

A STUDY ON MOTIVATIONAL BELIEFS AND SELF-REGULATED LEARNING OF MIDDLE SCHOOL STUDENTS

Khin Win Shwe¹, Tin Mar Naing²

Abstract

The main objective of the study was to study motivational beliefs and self-regulated learning of middle school students. The explanatory sequential design was used in this study. A total of 800 middle school students (Grade 6 students and Grade 9 students) participated in the quantitative study. The instruments used in this study were Motivational Beliefs Scale with 22 items to examine motivational beliefs and Self-Regulated Learning Strategies Scale with 22 items to assess self-regulated learning of middle school students. According to findings, there were significant differences in self-efficacy subscale in terms of gender and age. Additionally, there were also significant differences in intrinsic value subscale by gender and age. Finally, no significant differences were not found in test-anxiety subscale in terms of gender and age. Then, there were significant differences in total self-regulated learning by gender and age. There were positive and moderate relationships between self-efficacy, intrinsic value and self-regulated learning of middle school students. Conversely, test anxiety was negatively related to self-regulated learning of middle school students. Besides, self-efficacy was the strongest predictor of self-regulated learning and intrinsic value was the second strongest but test anxiety was the weakest and negative predictor of self-regulated learning. Finally, a qualitative follow-up study was conducted by semi-structured interview. Moreover, the information obtained from qualitative study prominently supported the findings of quantitative study. These findings will be valuable for teachers, aiding them in comprehending their students better and enabling adjustments to support the attainment of educational objectives.

Keywords: Motivational Beliefs, Self-Efficacy, Intrinsic Value, Test Anxiety, Self-Regulated Learning

Introduction

Nowadays, the capacities to learn effectively and adapt to new challenges is more important. Traditional models of learning focus only on the delivery of information from teacher to student, but research has shown that learners who take an active role in their own learning process tend to be more successful in acquiring and retaining knowledge (Ongowo and Hungi, 2014). The approaches that have gained significant attention in recent years are motivational beliefs and self-regulated learning (SRL) (Bong, & Choi, 2000).

Motivational beliefs are significant as they shape individuals' goal-setting, effort, resilience, adaptability, self-confidence, and overall success in various domains (Abdullah, 2016). Developing and nurturing positive motivational beliefs can lead to enhanced performance, personal growth, and well-being. These beliefs are the internalized perceptions and expectations individuals hold about their ability to achieve goals, overcome obstacles, and exert effort to accomplish desired outcomes.

Self-regulated learning is a vital aspect of learning and achievement in academic contexts. It refers to the ability to take control of one's own learning process through planning, monitoring, and adapting strategies to achieve academic or learning goals (Zimmerman, 1989). It involves

¹ Department of Educational Studies, Kyaukphyu Education Degree College

² Department of Educational Psychology, Yangon University of Education

being aware of one's strengths and weaknesses, setting goals, managing time effectively, monitoring progress, and employing effective learning strategies (Kuyper et al., 2000).

Motivational beliefs play a vital role in shaping an individual's self-regulated learning behaviors, while self-regulated learning, in turn, influences and reinforces motivational beliefs (Pintrich et al., 1993). Fostering positive motivational beliefs and developing self-regulated learning skills can create a powerful synergy that enhances learning outcomes, persistence, and motivation in educational and personal settings. Therefore, this research will study the motivational beliefs and self-regulated learning of middle school students. This study will contribute for students' wellness, enjoyment, persistence and goal in their student-life. They will be overcome the challenges and possess positive outcomes in school.

Purpose of the Study

The main objective of the study was to investigate motivational beliefs and self-regulated learning of middle school students in Myanmar.

The specific objectives of this study are:

To examine motivational beliefs of middle school students by gender and age

To examine self-regulated learning of middle school students by gender and age

To find out the relationships between motivational beliefs and self-regulated learning of middle school students

To find out whether motivational beliefs predict self-regulated learning of middle school students

To explore how motivational beliefs related with self-regulated learning of middle school students in qualitative study

Definitions of Key Terms

Motivational beliefs. As used in this study, motivational beliefs are defined in terms of self-efficacy, intrinsic value, and test anxiety.

Self-efficacy. Self-efficacy means a measurement of the extent to which the learner recognizes his ability to master a task. It involves the learner's evaluation of his ability to complete a task and confidence in his skills to perform the task. (Pintrich & De Groot, 1990).

