student teachers possess better gratitude and forgiveness would be more subjective well-being. This finding was consistent with the result of Safaria, (2014).

Furthermore, this study was consistent with others' research indicated that gratitude and forgiveness may be crucial domains for the relationship between gratitude, forgiveness and subjective well-being (Kong, Ding, & Zhao; 2015).

Finally, based on the result of Mediation analysis, forgiveness was moderate significant predictor for subjective well-being and gratitude significantly predicted subjective well-being. The result showed that the direct effect of gratitude on subjective well-being was positive and significant ($b=.114, p=.000$). Furthermore, a significant indirect effect of the impact of gratitude on subjective well-being in presence of the mediator forgiveness was positive and significant ($b=.083, p=.000$). Hence, the forgiveness partially mediated the relationship between gratitude and subjective well-being.

Conclusion

In this study, the descriptive results showed that gratitude, forgiveness and subjective well-being of student teachers were satisfactory. Next, the relationships between gratitude and subjective well-being, forgiveness and subjective well-being and gratitude and forgiveness of student teachers were found in positively significance. Finally, the results of Amos analysis suggested that forgiveness partially mediated the relationship between gratitude and subjective well-being. Forgiveness and gratitude are the powers among individuals that help someone to generate positive emotion and help creating good relation to achieve subjective well-being (Breen, Kashdan, Lenser, & Fincham, 2010). If someone is hard to forgive, then they will feel difficult to feel gratitude (Narula, 2015). Forgiveness is a fundamental step to experience gratitude and well-being in life (Narula, 2015). Moreover, this study can be assumed that the presence of forgiveness

variable will mediate the relation between gratitude and subjective well-being. The following benefits will be contributed to the individuals' subjective well-being.

Benefits of Gratitude and Forgiveness. Gratitude could help change negative emotions from the past into future feelings of well-being (Baek & Lim; Lee et al., 2018). On the other hand, the relationship between gratitude and well-being that refers to is defined as a global evaluation of the quality of one's life and is regarded as an important component of subjective well-being (Diener et al., 2014). Moreover, the positive association between gratitude and subjective well-being may result from a broaden-and-build mechanism that is elicited by gratitude; i.e., gratitude may broaden an individual's awareness of positive and trigger actions that aid the accumulation of additional for achieving life goals (Chen, Wu, & Chang, 2016). Based on the theories, it can be synthesized that gratitude has an influence on well-being. With gratitude, student teachers can enjoy life experiences positively. The effect of gratitude on student teachers' well-being in mediation by forgiveness. According to Emmons & McCullough (2004), forgiveness and gratitude are defined as relational virtues because they have given the process of strengthening and repairing the relationship and both are associated with subjective well-being. It is important that the factors affecting subjective well-being, there is one factor to forgiveness, that is gratitude. Next, forgiveness and gratitude are the power among individuals that help someone to generate positive emotions and help creating god relation to achieve well-being (Breen et al.; Ahmad & Silfiasari, 2019). On the other hand, Wilks et al. (2014) explained that gratitude has been associated positively with a range of measures of subjective well-being, and those who score highly on measures of gratitude as an affective trait tend to experience a high degree of life satisfaction and positive affect, as well as scoring higher on measures of pro-social behavior. Based on the explanation of these experts, it can be synthesized that gratitude has an influence on the subjective well-being of the student teacher's life with forgiveness as mediation. With forgiveness as a positive psychology of a student teacher, the student teacher will get subjective well-being by coupled gratitude and forgiveness attitude toward life experiences.

Acknowledgements

We would like to acknowledge our deep and genuine thanks to the following benefactors who helped and supported us. First and foremost, we would like to offer respectful gratitude to Dr. Kay Thwe Hlaing, Rector of Yangon University of Education and Dr. May Myat Thu, Dr. Khin Khin Oo and Dr. Nyo Nyo Lwin, Pro-rectors of Yangon University of Education for their valuable administrative support for this paper. We would like to gratefully acknowledge Dr. Khin Hnin Nwe (Professor & Head, Department of Educational Psychology, Yangon University of Education) for her expert guidance, encouragement and valuable and timely advice to complete this study. Moreover, we would like to express our gratitude to the participants of student teachers in this study.

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ANXIETY AND READING COMPREHENSION IN ENGLISH OF EDUCATION DEGREE COLLEGE STUDENTS

May Zin Hein¹, San Win²

Abstract

The main purpose of this paper is the relationship between anxiety and reading comprehension in English of education degree college students. It was intended to compare the anxiety and reading comprehension in English of education degree college students from Mawlamyine Education Degree College, Yankin Education Degree College, and Thingankyun Education Degree College. This study also aimed to find out the gender differences and education level differences in anxiety and reading comprehension in English of education degree college students. The quantitative approach was used in this study. A total of 300 (150 males and 150 females) first-year and second-year student-teachers participated in this study. The Foreign Language Classroom Anxiety Scale (FLCAS) designed by Horwitz et al. (1986) consists of 33 items, the Foreign Language Reading Anxiety Scale (FLRAS) designed by Saito et al. (1999) consists of 20 items, and Reading Comprehension Test item designed by Cynthia Sherwood (n. d.) consists of 6 questions were used in the instruments (the item types were completion, short answer items, multiple-choice item, matching and essay type). Cronbach's alpha for the Inventory of (FLCAS) was 0.758. Cronbach's alpha for the Inventory of (FLRAS) was 0.751. In this study, no significant difference was found in language anxiety and reading anxiety by gender and education level. Anxiety and reading comprehension in English were significantly correlated at the 0.01 level. These results suggested that students with language anxiety tend to have reading anxiety. Decreasing students' anxiety and creating a low-anxiety classroom environment might help improve students' reading comprehension. Since reading anxiety seems to be a more stable construct as compared to language anxiety, coping with reading anxiety may require more time.

Keywords: Anxiety, Language anxiety, Reading anxiety

Introduction

At present day, education is a bridge that can use to go to greatness. No one can contribute to the world or earn money without education, one of the most important things in life. Everyone knows today is the knowledge age. Knowledge is power. Therefore, education is the fundamental need to raise our lives. There is no one in the world who does not need to face the challenges of globalization. In order to catch up with the trend of globalization, many countries have introduced the study of foreign language, especially the English language (EFL) speaking country, in which the study of English was introduced and has been taught for several decades in elementary and secondary as well as colleges and universities.

Anxiety is a part of human emotion which includes fear and uncertainty, uneasiness and frustration or tension (Brown, 2000). Vasa and Pine (2004) believe that the three basic interrelated aspects of anxiety are physiological, behavioral, and cognitive, but it is the cognitive aspect which has received the most attention in recent studies. Anxiety may be either facilitating; in a sense that it affects learning and positively or debilitating which hinders learning and. Facilitative anxiety stimulates the student to 'fight' the new learning task, and debilitating anxiety, on the other hand, motivates the student to adopt avoidance behavior (Eysenck, 1979).

Learning an additional language is both cognitively and emotionally demanding (Abu-

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Rabia, 2004). Anxiety, a complicated phenomenon, is a kind of emotion so the issue of anxiety in second language (L2) learning has concerned language educators and researchers for many years. A substantial amount of research has been conducted in this area and suggests that anxiety is an important factor in second language acquisition (Na, 2007). However, most of the research centers on the discussion of listening, speaking, and writing. Little attention has been paid to reading. Therefore, the present study attempts to fill the gap and explore the role of anxiety in (L2) reading.

Purposes of the Study

The main purpose of this study was to investigate the relationship between anxiety and reading comprehension in English of education degree college students.

The specific objectives were

1. to observe the differences in reading anxiety and language anxiety by gender
2. to find out the differences in reading comprehension by gender
3. to examine the differences in reading anxiety and language anxiety between first-year students and second-year education degree college students
4. to explore the differences in reading comprehension between first-year students and second-year education degree college students
5. to study the differences in reading anxiety and language anxiety among education degree college students
6. to examine the differences in reading comprehension among education degree college students

Definitions of Key Terms

Anxiety. A part of human emotion which includes fear and uncertainty, uneasiness and frustration or tension (Brown, 2000).

Language Anxiety. A crucial affective factor in students' learning (Fallah, 2017).

Reading Anxiety. An anxiety that learners experience while they are reading in this new target language (Zhou, 2017)

Review of Related Literature

Foreign Language Anxiety

As foreign language anxiety concerns performance evaluation within an academic and social context, it is useful to draw parallels between it and three related performance anxieties; communication apprehension, test anxiety and fear of negative evaluation. Due of its emphasis on interpersonal interactions, the construct of communication apprehension is quite relevant to the conceptualization of foreign language anxiety.

Communication apprehension is a type of shyness characterized by fear of or anxiety about communicating with people. Difficulty in speaking or in groups (oral communication anxiety) or in public (stage fright), or in listening to and learning a spoken message (receiver anxiety) are all manifestations of communications apprehension. Communication apprehension or some similar reaction obviously plays a large role in foreign language anxiety. People who typically have trouble speaking in groups are likely to experience even greater difficulty speaking in foreign language classes where they have little control of the communicative situation and their performance is constantly monitored.

Moreover, in addition to all the usual concerns about oral communication, the foreign language class requires the students to communicate via medium in which only limited facility is processed. The special communication apprehension permeating foreign language learning derives from the personal knowledge that one will almost certainly have difficulty understanding other and making oneself understood. Possibly because of this knowledge, many otherwise talkative people are silent in a foreign language class. And yet, the converse also seems to be true. Ordinarily self-conscious and inhibited speaker may find that communicating in a foreign language makes them feel as if someone else is speaking and they therefore feel less anxious. This phenomenon may be similar to shutters who are sometimes able to enunciate normally when singing or acting. Since performance evaluation is a going feature of most foreign language classes, test anxiety is also relevant to a discussion of foreign language anxiety.

Communication apprehension is a construct which is often linked to language anxiety. Young (1991) argued that communication apprehension is one of the performance anxieties which make up a theoretical model of language anxiety.

Communication apprehension refers to an individual's level of anxiety associated with their real or anticipated communication with another person or persons Yaung (1991). The high communication apprehension individual's feeling of anxiety about participating in oral communication outweighs his or her projection of gain from the situation.

Communication apprehension is a learned trait which is conditioned through reinforcement. If a child is rewarded in the home environment for silence and not rewarded or even punished when communicating, the probable result is a quiet child. We live, however, in an educational world where orally is viewed as a necessary, positive personal characteristic. Yaung (1991) found that teachers have a positive bias towards talkative children in their classrooms. Low communication apprehensive individuals are more verbally participative, select in high interaction performance followed by a negative evaluation which only serves to reinforce anxiety.

Method

This study sought to investigate the relationship between anxiety and reading comprehension in English of education degree college students. Quantitative research design and survey methods were used in this study.

Participants of the Study

By using random sampling technique, the sample for this study was chosen from education degree college students. A total of 300 education college students from Mawlamyine Education Degree College, Yankin Education Degree College and Thingankyun Education Degree College participated in this study (see Table 1).

Table 1 Number of Student Teachers from Selected Education Degree Colleges

Education College	First Year		Second Year		Total
	Male	Female	Male	Female	
(EDC 1)	25	25	25	25	100
(EDC 2)	25	25	25	25	100
(EDC 3)	25	25	25	25	100
Total	75	75	75	75	300

Instruments

Following instruments were used to collect data in this study.

- (1) The Foreign Language Classroom Anxiety Scale (FLCAS) designed by Horwitz et al. (1986).
- (2) The Foreign Language Reading Anxiety Scale (FLRAS) designed by Saito et al. (1999).
- (3) Reading Comprehension Test, designed by Cynthia (n. d.).

The Foreign Language Classroom Anxiety Scale (FLCAS) designed by Horwitz et al. (1986) consisted of 33 items. Participants responded to a 4-points Likert scale. Cronbach's alpha for (FLCAS) inventory was 0.758. The Foreign Language Reading Anxiety Scale (FLRAS) designed by Saito et al. (1999) consisted of 20 items. Participants responded to a 4-points Likert scale. Cronbach's alpha for (FLRAS) inventory was 0.751. Reading Comprehension Test designed by Cynthia Sherwood (n. d.) consisted of 6 questions. It has the item types of answer the question, multiple-choice question, complete the blank, matching and essay type.

Procedure

All the measures used in this study were adapted to the Myanmar language version. Then, expert review was conducted for face validity and content validity of the instruments by six experts in the field of educational psychology and educational test and measurement from Yangon University of Education. And also, expert review was conducted to Reading Comprehension Test for face validity and content validity by 3 experts from Yangon University of Education who have special knowledge in the field of Foreign Language (English).

A pilot study was conducted during the last week of December in 2018 with the sample of 50 first-year and second-year education degree college students from Mawlamyine Education Degree College. After receiving back, the questionnaires, the researcher improved and modified the weak points, misunderstanding of wording and phrases about some items that the participants seemed to be vague. By the use of these instruments, test administration was conducted on the first week of January, 2019 at Yankin Education Degree College, on the second week of January, 2019 at Mawlamyine Education Degree College students and at Thingankyun Education Degree College. After collecting the data, data entry was carried out by using statistics packages for the Social Sciences (SPSS) software version 25 and Microsoft Office Excel 2010. Then, data analysis and interpretation were conducted by the use of descriptive statistics, independent sample t-test, one-way ANOVA, and Pearson product-moment correlation methods.

Data Analysis and Findings

By using the descriptive statistics, the data obtained from education degree college students' classroom anxiety, reading anxiety and reading comprehension were investigated.

Table 2 Descriptive Statistics for the Anxiety and Reading Comprehension in English of Education Degree College Students

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Language Anxiety	300	47	101	76.22	7.979
Reading Anxiety	300	28	62	45.37	5.253
Reading Comprehension	300	2	21	8.85	3.758

Descriptive analysis showed that the mean and standard deviation of total language anxiety, total reading anxiety and reading comprehension of the whole sample (see Table 2).

Mean Comparison of Education Degree College Students' Anxiety by Gender

To find out the differences in education degree colleges students of anxiety, descriptive statistics was applied. The mean and standard deviation of males and females were reported. In language anxiety, the mean score of males is 76.39, and the mean score of females is 76.05. In reading anxiety, the mean score of males is 45.64, and the mean score of females is 45.03, respectively. Therefore, the mean scores of males are slightly higher than those of females (see Table 3).

Table 3 Mean and Standard Deviation of Education Degree College Students' Anxiety by Gender

Variables	Gender	N	Mean	Std. Deviation
Language Anxiety	Male	150	76.39	8.518
	Female	150	76.05	7.426
Variables	Gender	N	Mean	Std. Deviation
Reading Anxiety	Male	150	45.64	5.332
	Female	150	45.03	5.173

Table 3 showed that there were slight differences in mean scores by gender in anxiety. To obtain more detailed information for gender differences, the independent sample *t*-test was applied to find out the significant differences in anxiety by gender (see Table 4).

Table 4 The Result of Independent Sample *t*-test for Anxiety by Gender

Anxiety	<i>t</i>	<i>df</i>	<i>p</i>	Mean difference
Language Anxiety	0.368	298	0.713	0.340
Reading Anxiety	1.00	298	0.318	0.607

The result of the independent *t*-test showed that there were no significant differences between males and females in their level of language anxiety and reading anxiety in English (see Table 4).

It may be said that education college students may experience anxiety in English classes because foreign language class is dominated by anxiety-provoking situations and highly advanced English foreign language learners feel anxious while learning English. Both male and female are the same.

Mean Comparison of Education Degree College Students' Anxiety by Education Level

To find out the differences in education degree college students with anxiety, descriptive statistics was applied. The mean and standard deviation of first year and second year were reported. In language anxiety, the mean score of first year is 76.05 and the mean score of second year is 76.38. In reading anxiety, the mean score of first year is 44.79 and the mean score of second year is 45.88 respectively. Therefore, the mean scores of second year are slightly higher than the mean scores of first year which were reported in Table 5.

Table 5 Mean and Standard Deviation of Education Degree College Students' Anxiety by Education Level

Variables	Education Level	N	Mean	Std. Deviation
Language Anxiety	First Year	150	76.05	8.386
	Second Year	150	76.38	7.576
Reading Anxiety	First Year	150	44.79	5.279
	Second Year	150	45.88	5.188

Table 5 showed that there were slightly differences in mean scores by education level in anxiety. To obtain more detailed information for education level differences, the independent sample *t*-test was applied to find out the significant differences in anxiety by education level (see Table 6).

Table 6 The Result of Independent Sample *t*-test for Anxiety by Education Level

Anxiety	<i>t</i>	<i>df</i>	<i>p</i>	Mean difference
Language anxiety	-0.354	298	0.724	-0.327
Reading anxiety	-1.798	298	0.73	-1.087

The result of the independent *t*-test showed that there were no significant differences between first-year and second-year of language anxiety and reading anxiety in English (see Table 6).

It may be said that the content of education degree college students learning about foreign language is not much different.

Mean Comparison of Education Degree College Students' Reading Comprehension by Gender

To find out the differences in education degree college students of reading comprehension in English, descriptive statistics was applied. The mean and standard deviation of male and female were reported. For reading comprehension mark, the mean score of males is 8.60 and the mean score of females is 9.10, respectively. Therefore, the mean scores of females are slightly higher than the mean scores of males (see Table 7).

Table 7 Mean and Standard Deviation of Education Degree College Students' Reading Comprehension by Gender

Variables	Gender	N	Mean	Std. Deviation
Reading Comprehension	Male	150	8.60	3.593
	Female	150	9.10	3.911

Table 7 showed that there were slightly different in mean scores by gender of reading comprehension performance in English. To obtain more detailed information about gender differences, the independent sample *t*-test was applied to find out the significant differences in reading comprehension by gender (see Table 8).

Table 8 The Result of Independent Sample *t*-test for Reading Comprehension by Gender

Variables	<i>t</i>	df	<i>p</i>	Mean Difference
Reading Comprehension	-1.153	298	0.250	-0.500

The result of the independent *t*-test showed that there were no significant differences between male and female of the reading comprehension mark in English (see Table 8).

Mean Comparison of Education College Students' Reading Comprehension by Education Level

To find out the differences in education degree college students of reading comprehension in English, descriptive statistics was applied. The mean and standard deviation of first year and second year were reported. For reading comprehension mark, the mean score of first year is 9.22 and the mean score of second year is 8.48, respectively. Therefore, the mean scores of first year are slightly higher than the mean scores of second year (see Table 9).

Table 9 Mean and Standard Deviation of Education Degree College Students' Reading Comprehension by Education Level

Variables	Education Level	<i>N</i>	Mean	Std. Deviation
Reading Comprehension	First Year	150	9.22	4.093
	Second Year	150	8.48	3.363

Table 9 showed that there were slightly different in mean scores by education level of reading comprehension in English. To obtain more detailed information about differences in education level, the independent sample *t*-test was applied to find out the significant differences in reading comprehension by education level (see Table 10).

Table 10 Result of Independent Sample *t*-test of Reading Comprehension by Education Level

Variables	<i>t</i>	df	<i>p</i>	Mean Difference
Reading Comprehension	1.711	298	0.088	0.740

Based on the result of the independent *t*-test, it showed that there was no significant difference between first year and second year students' reading comprehension mark in English (see Table 10). The result on reading comprehension ($t = 1.711$, $p = 0.088$) was not significant although the mean scores were different.

It may be said that the students in the reading courses, have more accesses to the elements of reading such as grammar, sentence patterns and vocabulary in which their knowledge are the same by gender and education level.