Intrinsic value. Intrinsic value means the value element of motivational belief, which consists of students' goals for the task and their beliefs about the importance of, interest in, and value of the task. (Pintrich & De Groot, 1990).

Test anxiety. Anxiety means the affective element of motivational belief, which involves students' emotional reactions to the tasks and catch on students' worry and concern over taking exams. (Pintrich & De Groot, 1990).

Self-regulated learning. Self-regulated learning is an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment (Pintrich, 2000).

Review of Related Literature

Motivation is frequently characterized as a response to internally or externally induced conditions or events (Aldridge & Rowntree, 2021). Motivational beliefs pertain to students' perspectives, thoughts, and value assessments regarding objects, events, or the subject matter (Boekaerts, 1997). Students possessing appropriate motivational beliefs have the potential to achieve academic excellence. The theoretical structure of motivational beliefs, crucial in the learning organization process, is derived from a modification of the general expectation-value model of motivation. Proponents of this model, such as Wigfield and Eccles (2000), propose that students' beliefs regarding their competence in performing an activity and the significance they attribute to the activity may impact their individual preferences, their persistence in engaging with the activity, and their overall performance. The expectation-value model of motivation outlines three components related to self-regulated learning strategies. The initial element is the expectation known as self-efficacy, encompassing learners' convictions about their ability to perform a task. The second component is the value component, encompassing learner objectives and their beliefs about the task's significance. This is articulated through various concepts such as learner objectives, intrinsic orientation, the importance attached to the task, and intrinsic values. The third component is the affective aspect, involving learners' emotional responses to the task (Pintrich & De Groot, 1990).

Numerous studies examining students' capacity to strategize, structure, and contemplate their educational progress and performance have employed the framework of self-regulated learning. Self-regulated learning involves five fundamental learning principles: cognitive, metacognitive, behavioral, motivational, and affective aspects (Panadero, 2017). It also includes two dimensions such as cognitive strategy use and self-regulation. Cognitive strategy use plays a crucial role in human cognition, facilitating effective information processing and problem-solving. Cognitive strategy use encompasses a wide range of mental techniques and processes that enable individuals to process, retain, and manipulate information effectively (Cromley, 2023). Self-regulation serves as both the adhesive and driving force that enables students to oversee their strategic learning at both a broad and immediate level. On a global scale, this aspect involves employing a methodical approach to learning, engaging in macro-level time management (spanning weeks, months, and years), utilizing an instructional approach to seeking assistance, and effectively managing motivation for learning (McClelland et al., 2018).

Method

Participants of the Study

The participants for this study were chosen by using random sampling technique. 800 Grade 6 and Grade 9 students (400 male students and 400 female students) were selected from 8 schools in Yangon Region and Rakhine State.

Research Method

The Explanatory sequential design of mixed method (quantitative and qualitative) was used in this study.

Instrumentation

Motivational Beliefs Scale

This motivational beliefs scale initially developed by Pintrich and De Groot (1990) and updated by Zurina et al. (2022) was used in this study. It contained 24 items and also had 5-point Likert scale range from “strongly disagree” to “strongly agree”. It had three subscales namely “self-efficacy,” “intrinsic value” and “test anxiety”. The first subscale “self-efficacy” consists of 9 items. The second subscale “intrinsic value” contains 9 items. The third subscale “test anxiety” consists of 4 items. Each item in this questionnaire is to be rated on the 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree).

Self-regulated Learning Strategies Scale

This self-regulated learning strategies scale initially developed by Pintrich and De Groot (1990) and updated by Zurina et al. (2022) was used in this study. It contained 22 items and also had 5-point Likert scale range from “strongly disagree” to “strongly agree”. It had two subscales namely “cognitive strategy use” and “self-regulation”. The first subscale “cognitive strategy use” consists of 13 items. The second subscale “self-regulation” contains 9 items. Each item in this questionnaire is to be rated on the 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree).

Research Findings

Comparison of Students’ Motivational Beliefs by Gender

In this research, Table 1 presented the means and standard deviations of motivational beliefs for both male and female students. Descriptive analysis indicated that the mean scores for all three motivational beliefs (self-efficacy, intrinsic value, and test anxiety) were higher for female students compared to male students. This suggested that, in this study, female students exhibited a greater enjoyment of learning, a belief in their ability to understand and grasp the material taught in classes, and a perception of learning as personally valuable, interesting, and significant. Additionally, female students in this study tended to experience higher levels of test anxiety in relation to learning and classroom performance compared to male students.

Table 1 Means, Standard Deviations and Independent Samples *t*-test Results of Students’ Motivational Beliefs by Gender

Variable	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Self-efficacy	Male	400	35.40	3.939	-2.121*	798	.034
	Female	400	35.99	3.893			
Intrinsic Value	Male	400	38.06	3.686	-4.176***	792	.000
	Female	400	39.10	3.369			
Test anxiety	Male	400	12.04	4.137	-1.396	798	.163
	Female	400	12.45	4.219			

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

The independent samples *t* -test was used to examine whether gender differences were significant or not in three motivational beliefs (see Table 1). According to the Table 1, the results of independent samples *t*-test confirmed that there were significant gender differences for self-efficacy ($t(798) = -2.121$, $p < .05$) and for intrinsic value ($t(792) = -4.176$, $p < .001$). However,

there was no significant gender difference for test anxiety. It can be concluded that female students had higher self-efficacy and intrinsic value than male students.

Comparison of Students' Motivational Beliefs by Age

To investigate variations in motivational beliefs among middle school students based on age, the students were categorized into three groups: "12-13 years," "14-15 years," and "16-17 years." The outcomes revealed that the mean values for students aged 12-13 years were the highest across in all subscales of motivational beliefs, whereas those aged 16-17 years in exhibited the lowest mean value (refer to Table 2).

Table 2 Means, Standard Deviations and ANOVA Results of Students' Motivational Beliefs by Age

Variable	Age	N	M	SD	F	p
Self-efficacy	12-13 years	341	36.31	4.186	9.699***	.000
	14-15 years	359	35.44	3.709		
	16-17 years	100	34.52	3.386		
Intrinsic Value	12-13 years	341	38.79	3.925	3.353*	.035
	14-15 years	359	38.60	3.585		
	16-17 years	100	37.75	3.554		
Test anxiety	12-13 years	341	11.89	3.465	2.053	.129
	14-15 years	359	12.49	3.567		
	16-17 years	100	12.52	4.142		

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

Then, one-way analysis of variance was conducted to find out the significant differences of motivational beliefs by age. ANOVA results showed that there were significant differences in students' self-efficacy ($F(2,797) = 9.699$, $p < .001$), intrinsic value ($F(2,797) = 3.353$, $p < .05$) (see Table 2).

In order to make more detailed investigation, Tukey HSD test was calculated (see Table 3). Post hoc multiple comparison results indicated that students who were 12-13 years had higher self-efficacy than those who were 14-15 years and 16-17 years. In addition, students who were 12-13 years had greater intrinsic value than who were 16-17 years.

Table 3 Results of Tukey HSD Multiple Comparison for Students' Motivational Beliefs by Age

Categories	(I)Age	(J)Age	Mean Difference(I-J)	p
Self-efficacy	12-13 years	14-15 years	.876**	.008
		16-17 years	1.794***	.000
Intrinsic Value	12-13 years	16-17 years	1.045*	.027

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

Comparison of Students' Self-Regulated Learning by Gender

In this research, Table 4 provides the means and standard deviations of self-regulated learning for both male and female students. The findings indicated that the mean scores of female students exceeded those of male students across all subscales of self-regulated learning and in total self-regulated learning.

Table 4 Means, Standard Deviations and Independent Samples *t*-test Results of Students' Self-Regulated Learning by Gender

Variable	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Cognitive strategy use	Male	400	51.75	5.424	-2.935**	798	.003
	Female	400	52.87	5.369			
Self-regulation	Male	400	34.92	4.566	-1.161	798	.246
	Female	400	35.28	4.130			
Total Self-regulated learning	Male	400	86.66	9.084	-2.378*	794	.018
	Female	400	88.14	8.477			

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

The independent samples *t*-test was used to examine whether gender differences were significant or not in self-regulated learning (see Table 4). According to the Table 4, the results of independent samples *t*-test confirmed that there was a significant gender difference for total self-regulated learning ($t(794) = -2.378$, $p < .05$). And then, there was a significant gender difference for cognitive strategy use ($t(798) = -2.935$, $p < .01$). However, there was no significant gender difference for self-regulation. Female students had higher in cognitive strategy use subscale and total self-regulated learning than male students. It can be concluded that female students can study by their own ways better than male students.

Comparison of Students' Self-Regulated Learning by Age

To find out the differences in middle school students' self-regulated learning between ages, students were grouped under three groups as "12-13 years, 14-15 years and 16-17 years". According to the results, the mean values of students who were 12-13 years were the highest and in all subscales of self-regulated learning while those who were 16-17 years had the lowest mean value (see Table 5).