Comparison of Anxiety and Reading Comprehension in English of Students Among Education Degree Colleges

The sample of 300 Education Degree College students were selected from three selected Education Degree Colleges. To examine Anxiety and Reading Comprehension in English differences exist among 3 Education Degree Colleges, analyses were conducted again and means were computed as follows.

Table 11 Mean Comparison of Anxiety and Reading Comprehension in English of Students Among Education Degree Colleges

Variables	Mean		
	EDC 1	EDC 2	EDC 3
Language Anxiety	76.20	76.65	75.80
Reading Anxiety	45.17	45.47	45.37
Reading Comprehension	9.79	8.89	7.78

According to Table 11, the mean score of students from EDC 2 were slightly high in language anxiety and reading anxiety. But the mean score of reading comprehension mark in EDC 1 was the lowest.

Next, to obtain more detailed information on the difference among education degree colleges, one way analysis of variance (ANOVA) was conducted (see Table 12).

Table 12 ANOVA Results of Anxiety and Reading Comprehension in English of Students Among Education Degree Colleges

Variables	Education Degree Colleges	Mean Square	F	p
Language Anxiety	Between Groups	2.333	0.084	0.919
	Within Groups	27.765		
Reading Anxiety	Between Groups	18.083	0.283	0.754
	Within Groups	63.976		
Reading Comprehension	Between Groups	102.270	7.560**	0.001
	Within Groups	13.528		

**mean difference is significant at the 0.01 level.

To obtain more detailed information of which colleges had significant differences, Post Hoc Comparison using Tukey HSD test was conducted (see Table 13).

Table 13 The Results of Tukey HSD Multiple Comparison for Anxiety and Reading Comprehension in English of among Education Degree Colleges

Variables	(I) EDC	(J) EDC	Mean Difference (I-J)	p
Language Anxiety	EDC 2	EDC 1	0.300	0.915
		EDC 3	0.100	0.990
Reading Anxiety	EDC 2	EDC 1	0.450	0.916
		EDC 3	0.850	0.733
Reading Comprehension	EDC 1	EDC 2	0.810	0.266
		EDC 3	2.010***	0.000

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

Tukey results indicated that EDC students among education degree colleges were no significant difference in language anxiety and reading anxiety. However, Turkey results indicated that EDC students from EDC 1 were significantly difference from those of EDC 3 in reading comprehension mark.

EDC 1 and EDC 3 may be due to different locations and availability of learning materials can be different.

Relationship Between Anxiety and Reading Comprehension in English

To explore the relationship of college students' anxiety and reading comprehension test in English, Pearson product moment correlation coefficients were calculated. The results of bivariate correlations were displayed in Table 14.

Table 14 Inter-correlations for Anxiety and Reading Comprehension in English

Variables	Language Anxiety	Reading Anxiety	Reading Comprehension Mark
Language Anxiety	1	0.617**	0.008
Reading Anxiety		1	0.071
Reading Comprehension			1

**Correlation is significant at the 0.01 level.

As expected, anxiety and reading comprehension performance in English were significantly correlated. In addition, the results of bivariate correlations showed that language anxiety and reading anxiety were significantly correlated.

If language anxiety is high, it may be because reading anxiety is also high.

Conclusion

This study aimed at investigating the relationship between anxiety and reading comprehension in English of education degree college students. The results of the current study would help foreign language teachers in various ways. The result of the independent *t*-test revealed that there was no significant difference in language anxiety and reading anxiety across genders. This finding contradicts that of Elkhafaifi (2005) and Abu-Rabia (2004), whose studies uncovered significant differences in language anxiety based on gender and females being more anxious than males. Nevertheless, this finding accords with that of Matsuda and Gobel (2004), who found no significant differences in language anxiety between male and female students. And then, the similarity of the present study's findings supported that of Hui-Ju Wu (2011), who found no significant differences in language anxiety and reading anxiety between male and female students.

The finding accords with that of Elkhafaifi (2005), whose study showed that second-year students are lower language anxiety than first-year students since the second-year students spent more time learning in school experience. However, in the finding of Casado and Dereshiwsky (2001), whose study showed students' language anxiety increases slightly as they progress from the first year to the second year. The finding of Hui-Ju Wu (2011) also found no significant differences in language anxiety and reading anxiety between first-year and second-year. In the present study, showed no significant differences between first-year and second-year in language

anxiety and reading anxiety. The students in the reading courses have more access to the elements of reading, such as grammar, sentence patterns, and vocabulary and their reading anxiety would decrease with the increasing exposure to and familiarity with reading.

In this study, the result of the independent *t*-test showed that there were no significant differences between males and females of the reading comprehension mark in English. Moreover, based on the result of the independent *t*-test, it showed that there was no significant difference between first year and second year of the reading comprehension mark in English in the present study. However, Tukey results indicated that EDC students from EDC 1 were significantly different from those of EDC 3 in reading comprehension mark. In addition, the results of bivariate correlations showed that language anxiety and reading anxiety were significantly correlated in the present study.

Discussions

In addition, if reading anxiety is exactly as what the study identified, a more stable construct, students' reading anxiety may decrease slightly and not significantly changed during the short timeframe. Thus, examining a more extended period of language learning is suggested for future research to obtain a significant decrease of reading anxiety. Foreign language anxiety should be taken more seriously not only by instructors but also by students and possibly program developers. This may be achieved through workshops or presentations on foreign language anxiety and exploring different possible ways to alleviate anxiety in the classroom. Young (1999) believed that the only way to train students to become better language learners is accomplished by helping students deal with and overcome their feelings of anxiety.

To overcome the negative and debilitating effects of anxiety on all four skills, particularly reading comprehension, it should be of utmost importance and high priority to teachers or instructors to remove any unnecessary anxiety from language learning, and create a stress-free, safe and relaxing atmosphere in the class where students feel secure, interested, joyful and motivated to learn and internalize the learning materials so that they can meet the aims of teaching and learning. Therefore, teachers play a prominent role in alleviating and controlling anxiety in the classroom. They are likely to facilitate language learning through providing a supportive and friendly environment, applying non-threatening teaching methods and making use of interesting topics and themes which are relevant to the learner's lives and interests

In this study, though not significant, the finding still suggests that

- English teachers should cope with students' anxiety in order to enhance reading comprehension performance.
- English teachers should create a low-anxiety classroom environment in order for students to learn reading.
- While trying to help the students suffering from language anxiety and reading anxiety, the teachers should anticipate that reading anxiety does not easily decrease, and thus coping with it requires more time.
- English teachers should look closely at the affective state of the learners as this greatly influences their learning.
- English teachers should familiarize students with the exam format and the type of rating system.

- In the reading courses, the teachers should spend much time delivering lectures to explain the content and analyzing important sentence patterns and grammar.

Several limitations are recognized in this study. In the case of a study of anxiety and reading comprehension in English of education college students, longitudinal design is more desirable. For better results, the research should be carried out in all education colleges in Myanmar. The validity of two scales should be considered because some students might not be willing to express themselves frankly. The students are not familiar with the reading passage, and weak in vocabulary.

In this study, there was limited research, only three education colleges. Thus, more research can be done on other student-teachers from different education degree colleges and universities of education. Future investigation is warranted to determine whether language anxiety and reading anxiety are indeed uncorrelated with gender. Future research is suggested to investigate whether spending more time on language learning in school indeed leads to less language anxiety. It is noteworthy that there were no significant differences in students' reading anxiety measured at the first year and the second year.

Acknowledgements

We would like to offer our respectful gratitude to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-rector, Yangon University of Education) for allowing us to do this study. And we would like to express our honorable gratitude to Dr. Khin Hnin Nwe (Professor and Head, Department of Educational Psychology, Yangon University of Education) for her great support and expert guidance for our study. Then, we would like to special thanks to all participants of this study.

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A STUDY ON TEACHER SELF-EFFICACY OF IN-SERVICE TEACHERS IN TAIKKYI DISTRICT

Aung Ko Min¹, Tin Mar Naing²

Abstract

The main aim of this study was to investigate teacher self-efficacy of in-service teachers in Taikkyi District. This study was conducted by using the descriptive research design and survey method. Among the types of survey studies, a cross-sectional survey was used. Teachers' self-efficacy for teaching was examined by using a questionnaire survey method. The sample of the present study was 355 in-service teachers (107 Primary Assistant Teachers, 148 Junior Assistant Teachers and 100 Senior Assistant Teachers) in Taikkyi District. In this study, Teacher Self-Efficacy Scale (TSE) designed by Albert Bandura (1997) was used. The reliability coefficient of TSE was 0.90. Based on the descriptive analyses of teachers' self-efficacy, the teachers in this study were identified into three groups, 16.6% of teachers were considered high group, 69.3% of teachers were grouped into a moderate group; and the remaining teachers of 14.1% were identified as a low group. According to the results of this study, there were no significant differences in teacher self-efficacy of in-service teachers by gender, age, marital status, and teaching subjects, whereas there was a significant difference in teacher self-efficacy of in-service teachers by designation. Among these subscales, there were significant differences on instructional self-efficacy, efficacy to enlist parental involvement, and efficacy to create a positive school climate.

Keywords: Self-efficacy, Teacher self-efficacy, In-service Teacher

Introduction

Teachers' careers are influenced by various factors, with one of the most significant variables being their self-efficacy. In the realm of social cognitive psychology, the concept of self-efficacy revolves around an individual's belief in their ability to perform a specific task and achieve the desired goals. Individuals with high self-efficacy are adept at effective planning and successfully completing tasks, drawing upon their confidence in their own capabilities. They have a strong belief in their capacities and apply them with confidence, even when faced with challenging tasks. On the other hand, individuals with low self-efficacy tend to avoid complex tasks, struggle to devise effective plans to achieve goals, and have limited belief in their own abilities to accomplish objectives. In the context of teaching, teachers with high self-efficacy have a clear understanding of their capacities and can plan their activities successfully, whereas teachers with low self-efficacy may struggle to fulfill their professional responsibilities.