Table 5 Means, Standard Deviations and ANOVA Results of Students' Self-Regulated Learning by Age

Variable	Age	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
Cognitive strategy use	12-13 years	341	90.02	8.656	29.955***	.000
	14-15 years	359	85.85	8.203		
	16-17 years	100	84.03	9.065		
Self-regulation	12-13 years	341	53.56	5.500	17.740***	.000
	14-15 years	359	51.57	5.010		
	16-17 years	100	50.66	5.703		
Total Self-regulated learning	12-13 years	341	36.46	4.101	33.382***	.000
	14-15 years	359	34.28	4.184		
	16-17 years	100	33.37	4.487		

*** $p < .001$.

Then, one-way analysis of variance was conducted to find out the significant differences of motivational beliefs by age. ANOVA results showed that there were significance differences in total self-regulated learning ($F(2,797) = 33.382$, $p < .001$), cognitive strategy use ($F(2,797) = 29.955$, $p < .001$) and self-regulation ($F(2,797) = 17.740$, $p < .001$) (see Table 5).

For a more comprehensive examination, Tukey HSD test was conducted, and the results are presented in Table 6. Post hoc multiple comparison outcomes revealed that students aged 12-13 years exhibited higher cognitive strategy use and self-regulation compared to those aged 14-15 years and 16-17 years. Additionally, students aged 12-13 years demonstrated greater self-regulated learning than those aged 14-15 years and 16-17 years.

Table 6 Results of Tukey HSD Multiple Comparison for Students' Self-Regulated Learning by Age

Categories	(I)Age	(J)Age	Mean Difference(I-J)	<i>p</i>
Cognitive strategy use	12-13 years	14-15 years	4.168***	.000
		16-17 years	5.991***	.000
Self-regulation	12-13 years	14-15 years	1.989***	.000
		16-17 years	2.900***	.000
Total Self-regulated learning	12-13 years	14-15 years	2.179***	.000
		16-17 years	3.090***	.000

*** $p < .001$.

The Relationship Between Motivational Beliefs and Self-Regulated Learning of Middle School Students

In order to find out whether the relationships between motivational beliefs and self-regulated learning of middle school students, the Pearson product moment correlation analysis was used and the results from this analysis were indicated in the following table (see Table 7).

Table 7 Relationship Between Motivational Beliefs and Self-Regulated Learning of Middle School Students

Variable	SE	IV	TA	SRL	CSU	SR
SE	-	.435***	-.100**	.563***	.541***	.465***
IV		-	.022	.510***	.526***	.377***
TA			-	-.134***	-.087*	-.163***
SRL				-	.922***	.876***
CSU					-	.620***
SR						-

Note.

SE =Self-efficacy

IV =Intrinsic value

TA =Test anxiety

SRL =Self-regulated learning

CSU =Cognitive strategy use

SR =Self-regulation

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

According to the Table 7, there were significant relationships between motivational beliefs and self-regulated learning of middle school students. In more details, the self-efficacy subscale of motivational beliefs had a significant positive relationship with total self-regulated learning at ($r=.563$, $p < .001$) and with its respective subscales, cognitive strategy use at ($r=.541$, $p < .001$) and self-regulation ($r=.465$, $p < .001$). Moreover, the intrinsic value subscale was significantly positively correlated with total self-regulated learning at ($r=.510$, $p < .001$) and with

its respective subscales, cognitive strategy use at ($r=.526, p < .001$) and self-regulation ($r=.377, p < .001$).

However, test anxiety subscale had a significant negative relationship with total self-regulated learning at ($r=-.134, p < .001$) and with its respective subscales, cognitive strategy use at ($r=-.087, p < .001$) and self-regulation ($r=-.163, p < .001$). According to the strength of correlations, two subscales of motivational beliefs, self-efficacy and intrinsic value, had moderately positive correlations with total self-regulated learning but test anxiety subscale of motivational beliefs was low negatively correlated with total self-regulated learning.

Regression Analysis for the Prediction of Self-Regulated Learning

To find the prediction of motivational beliefs on self-regulated learning, analysis of simultaneous multiple regression was applied. Subscales of motivational beliefs, including self-efficacy, intrinsic value and test anxiety, were independent variables. Middle school students' self-regulated learning served as dependent variable (see Table 8).