One of the major challenges facing in-service teachers is encountering a significant obstacle in the form of incorporating student-centered approaches, methods, and techniques that promote the development of essential skills and empower students to take charge of their own learning. The effectiveness of these teaching practices relies heavily on teachers' self-perception and confidence in their ability to navigate the challenges associated with adopting learning-centered models.

Self-efficacy, a psychological phenomenon encompassing an individual's self-perception, holds significant influence over teachers' decision-making processes regarding task assignments and activities. Moreover, it shapes their dedication and persistence when confronted with challenges, and even impacts their emotional reactions to demanding situations. At its core, self-

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efficacy represents a cognitive construct that serves as a mediator between one's knowledge and subsequent actions.

Self-efficacy beliefs exert an influence on the quality of human functioning through various cognitive, motivational, affective, and decisional processes. Specifically, these beliefs play a role in shaping individuals' expectations of outcomes, attributions of successes and failures, and their ability to motivate themselves and persevere when faced with obstacles. Furthermore, self-efficacy beliefs have an impact on individuals' perceptions of their coping abilities, mechanisms for regulating emotions, and susceptibility to stress and depression. Finally, these beliefs can also influence the choices individuals make during critical life moments, potentially influencing the trajectory of their lives and shaping their future endeavors.

Teacher's self-efficacy, as a significant motivational construct, plays a pivotal role in shaping their thoughts, behaviors, and emotions within an educational context. It is important to note that teachers' efficacy beliefs are not uniform but rather dependent on the specific tasks, students, and circumstances encountered in the classroom. One specific area of teacher task-specific self-efficacy that has been extensively studied in the research literature is classroom practices. Findings from these studies indicate that teachers with high self-efficacy tend to create positive classroom learning environments characterized by well-planned and engaging lessons, as well as effective management strategies. Furthermore, teachers who possess a strong sense of self-efficacy in the school environment report that fostering closer relationships and interactions with students can enhance their overall behavioral functioning.

Teacher's self-efficacy serves as a crucial indicator of teachers' perceptions regarding their ability to effectively influence positive learning outcomes and behavioral changes. Extensive research has demonstrated that teacher self-efficacy significantly impacts both teaching behaviors and student motivation and achievement (Kitsantas & Zimmerman, 2009). However, the persistent challenge of accurately measuring teacher self-efficacy has been a recurring issue within the field. It is essential that when measuring teacher self-efficacy, the assessment reflects a specific context or domain of functioning, rather than a global assessment. A comprehensive measure of teacher self-efficacy should encompass the teacher's confidence in their overall teaching abilities, while a context-specific or domain-specific measure focuses on the teacher's confidence in accomplishing specific tasks or objectives. According to Brady and Woolfson (2008), teacher self-efficacy refers to a teacher's belief in their own ability to effectively support student learning. Their research indicates that teachers with high self-efficacy are more inclined to take personal responsibility for addressing the individual needs of their students within the classroom.

Teacher's self-efficacy of in-service teachers in Myanmar has not been widely acknowledged by researchers. In addition, teacher's self-efficacy was found as important determinant of school performance by previous researchers. Therefore, this study tried to investigate teacher's self-efficacy of in-service teachers in Taikkyi District.

Purposes of the Study

The main purpose of the study was to investigate teacher's self-efficacy of in-service teachers in Taikkyi District, Yangon Region, Myanmar.

The specific objectives of the study were

- to examine the teacher's self-efficacy of in-service teachers by gender
- to explore the teacher's self-efficacy of in-service teachers by aged group
- to examine the teacher's self-efficacy of in-service teachers by designation
- to examine the teacher's self-efficacy of in-service teachers by the subjects what they taught

Definitions of Key Terms

Self-efficacy: Self-efficacy refers to the individual's beliefs about his ability to organize and implement the action steps to reach the desired goal (Kitsantas & Zimmerman, 2009).

Teacher self-efficacy: A teacher's belief in his or her capabilities to bring about desired outcomes of student engagement and learning (Bandura, 1977).

In-service Teacher: The term in-service teacher designates a teacher that has certification or is already teaching in a classroom (Ojo, 2006).

Related Literature Review

Self-efficacy

Janssen (2015) proposed that self-efficacy is a person's beliefs about his or her abilities to organize and execute actions needed to complete tasks. Self-efficacy beliefs shape the outcomes people expect their efforts to produce. Those of high self-efficacy expect to realize favorable outcomes. Conversely, those with low self-efficacy expect their efforts to bring poor outcomes. People of low self-efficacy quickly give up trying (Bandura, 2001).

Self-efficacy Theory

Bandura's (1977) social cognitive theory introduced the concept of self-efficacy as the primary motivational force behind an individual's action. Bandura defined self-efficacy as "the conviction that one can successfully execute the behavior required to produce outcomes". Self-efficacy is considered to lead the individual from knowledge to action. Bandura (1986) implied that increased efficacy beliefs is viewed as a more accurate description of teacher efficacy than the construct called increased persistence and high levels of performance.

Teacher Self-Efficacy

Teacher self-efficacy as a belief is expected to guide teachers in their behaviors, decisions, and motivation concerning teaching. The power of self-efficacy is rooted in its ability to guide the decisions that teachers make during their role as teachers. According to Bandura's (1977) self-efficacy proposal, coping behavior will be initiated, how much effort will be expended and how long it will persist in the face of aversive experiences. One can see how self-efficacy aid teachers while their professional life. Specifically, teachers' level of efficacy for teaching affects their daily decisions related to teaching and their willingness to invoke specific strategies and techniques.

self-efficacy is related to many meaningful educational outcomes such as teachers' persistence, enthusiasm, commitment, and instructional behavior, as well as student performance (Tschannen-Moran & Hoy, 2001). Teachers with a strong sense of efficacy set more challenging

goals, and have demonstrated high levels of planning and organization (Allinder, 1994). Teachers with a high sense of self-efficacy devote more classroom time to academic learning aid students who have difficulty, and reward them for their achievements. Ashton (1984) concluded that teachers with a high sense of self-efficacy are less critical of students who make mistakes and work longer with students who are having difficulty mastering the material. In contrast, teachers who have a low sense of self-efficacy spend less time on academics. Teachers with a low sense of self-efficacy will easily give up on the students when the students do not learn quickly and will criticize the students for their failures. Tschannen-Moran and Hoy (2001) also stated that teachers who have a low sense of individual self-efficacy rely on extrinsic rewards and negative sanctions to motivate students.

According to Bandura (1991), teacher candidates with high self-efficacy can approach challenging tasks and recover quickly from disappointment and setbacks. In contrast, low self-efficacy results in avoiding challenging situations and believing that difficult tasks are beyond one's capabilities. Brouwer and Tomic (2001) concurred with Bandura in the view that teachers who believe that they are competent to teach their students have strong self-efficacy beliefs in teaching. In Brouwer and Tomic study, teachers who doubted their ability in this respect were considered to have weak self-efficacy beliefs in teaching. Teachers who enter their field without adequate training can experience challenges throughout their career (Simonsen et al., 2013). According to Simons et al. (2013), administrators should have multi-tiered support. The multi-tiered support should consist of (a) training all teachers in classroom management practices, (b) identifying teachers who require additional training in classroom management, (c) supporting the designated teachers, and (d) continuing to monitor teachers' classroom management to adjust supports (Simonsen et al., 2013).

Method

Sampling

In order to obtain the data on test development, a sample of teachers from Taikkyi districts, Yangon Region was selected by random sampling technique. Firstly, twenty-three schools were selected from Taikkyi district, Yangon Region. Therefore, in-service teachers from 23 schools participated in this study. The selected schools included all types of schools: high schools, middle schools and primary schools. Finally, altogether 355 teachers (31 male teachers and 324 female teachers) were randomly selected from 9 high schools, 3 middle schools and 11 primary schools. According to job designation, 107 primary assistant teachers, 148 junior assistant teachers and 100 senior assistant teachers participated in this study.

Research Method

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

Research Instrumentation

To examine teacher's self-efficacy, the Teacher Self-Efficacy Scale designed by Albert Bandura (1997) was used in this study. This scale included 30 items and in-service teachers' responses were assessed by a five-point Likert scale.

Data Analysis and Research Findings

Mean and Standard Deviation of Teachers’ Self-Efficacy

Descriptive analyses revealed that the mean and standard deviation of teachers’ self-efficacy for the whole sample were 104.08 and 13.106. The practical mean score of 104.08 was greater than the theoretical mean score of 90. Therefore, in this study, teachers’ self-efficacy was satisfactory.

Three Different Groups of Teachers’ Self-Efficacy

Based on descriptive analyses of teachers’ self-efficacy, teachers in this study were identified into three groups: 16.6% of teachers with scores one standard deviation above the sample mean were considered high group, 69.3% of teachers with scores between (+1) and (-1) standard deviation from the sample mean were grouped into moderate group; and the remaining teachers of 14.1% who scored one standard deviation lower than the sample mean were identified as a low group.

Descriptive Statistics for Components of Teacher Self-efficacy of In-service Teachers

In order to reveal the minimum score, maximum score, mean and standard deviation of components of teacher self-efficacy of in-service teachers was conducted. Descriptive analysis revealed the differences in means and standard deviations for components of general self-efficacy of in-service teachers (see Table 1).

Table 1 Descriptive Statistics for Components of Teacher Self-efficacy of In-service Teachers

Variables	N	Minimum	Maximum	Mean	Mean %	SD
Efficacy to Influence Decision making	355	3	14	9.36	62.38%	13.5
Efficacy to Influence School Resources	355	1	5	3.19	63.77%	16.66
Instructional Self-Efficacy	355	19	43	32.81	72.91%	9.122
Disciplinary Self-Efficacy	355	7	15	11.86	79.04%	10.353
Efficacy to Enlist Parental Involvement	355	5	15	10.15	67.66%	12.422
Efficacy to Enlist Community Involvement	355	4	19	11.26	56.28%	13.392
Efficacy to Create a Positive School Climate	355	17	39	28.65	71.63%	9.674

Comparison of Teacher Self-Efficacy of In-service Teachers by Gender

Descriptive statistics was conducted to compare teacher self-efficacy of in-service teachers by gender (see Table 2)

Table 2 Comparison of Mean and Standard Deviations, and Results of Independent Samples *t* Test for Teacher Self-Efficacy of In-service Teacher by Gender

Variable	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	MD
Teacher Self-Efficacy	Male	31	105.10	15.967	0.450	353	0.653	1.109
	Female	324	103.99	12.825				

Table 2 showed that although male teachers had scored a little more on teacher self-efficacy than female teachers but there was no significant difference in teacher self-efficacy of in-service teachers by gender. This result was consistent with the findings that there was no significant difference in teacher self-efficacy by gender (Hay Mar Oo, 2017). This may be because nowadays both males and females are more confident and more aware about their capacities because they face equally to overcome the difficulties with their self-beliefs. On the other hand, the number of male teachers is less than female teachers in Myanmar.

Comparison of Teacher Self-Efficacy of In-service Teachers by Age

The means and standard deviations of teacher's self-efficacy according to their age are presented in Table 3.

Table 3 Comparison of Mean and Standard Deviations for Teacher Self-Efficacy of In-service Teacher by Age

Variable	Age	N	Mean	SD
Teacher Self-Efficacy	18-30	89	102.39	14.899
	31-40	109	104.00	13.155
	41-50	78	104.88	12.130
	51-60	79	103.99	11.783
	Total	355	104.08	13.106

The mean value of teachers' self-efficacy of in-service teachers who were between the age of (41-50) perceived slightly higher than that of other aged group teachers (see Table 3). According to the result, it can be said that the age group 41-50 had more positive self-efficacy and confidence than the other age group.

Then, one-way analysis of variance (ANOVA) was conducted to find out the differences of self-efficacy of in-service teachers by age.

Table 4 ANOVA Results for In-Service Teachers' Self-Efficacy by Age

Self-Efficacy	Sum of Squares	df	Mean Square	F	p
Between Groups	425.179	3	141.726	0.824	0.481
Within Groups	60384.286	352	172.035		
Total	60809.465	355			

ANOVA result showed that there were no significant differences between in-service teachers' self-efficacy by age. It may be said that people may place less importance on their job as they get older and other aspects of their bodies (e.g., health and the valuable things their body can do) become more important. Thus, self-efficacy about their job could not be different according to the ages. This result was consistent with the findings that there was no significant difference in teacher self-efficacy by age (Hay Mar Oo, 2017).

Comparison of Teacher Self-Efficacy of In-service Teachers by Designation

The means and standard deviations of teachers' self-efficacy according to their designation (primary assistant teachers, junior assistant teachers and senior assistant teacher) are presented in Table 5. The mean value of teachers' self-efficacy of senior assistant teachers perceived slightly higher than that of primary and junior assistant teachers (see Table 5).

Table 5 Comparison of Mean and Standard Deviations for Teacher Self-Efficacy of In-service Teachers by Designation

Variables	Designation	N	Mean	SD
Self-Efficacy	Primary Assistant Teachers	107	107.02	13.063
	Junior Assistant Teachers	148	104.34	12.383
	Senior Assistant Teachers	100	100.56	13.486
	Total	355	104.08	13.106

To get more detailed information on the of teachers' self-efficacy by designation, one way analysis of variance (ANOVA) was conducted. ANOVA results showed that there were statistically significant differences of teachers' self-efficacy among primary, junior and senior assistant teachers (see Table 6).

Table 6 ANOVA Results for In-Service Teachers' Self-Efficacy by Designation

Self-Efficacy	Sum of Squares	df	Mean Square	F	p
Between Groups	1.854	3	0.927	3.051*	0.049
Within Groups	106.918	352	0.304		
Total	108.772	355			

Note. * The mean difference is significant at 0.05 level

After having found that ANOVA result was significant, then Tukey's HSD was conducted to find out which significant groups' means (compared with each other) were different.

Table 7 Tukey HSD Results for In-service Teachers' Self-Efficacy by Designation

Variable	(1) Designation	(2) Designation	Mean Difference	<i>p</i>
Self-Efficacy	PAT	JAT	-0.131	0.149
		SAT	-0.181*	0.049

* $p < 0.05$

Note: PAT = Primary Assistant Teachers, JAT= Junior Assistant Teachers, SAT= Senior Assistant Teachers

According to results, there was significant difference of in-service teachers' self-efficacy between primary assistant teachers and senior assistant teachers. But there was no significant difference in junior assistant teachers.

Mean Comparison for Teachers' Self-Efficacy of In-Service Teachers by Designation

Moreover, to find out the differences in each factor of in-service teachers' self-efficacy by designation, one-way analysis of variance (ANOVA) was conducted. It can be clearly seen in Table 8.

Table 8 ANOVA Results for Each Factor of In-service Teachers' Self-Efficacy by Designation

Variables		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Efficacy to Influence Decision making	Between Groups	1.860	3	1.2899	0.226	0.798
	Within Groups	1449.706	352	4.118		
	Total	1451.566	355			
Efficacy to Influence School Resources	Between Groups	3.085	3	1.542	2.899	0.056
	Within Groups	187.270	352	0.532		
	Total	190.355	355			
Instructional Self-Efficacy	Between Groups	3.9.525	3	159.763	9.962***	0.000
	Within Groups	5644.830	352	16.036		
	Total	5964.355	355			
Disciplinary Self-Efficacy	Between Groups	9.801	3	4.900	2.044	0.131
	Within Groups	843.872	352	2.397		
	Total	853.673	355			
Efficacy to Enlist Parental Involvement	Between Groups	62.833	3	31.417	9.482***	0.000
	Within Groups	1166.254	352	3.313		
	Total	1229.087	355			

Variables		Sum of Squares	df	Mean Square	F	p
Efficacy to Enlist Community Involvement	Between Groups	4.849	3	2.425	0.337	0.714
	Within Groups	2534.824	352	7.201		
	Total	2539.673	355			
Efficacy to Create a Positive School Climate	Between Groups	321.156	3	160.578	11.352***	0.000
	Within Groups	4979.227	352	14.146		
	Total	5300.383	355			

*** $p < 0.001$

According to the ANOVA result, there were significant differences in each factor of the in-service teachers' self-efficacy according to designation.

As shown in Table 8, the ANOVA result revealed that there were significant differences in the mean scores for self-efficacy of in-service teachers by designations. To obtain more detailed information on self-efficacy in which designation had differences, the Post hoc Test was carried out by Tukey HSD method (see Table 9).

Table 9 Tukey HSD Results for In-service Teachers' Self-Efficacy by Designation

Variable	(1) Designation	(2) Designation	Mean Difference	p
Instructional Self-Efficacy	PAT	JAT	1.457*	0.012
		SAT	2.462***	0.000
Efficacy to Enlist Parental Involvement	SAT	PAT	-1.069***	0.000
		JAT	-0.760**	0.004
Efficacy to Create a Positive School Climate	SAT	PAT	-2.371***	0.000
		JAT	-1.820***	0.001

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: PAT = Primary Assistant Teachers, JAT= Junior Assistant Teachers, SAT= Senior Assistant Teachers

According to the results, there were significant differences for each factor of the in- service teachers' self-efficacy among designations.

Table 9 shows the differences in mean scores of self-efficacy by designations. Among the subscales, there were significant differences in instructional self-efficacy, efficacy to enlist parental involvement, and efficacy to create a positive school climate. To deal with challenging and difficult students, is one of the major problems that most of the teachers have faced. To connect finding a solution to that problem and the instructional self-efficacy of the teachers, designation can influence those students to admonish. According to the results shown in Table 9, the primary

assistant teacher can have a good influence on them more than the junior assistant teacher and senior assistant teacher for some reasons. First, PAT in some school can build trust to grow closer to the most challenging students. Not only young students but also teenaged students trust and believe in their primary teachers as they build a read and strong student-teacher relationship, since they have built the very first primary schooldays of their young age. Then, weak students need appreciation and praise. It can build the mutual respect and mutual-understanding between the teacher and weak students. So, those primary teachers can have a real influence over them. Secondly, it is undeniable that there are some students who are lack in school lessons and activities. For those students, it is also the primary teachers who can draw the attention of the students through a variety of teaching styles, school activities and extra-curricular activities. Unlike the teachers of adult learners, the primary teachers use various kinds of visual aids, show videos, use picture symbols and flash cards and sometimes physically demonstrate themselves. By doing so, they can establish close relationships between students and teachers. As an effective outcome, the students listen and obey the teachers' words. Then, even the weak students become to engage in classroom activities. By looking at this point, primary assistant teachers can influence better than junior assistant teachers and senior assistant teachers.

Another essential fact in a good teaching- environment is parental involvement. Therefore, the efficacy to enlisting parental involvement must be considered as a vital role. The teachers must be able to make the parents actively involved in every school activity. In basic education schools, the designation of teachers can plan to improve parental engagement at schools. In accordance with this survey, primary assistant teachers can perform the best by doing 'an Open House Tour the first schooldays of an academic year.' On that day, the teachers let the parents come into the school and see the environment that their children will be in. Moreover, they do ice-breaking activities together with the parents. And the parental meetings are also held every month in primary level. For these points, primary assistant teachers perform more parental participation at schools.

This result was contrary to the findings of Zajacova, Scott, Lynch, & Espenshade, (2005). They found that there was no significant difference in teacher self-efficacy by designation. In their study, participants gave the responses about their work situation. They said that their workloads are allocated similarly between the different designation groups, so that they serve their duties similarly. Therefore, previous researchers concluded that the designation does not influence the teachers' self-efficacy.