Table 8 Simultaneous Multiple Regression Analysis Summary for Motivational Beliefs Versus Self-Regulated Learning of Middle School Students

Variable	<i>B</i>	β	<i>t</i>	<i>R</i>	<i>R</i> ²	Adj <i>R</i> ²	<i>F</i>
Self-regulated learning	25.461		8.613***	.643	.413	.411	186.883***
Self-efficacy	.913	.407	13.380***				
Intrinsic value	.829	.335	11.093***				
Test anxiety	-.212	-.101	-3.683***				

*** $p < .001$.

According to Table 8, the results indicated how much self-efficacy, intrinsic value and test anxiety subscales of motivational beliefs explained on self-regulated learning of middle school students. The results of multiple regression model stated that subscales of motivational beliefs significantly predicted on self-regulated learning ($F=186.883, p < .001$) and explained for 41.1 % (Adjusted R^2) of the variance in self-regulated learning.

According to the results, three subscales of motivational beliefs significantly predicted on self-regulated learning: self-efficacy ($B=.913$), intrinsic value ($B=.829$) and test anxiety ($B=-.212$). Specifically, the results confirmed that self-efficacy was the strongest predictor of self-regulated learning and intrinsic value was the second strongest. However, test anxiety subscale of motivational beliefs was the weakest and negative predictor of self-regulated learning.

Finally, based on the findings of multiple regression analysis, the diagram was drawn describing how self-efficacy, intrinsic value and test anxiety subscales of motivational beliefs significantly affected their levels of self-regulated learning (see Figure 1). Then, the resultant model can therefore be defined as in the following equation

$$\text{SRL} = 25.461 + .913\text{SE} + .829\text{IV} - .212\text{TA}$$

SRL=Self-regulated learning

SE=Self-efficacy

IV=Intrinsic value

TA=Test anxiety

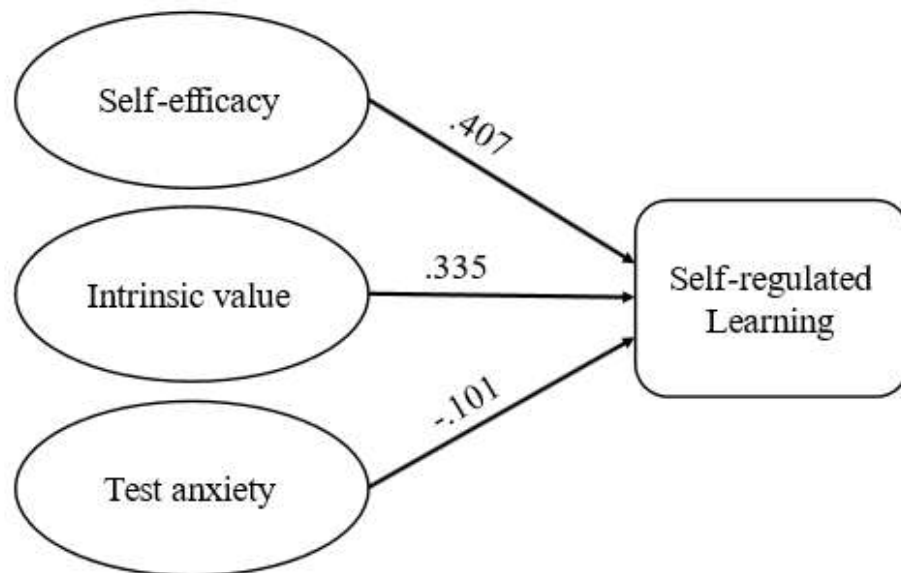


Figure 1 Predicting Power of Motivational Beliefs on Self-Regulated Learning

Qualitative Study

Qualitative study was conducted to provide further insights into the findings of the quantitative study. Subsequently, follow up semi-structured interview was performed with 20 middle school students. Participants were asked five main open-ended 5 core questions, including academic efficacy in their class, strategies for understanding lessons, strategies for coping with challenging lessons, interest in grade-level lessons and confidence in exam performance based on literature. The summary findings of qualitative results were briefly described in the following Figure.