Comparison of Teacher Self-Efficacy of In-service Teachers by Teaching Subject

The means and standard deviations of teachers' self-efficacy according to their teaching subjects (science, arts) from all selected schools are presented in Table 10. The mean value of teachers' self-efficacy of teachers who teach science subjects perceived slightly higher than that of teachers who teach art subjects (see Table 10).

Table 10 Comparison of Mean and Standard Deviations for Teacher Self-Efficacy of In-service Teacher by Teaching Subjects

Variables	Teaching Subjects	N	Mean	SD
Self-Efficacy	Science	156	104.29	13.696
	Arts	199	103.92	12.657
	Total	355	104.08	13.106

Then, Independent samples *t* test was conducted to find out the differences of self-efficacy of in-service teachers by teaching subjects.

Table 11 Results of Independent Samples *t* Test for In-Service Teachers' Self-Efficacy by Teaching Subject

Component	Teaching Subjects	N	<i>t</i>	<i>df</i>	<i>p</i>	<i>MD</i>
Teacher Self-Efficacy	Science	156	0.267	353	0.789	-2.385
	Arts	199				

Independent samples *t* test result showed that there was no significant difference between in-service teachers' self-efficacy by teaching subjects. This result was consistent with the findings of Hay Mar Oo (2017). She found that, there was no significant difference in teacher self-efficacy by teaching subjects.

Discussion and Recommendations

A strong sense of self-efficacy enhances personal accomplishment in many ways. Students in the school and workers in the workplace with high perception of self-efficacy approach difficult tasks as a challenge to be mastered rather than as a threat to be avoided. Self-efficacy is distinctively related to motivational constructs such as locus of control, self-concept and outcome expectation for the reasons of their specificity and close link to performance tasks. It has implications in predicting motivation and learning to a better performance on students as to activities, goals, efforts, and persistence.

Limitation

In this study, the sample of participants was chosen from Taikkyi District. So, further research should be carried out by selecting participants from in-service teachers of other districts. Moreover, further research of teacher self-efficacy should be carried out with the sample, not only for in-service teachers but also for student teachers and university teachers. To confirm and validate the findings of this study, it is suggested that longitudinal studies should be undertaken. Future researchers also need to examine the other demographic characteristics of in-service teachers in detail and should carry out by selecting in-service teachers from different regions and states so that the sample might be representative.

Conclusion

The primary objective of this study was to examine the self-efficacy of in-service teachers in teaching and determine any significant variations in self-efficacy based on factors such as gender, age, teaching subjects, and designation. The study included 355 teachers from 23 schools in the Taikkyi District. The findings of this study serve as an asset for teachers throughout their professional journey, exerting influence on their decision-making processes and their willingness to utilize specific strategies and techniques in the realm of teaching. Moreover, these findings have substantial implications for the future generation of Myanmar as they provide insight into the significance of in-service teachers' self-efficacy. Teachers' self-efficacy is an important component of teacher competencies. Teachers with good self-efficacy can improve the quality of their teaching and ultimately enhance student learning achievement. The increasing teachers' self-efficacy has improved the positive attitudes of other teachers, such as an attitude of learning interest, engagement, and curiosity. With these attitudes, teachers can understand students' learning needs, acknowledge their shortcomings, and appreciate their opinions. The attitude of the teacher who is more caring, patient, and democratic is what makes the student learning environment to be more conducive to foster the freedom of opinion that leads to the freedom of thought. Teachers with higher levels of overall efficacy have students with higher perceived learning levels than teachers with lower self-efficacy levels. The increasing teachers' self-efficacy can also be identified directly through teachers' interest in learning, engagement, and high curiosity. Teachers' curiosity needs to be cultivated continuously so it becomes a habit and attitude. If the teacher's curiosity has become his/her attitude, then the teacher's self-efficacy will grow by itself. This shows that the teachers' self-efficacy raises an attitude of interest to keep learning, active engagement, and curiosity. If the attitudes of interest in learning, active engagement, and curiosity has developed in teachers, they will impact the students' curiosity in learning. However, despite the relevance that teachers' self-efficacy may have in teaching, they alone do not guarantee the effectiveness of teaching. They must have the knowledge and skills to help students to achieve the desired learning outcomes. The fact of considering oneself capable of teaching does not guarantee by itself the quality of teaching; knowledge, training, and teaching skills that are essential in any case to promote student learning.

Acknowledgements

We would like to acknowledge our deep and genuine thanks to the following benefactors who helped and supported us. First and foremost, we would like to offer respectful gratitude to Dr. Kay Thwe Hlaing, Rector of Yangon University of Education, and Dr. May Myat Thu, Dr. Khin Khin Oo and Dr. Nyo Nyo Lwin, Pro-rectors of Yangon University of Education for their valuable administrative support for Med (Q) programme. We would like to gratefully acknowledge Dr. Khin Hnin Nwe (Professor & Head, Department of Educational Psychology, Yangon University of Education) for her expert guidance, encouragement, and valuable and timely advice in completing this study. Moreover, we would like to express our gratitude to the participants of in-service teachers of this study.

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AN ANALYTICAL STUDY OF INTENTIONAL SELF-REGULATION AND POSITIVE YOUTH DEVELOPMENT OF ADOLESCENTS

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Abstract

The main aim of this study was to investigate the relationship between intentional self-regulation and positive youth development of adolescents in Myanmar. Then, this study was to examine the intentional self-regulation of adolescents by gender, specialized subject and parents' education level. In addition, this study was to analyze adolescents' positive youth development by gender and parents' education level. In this study, a total of 1110 participants, Grade 10 and Grade 11 students were selected from Basic Education Schools by using random sampling technique. Descriptive survey method was used. This study was conducted at 6 Regions and 4 States in Myanmar. Selection, Optimization and Compensation (SOC) Questionnaire developed by Geldhof et al., (2015) (Cronbach's alpha = 0.82) was used to measure the intentional self-regulation of adolescents. Then, Positive Youth Development Inventory developed by Arnold (2012) (Cronbach's alpha = 0.92) was used to examine the positive youth development of adolescents. According to the results of independent samples *t* - test, it was found that there were significant differences in intentional self-regulation by gender and specialized subject. Moreover, the ANOVA results revealed that there were also significant differences in intentional self-regulation by parents' education level. Concerning positive youth development of adolescents, the results of independent samples *t*-test showed that there were significant differences in positive youth development by gender. Then, ANOVA results showed significant differences in positive youth development by parents' education level. Moreover, Pearson's Product Moment Correlation revealed that the intentional self-regulation of adolescents was positively correlated with their positive youth development ($r = 0.635, p < 0.01$). Therefore, it can be concluded that the high quality of intentional self-regulation can affect the well positive youth development of adolescents.

Keywords: Intentional Self-Regulation, Positive Youth Development, Adolescent

Introduction

Importance of the Study

Today's young people, adolescents, belong to the most promising generation in the history of the world. They stand at the summit of the ages. Most adolescents encounter identity confusion. They have trouble defining what they want to do, what they want to be and what thing is important for them. Thus, intentional self-regulation has become recognized for its foundational role in promoting wellbeing across the lifespan, including physical, emotional, social and economic health and educational achievement. During adolescence, young people often explore their identities and thinking about pathways into adulthood. Their increasing cognitive and behavioral capacities provide them with the tools for understanding and evaluating possible identities task. In addition, many have pointed to the importance of having the skills to self-regulate and maintain a positive sense of future. The current study investigated the role of intentional self-regulation or youth's goal-directed skills and youth's hopeful expectations about the future in predicting positive youth development.

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Aim of the Study

The main aim of this study is to investigate the relationship between intentional self-regulation and positive youth development of adolescents.

The specific objectives of this study are described as follows.

1. To explore the intentional self-regulation of adolescents
2. To find out the differences of intentional self-regulation during adolescence by gender, specialized subject and parents' education level
3. To examine the differences of positive youth development during adolescence by gender and parents' education level
4. To investigate the relationship between intentional self-regulation and positive youth development of adolescents

Definitions of Key Terms

Intentional Self-Regulation: Intentional self-regulation is defined as goal-directed behavior that is aimed at harmonizing an individual's personal goals with demands and resources in the environment. (Gestsdottir & Lerner, 2008)

Positive Youth Development: Development that promotes positive outcomes for young people by providing opportunities, relationships and supports to promote outcomes of competence, confidence, connection, character and caring. (Lerner et al., 2006)

Adolescent: An adolescent is a young person between ages 10 and 19 who is developing from childhood to adulthood. (World Health Organization, 2010)

Review of Related Literature

Intentional Self-Regulation Theory

Theories of intentional self-regulation typically focus on goal-directed behaviors, such as, goal selections, goal pursuit and goal management. The theoretical model of intentional self-regulation---the Selection(S), and Optimization(O) with Compensation(C), (SOC) model was developed by Baltes and colleagues (Baltes, 1997; Baltes & Baltes, 1990; Freund & Baltes, 2002). It is an action-theoretical approach to self-regulation. Action theories, such as, SOC are based on the assumption that human behavior is goal-directed. The SOC model is a comprehensive theoretical framework that discusses goal setting and goal pursuit within a life-span perspective about successful development within and across different domains of functioning (Baltes, 1997, Baltes & Baltes, 1990; Baltes & Dickson, 2001; Freund & Baltes, 2002; Wiese, Freund & Baltes, 2000). According to Baltes and Baltes (1990), across life people encounter both expected and normative events as well as unexpected and uncontrolled events. Each person must make selections from an array of individual or contextual resources available or potentially attainable in order to activate or to secure the means that will contribute to a good fit between the person and the context. Success in making these choices requires that individuals identify appropriate goals and find ways to maximize the use of their resources and minimize the effects of their deficits to reach the goals they have set (Baltes, 1997). The SOC approach emphasizes the self-regulatory processes: Elective Selection, Optimization, Compensation and Loss-based Selection.

Positive Youth Development

Positive youth development (PYD) refers to childhood and adolescents developmental experiences that provide optimal preparation for the attainment of adult potential and well-being. PYD views youth as having assets to be supported, nurtured and developed rather than as having problems to be solved and risks to be managed. Building the assets and skills of adolescents can result in both immediate and long-term positive effects on the mental and physical health, economic development and overall well-being of adolescents, their families and their communities (Patton et al., 2016). Successful negotiation of adolescence is marked not only by the avoidance of problems such as substance abuse, school failure, oppositional behavior and depression (Pittman, Irby & Ferber, 2001), but also by the successful transition into adulthood as a healthy, happy, fully functioning member of society (Furstenberg & Eccles, 2000). PYD concept is built from a framework known as the “5Cs” of positive youth development (Lerner, 2009). Developmental scientists have suggested that positive youth development encompasses psychological, behavioral and social characteristics that reflect “Five Cs”. Those “Cs” are competence, confidence, connection, character and caring. A child or adolescent who develops with Five Cs is considered to be thriving. This model of PYD emphasizes the strengths of adolescents and as a consequence enables youth to be seen as resources to be developed. The model pointed out that positive development occurs if the strengths of youth enormous potential for systematic growth are aligned systematically with positive, growth promoting resources in the ecology of youth (Benson, 2006).

Method

Research Design

Descriptive Survey method was used in this study.

Participants of the Study

There were 1110 participants in the present study. The selected participants are Grade 10 and Grade 11 students from Nay Pyi Taw, Mandalay Region, Magway Region, Yangon Region, Bago Region, Ayeyarwaddy Region, Kachin State, Shan State, Mon State and Kayar State. Selected participants consist of 458 males and 652 females.

Instruments

The first instrument is the Selection, Optimization and Compensation (SOC) Questionnaire which is developed by Geldhof et al., (2015). This instrument consists of 24 items and which are examined by four-point Likert scale to measure intentional self-regulation of adolescents by four subscales: elective selection, optimization, compensation and loss-based selection. For positive youth development variable, Positive Youth Development Inventory (PYDI) (Arnold et al., 2012) is used by four-point Likert scale. It consists of five subscales: Competence, Confidence, Connection, Character and Caring.

Data Analysis and Findings

By using the statistical analysis, the collected data are analyzed and the results are described in the following session.

Table 1 Mean and Standard Deviation of Intentional Self-Regulation of Adolescents

Variables	N	Minimum	Maximum	Mean	SD
Elective Selection	1110	6	29	18.89	2.842
Optimization	1110	6	30	18.54	2.537
Compensation	1110	6	30	18.89	3.000
Loss Based Selection	1110	6	30	18.39	2.658
Intentional Self-Regulation	1110	24	119	74.66	8.654

Intentional self-regulation constitutes elective selection, optimization, compensation and loss-based selection. In order to investigate whether there were gender differences in intentional self-regulation of adolescents the mean scores of males and females in each subscale of intentional self-regulation were analyzed in Table 2.

Table 2 Mean, Standard Deviation and Independent Samples *t*-test Results of Intentional Self-Regulation by Gender

Subscale	Gender	N	Mean	SD	<i>t</i>	<i>P</i>
Elective Selection	Male	458	18.24	3.325	-6.020***	.000
	Female	652	19.27	2.358		
Optimization	Male	458	18.51	2.830	-0.374***	.000
	Female	652	18.56	2.310		
Compensation	Male	458	18.57	3.659	-2.916**	.004
	Female	458	19.11	2.413		
Loss Based Selection	Male	458	18.45	2.832	-0.711*	.024
	Female	652	18.34	2.530		
Intentional Self-Regulation	Male	458	73.78	10.068	-2.854***	.000
	Female	652	75.28	7.449		

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

According to the Table 2, the results of independent sample *t*-test confirmed that there were significant differences in all subscales of intentional self-regulation by gender. The mean scores of female adolescents were higher than the mean scores of male adolescents in elective selection subscale, optimization subscale and compensation subscale. But, in loss-based selection subscale, the mean scores of male adolescents were higher than the female mean scores. In the intentional self-regulation of adolescents, the female adolescents were significantly higher than the male adolescents.

Table 3 Mean, Standard Deviation and Independent Samples *t*-test Results of Intentional Self-Regulation by Specialized Subject

Subscale	Specialized Subject	N	Mean	SD	<i>t</i>	<i>p</i>
Elective Selection	STAMS-1	570	18.49	3.058	-4.252***	.000
	STEAMS-1	540	19.21	2.544		
Optimization	STAMS-1	570	18.33	2.431	- 2.900*	.024
	STEAMS-1	540	18.77	2.627		
Compensation	STAMS-1	570	18.49	3.063	-4.508***	.000
	STEAMS-1	540	19.30	2.878		
Loss Based Selection	STAMS-1	570	18.34	2.598	- 0.549	.118
	STEAMS-1	540	18.43	2.722		
Intentional Self-Regulation	STAMS-1	570	73.66	8.662	-3.977***	.000
	STEAMS-1	540	75.71	8.526		

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

According to Table 3, there were significant differences in intentional self-regulation of adolescents by their specialized subjects. The mean scores of Science students were slightly higher than the mean scores of Art students in elective selection subscale, optimization subscale, compensation subscale and intentional self-regulation. But there was no significant difference in loss-based selection subscale. This result showed that intentional self-regulation of Science students would be better than Art students.

Table 4 ANOVA Results of Mean Comparison for Intentional Self-Regulation by Father’s Education Level

Subscale	Education Level	N	Mean	SD	<i>F</i>	<i>p</i>
Elective Selection	Graduate	161	18.60	2.771	1.180	.318
	High School	319	18.97	3.022		
	Middle School	358	18.93	2.935		
	Primary School	222	18.85	2.586		
	No Schooling	50	18.20	2.167		
Optimization	Graduate	161	18.81	2.834	1.571	.180
	High School	319	18.65	2.579		
	Middle School	358	18.53	2.613		
	Primary School	222	18.34	2.220		

Subscale	Education Level	N	Mean	SD	F	p
	No Schooling	50	17.98	1.857		
Compensation	Graduate	161	20.34	3.298	12.272***	.000
	High School	319	18.87	2.826		
	Middle School	358	18.46	2.954		
	Primary School	222	18.65	2.878		
	No Schooling	50	18.48	2.613		
Loss Based Selection	Graduate	161	19.27	3.416	6.376***	.000
	High School	319	18.25	2.565		
	Middle School	358	18.39	2.530		
	Primary School	222	17.93	2.348		
	No Schooling	50	18.40	2.010		
Intentional Self-Regulation	Graduate	161	77.01	9.185	4.177**	.002
	High School	319	74.73	8.519		
	Middle School	358	74.30	9.062		
	Primary School	222	73.77	7.896		
	No Schooling	50	73.06	6.601		

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

According to the above Table 4, there was a significant difference in compensation subscale, loss-based selection subscale and intentional self-regulation of adolescents by their fathers' education level at 0.01 level and 0.001 level respectively. Then, Tukey HSD multiple comparisons were conducted to find out the significant differences of fathers' education level.

Table 5 Results of Tukey HSD Multiple Comparisons for Intentional Self-Regulation by Father's Education Level

Subscale	(I) Father's Education	(J) Father's Education	Mean Difference (I-J)	p
Compensation	Graduate	High School	1.470*	.000
Compensation	Graduate	Middle School	1.877*	.000
		Primary School	1.687*	.000
		No Schooling	1.855*	.001
	Graduate	High School	1.019*	.001

Subscale	(I) Father's Education	(J) Father's Education	Mean Difference (I-J)	<i>p</i>
Loss Based Selection		Middle School	0.873*	.004
		Primary School	1.335*	.000
Intentional Self-Regulation	Graduate	Middle School	2.702*	.050
		Primary School	3.236*	.009
		No Schooling	3.946	.003

According to Table 5, Tukey HSD results, the adolescent who possesses graduate father would be higher than the lower educated father's adolescent in compensation, loss- based selection and the whole subscale of intentional self-regulation.

Table 6 ANOVA Results of Mean Comparison for Intentional Self-Regulation by Mother's Education Level

Subscale	Education Level	<i>N</i>	Mean	<i>SD</i>	<i>F</i>	<i>p</i>
Elective Selection	Graduate	161	18.55	2.974	1.240	.292
	High School	319	18.94	3.059		
	Middle School	358	18.92	2.871		
	Primary School	222	18.98	2.522		
	No Schooling	50	18.38	2.757		
Optimization	Graduate	161	19.41	3.154	6.955***	.000
	High School	319	18.45	2.521		
	Middle School	358	18.40	2.532		
	Primary School	222	18.42	2.123		
	No Schooling	50	17.92	1.924		
Compensation	Graduate	161	20.01	3.271	8.921***	.000
	High School	319	18.96	3.186		
	Middle School	358	18.63	2.977		
	Primary School	222	18.65	2.529		
	No Schooling	50	18.05	2.809		
Loss Based Selection	Graduate	161	18.46	3.138	.945	.437
	High School	319	18.58	2.796		
	Middle School	358	18.43	2.662		

Subscale	Education Level	N	Mean	SD	F	p
	Primary School	222	18.21	2.329		
	No Schooling	50	18.05	2.039		
Intentional Self-Regulation	Graduate	161	76.44	9.496	3.458**	.008
	High School	319	74.92	9.031		
	Middle School	358	74.37	8.909		
	Primary School	222	74.27	7.605		
	No Schooling	50	72.41	7.088		

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

According to the above Table 6, there was a significant difference in compensation subscale, optimization subscale and the whole subscale of intentional self-regulation of adolescents by their mother' education level at 0.01 level and 0.001 level respectively. Then, Tukey HSD multiple comparisons were conducted to find out which education level of mother were significant differences.

Table 7 Results of Tukey HSD Multiple Comparisons for Intentional Self-Regulation by Mother's Education Level

	(I) Mother's Education	(J) Mother's Education	Mean Difference (I-J)	p
Optimization	Graduate	High School	.961*	.001
		Middle School	1.016*	.000
		Primary School	.993*	.000
		No Schooling	1.490*	.000
Compensation	Graduate	High School	1.053*	.003
		Middle School	1.378*	.000
		Primary School	1.357*	.000
		No Schooling	1.959*	.000
Intentional Self-Regulation	Graduate	No Schooling	4.032*	.006

The Table 7 showed that graduate level was significant with high school level, middle school level, primary school level and no schooling level in optimization and compensation subscales. Graduate level was also significant with no schooling level in the intentional self-regulation of adolescents.

Table 8 Mean and Standard Deviation of Positive Youth Development of Adolescents

Variables	N	Minimum	Maximum	Mean	Mean %	SD
Competence	1110	25	70	44.37	79.23	5.483
Confidence	1110	13	45	27.80	77.22	3.769
Connection	1110	11	40	25.63	80.09	3.439
Character	1110	13	45	27.80	77.22	3.769
Caring	1110	13	40	25.54	79.81	3.583
Positive Youth Development	1110	84	240	150.82	71.14	16.344

Table 9 Mean, Standard Deviation and Independent Samples *t*-test Results of Positive Youth Development by Gender

	Subscale	Gender	N	Mean	SD	<i>t</i>	<i>p</i>
	Positive Youth Development	Competence	Male	458	44.83	5.891	2.374*
Female			652	44.04	5.158		
Confidence		Male	458	28.13	4.000	2.454*	.014
		Female	652	27.57	3.582		
Connection		Male	458	25.75	3.664	.968	.333
		Female	652	25.55	3.272		
Character		Male	458	28.13	4.000	2.454*	.014
		Female	652	27.57	3.582		
Caring		Male	458	25.54	3.784	.011	.991
		Female	652	25.54	3.438		

Note: * $p < 0.05$

According to the results of independent sample *t*-test analysis, the significant difference was found in competence, confidence and character scales ($p < 0.05$). However, there was no significant difference in connection and caring subscales by gender. After that, independent sample *t*-test analysis was conducted to see the differences of positive youth development by Grade. The results were reported in the following table 10.

Table 10 ANOVA Results of Mean Comparison for Positive Youth Development by Father's Education Level

		Education Level	N	Mean	SD	F	P
Positive Youth Development	Competence	Graduate	161	45.18	5.842	3.755**	.005
		High School	319	44.90	5.375		
		Middle School	358	44.23	5.754		
		Primary School	222	43.36	4.920		
		No Schooling	50	43.74	4.707		
	Confidence	Graduate	161	28.38	4.097	5.191***	.000
		High School	319	28.35	3.663		
		Middle School	358	27.57	3.922		
		Primary School	222	27.12	3.411		
		No Schooling	50	27.18	3.015		
Connection	Graduate	161	25.70	3.942	1.178	.319	
	High School	319	25.94	3.351			
	Middle School	358	25.54	3.501			
	Primary School	222	25.37	3.156			
	No Schooling	50	25.26	2.933			
Character	Graduate	161	28.38	4.097	5.191***	.000	
	High School	319	28.35	3.663			
	Middle School	358	27.57	3.922			
	Primary School	222	27.12	3.411			
	No Schooling	50	27.18	3.015			
Caring	Graduate	161	26.27	3.737	6.502***	.000	

		Education Level	N	Mean	SD	F	P
		High School	319	26.01	3.588		
		Middle School	358	25.30	3.599		
		Primary School	222	25.01	3.398		
		No Schooling	50	24.22	2.881		

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

The results of ANOVA table explained that the positive youth development of adolescents was significantly different according to their fathers' education level. Moreover, the competence, confidence, character and caring scales were also significantly different. But the connection scale was not significant by their fathers' education level.

And then, Tukey HSD multiple comparisons was conducted and the results were shown in the following Table 11.

Table 11 Results of Tukey HSD Multiple Comparisons for Positive Youth Development by Father's Education Level

Subscale	(I) Father Education	(J) Father Education	Mean difference (I-J)	p
Competence	Graduate	Primary School	1.815*	.012
	High School	Primary School	1.538*	.011
Confidence	Graduate	Primary School	1.257*	.011
	High School	Primary School	1.226*	.002
Character	Graduate	Primary School	1.257*	.011
	High School	Primary School	1.226**	.002
Caring	Graduate	Middle School	.974*	.032
		Primary School	1.264**	.005
		No Schooling	2.053**	.003
	High School	Primary School	1.000*	.011
		No Schooling	1.789**	.008

According to the results of Table 11, adolescents who possess graduate father were higher than the adolescents who possess father with primary education in competence, confidence, character and caring subscales of positive youth development.

Table 12 ANOVA Results of Mean Comparison for Positive Youth Development by Mother's Education Level

	Subscale	Education Level	N	Mean	SD	F	p
Positive Youth Development	Competence	Graduate	175	44.57	5.842	3.755**	.005
		High School	240	45.16	5.375		
		Middle School	344	44.43	5.754		
		Primary School	275	43.87	4.920		
		NoSchooling	76	42.89	4.707		
	Confidence	Graduate	175	27.77	4.097	5.191***	.000
		High School	240	28.65	3.663		
		Middle School	344	27.85	3.922		
		Primary School	275	27.33	3.411		
		No Schooling	76	26.68	3.015		
	Connection	Graduate	175	25.39	3.942	1.178	.319
		High School	240	26.16	3.351		
		Middle School	344	25.73	3.501		
		Primary School	275	25.43	3.156		
		No Schooling	76	24.78	2.933		
	Character	Graduate	175	27.77	4.097	5.191***	.000
		High School	240	28.65	3.663		
		Middle School	344	27.85	3.922		
		Primary School	275	27.33	3.411		
		No Schooling	76	26.68	3.015		
Caring	Graduate	175	25.67	3.737	6.502***	.000	
	High School	240	26.25	3.588			
	Middle School	344	25.60	3.599			
	Primary School	275	25.12	3.398			
	No Schooling	76	24.17	2.881			

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

According to the ANOVA Table 12, positive youth development of adolescents were also significant different among their mothers' education level at 0.01 level and at 0.001level respectively. Tukey HSD multiple comparisons were also conducted.

Table 13 Results of Tukey HSD Multiple Comparisons for Positive Youth Development by Mother’s Education Level

Subscale	(I) Mother Education	(J) Mother Education	Mean difference (I-J)	<i>p</i>
Competence	High School	No Schooling	2.268*	.014
Confidence	High School	Primary School	1.320**	.001
		No Schooling	1.970**	.001
Connection	High School	No Schooling	1.382*	.019
Character	High School	Primary School	1.320**	.001
		No Schooling	1.970**	.001
Caring	Graduate	No Schooling	1.503*	.018
	High School	Primary School	1.134**	.003
		No Schooling	2.083***	.000
	Middle School	No Schooling	1.434*	.013

According to the results of Table 13, adolescents who possess graduate and high school mothers were higher than the adolescents who possess primary education schooling mothers and no schooling mothers in competence, confidence, connection, character and caring subscales of positive youth development.

Relationship between Intentional Self-Regulation and Positive Youth Development of Adolescents

First of all, as one of the objectives of the study, the correlational analysis was used to find out whether there is a relationship between intentional self-regulation and positive youth development of adolescents. The result was shown in the following table 14.

Table 14 Correlation between Intentional Self-Regulation and Positive Youth Development of Adolescents

Variables	Intentional Self-Regulation	Positive Youth Development
Intentional Self-Regulation	1	.635**

**Correlation is significant at the 0.01 level.

According to the Table 14, the result revealed that there was a significant relationship between intentional self-regulation and positive youth development because the correlation coefficient was statistically significant ($r = .635, p < 0.01$). So, it can be said that intentional self-regulation is positively correlated with their positive youth development. In other words, this means that if the adolescents’ intentional self-regulation is higher, their positive youth development will be higher.

Discussion and Suggestions

In this study, the significant differences in intentional self-regulation and positive youth development of adolescents through the socio-demographic variables were examined. The intentional self-regulation of adolescents was examined by gender, specialized subject and parents' education level. According to the results, there were significant differences by gender, specialized subject and parents' education level in intentional self-regulation. By independent sample *t* - test results, the female adolescents were significantly higher than the male adolescents in elective selection, optimization and compensation subscales of intentional self-regulation by gender. However, significant differences were not found in loss-based selection subscale by gender. And then, by independent sample *t* test results, the science specialized students were significantly higher than the art specialized students in all subscales of intentional self-regulation. Moreover, ANOVA results showed that the adolescents of higher education level parents were significantly higher than the adolescents of lower education level parents in intentional self-regulation.

In positive youth development of adolescents, there were significant differences by gender, father's education level and mother's education level. According to the results of independent sample *t*-test analysis, the significant difference was found in competence, confidence, character scales by gender. However, there was no significant difference in connection and caring subscales by gender. The results of ANOVA explained that the positive youth development of adolescents was significantly different according to their fathers' education level and their mothers' education level at 0.01level and at 0.001level respectively. Moreover, there was a positive correlation between intentional self-regulation and positive youth development of adolescents. The high quality of intentional self-regulation can cause the well positive youth development of adolescents. Thus, the findings of this study suggest that the adolescents should be cultivated to be well self-regulated students in enhancing the positive youth development of adolescents.

Acknowledgements

We would like to acknowledge all of the people who supported throughout this process. First and foremost, we would like to thank to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-Rector, Yangon University of Education), Dr. Nyo Nyo Lwin (Pro-Rector, Yangon University of Education) and Dr. Khin Khin Oo (Pro-Rector, Yangon University of Education) for their permission to conduct this research. Then, we wish to express our gratitude to Dr. Khin Hnin Nwe (Professor, Head of Department, Department of Educational Psychology, Yangon University of Education) for her guidance, suggestions and supports throughout this study. Moreover, we would also like to thank all the participants for their active participation in collecting the required data.

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