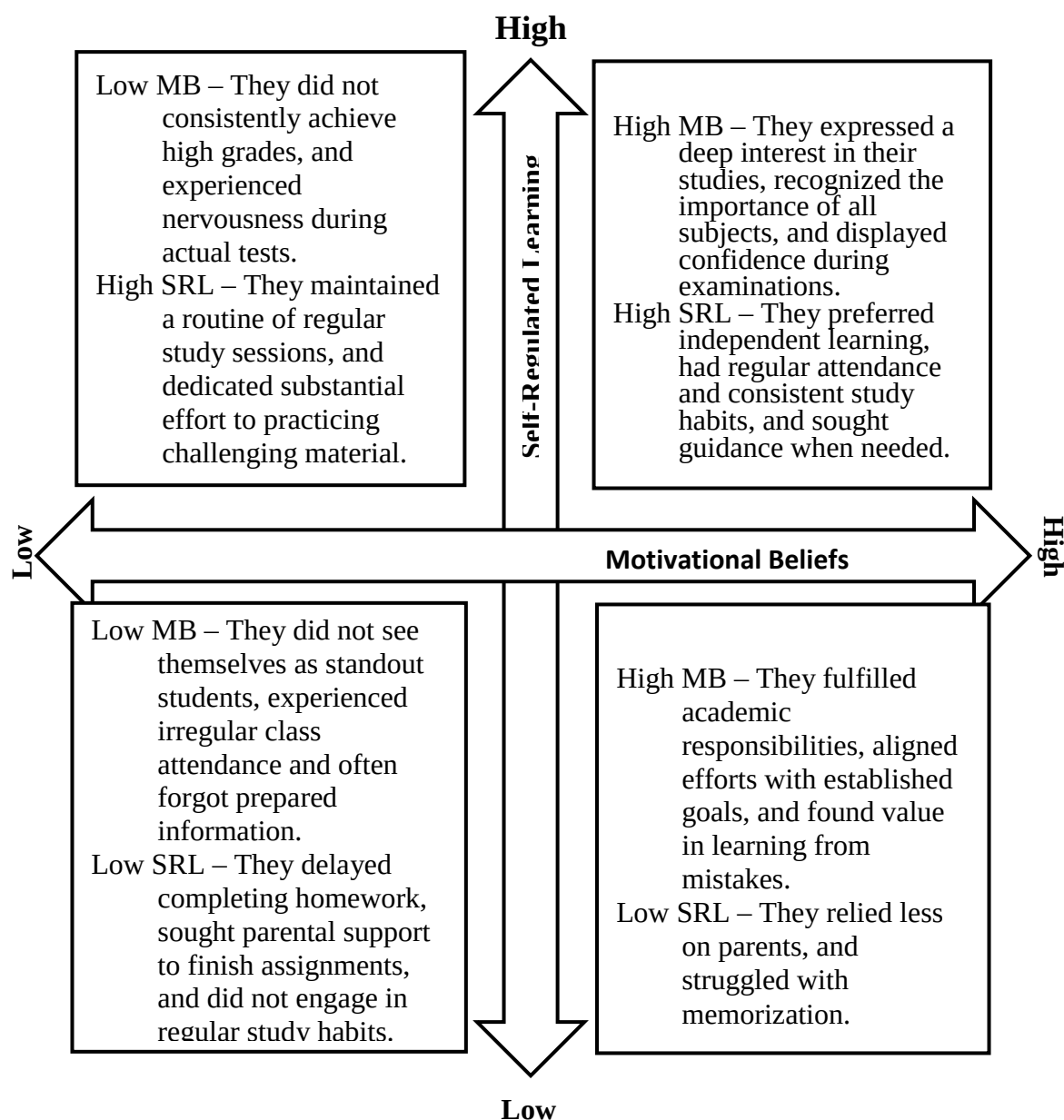


Figure 2 Summary Results of Motivational Beliefs and Self-Regulated Learning of Middle School Students

Conclusion and Discussion

The primary objective of this study was to investigate motivational beliefs and self-regulated learning of middle school students.

Differences in motivational beliefs by gender. The results suggested that there were significant differences in all subscales of motivational beliefs in terms of gender. Abdullah (2016) found that students' self-efficacy differed according to gender. For this study, in self-efficacy, intrinsic value, test anxiety, the results revealed that the mean scores of female students were greater than those of male students. For intrinsic value, females' self-efficacy mean scores and intrinsic value mean scores were higher than those of males. This finding was consistent with the finding of Abdullah (2016), Htin Mar Zaw (2015), Mahyuddin et al. (2006), Tin Zar Aung (2015) and Özkan (2003). This finding was inconsistent with Ryan and Connell (1989) and Harper and Marshall (1991) who found that male have higher self-efficacy and intrinsic value

than females. The result of this study might be because girls thought more deeply and more intense about everything and they had more preparations for learning so females were more confident about themselves and faced the strange situations effectively learning and confidence with their ability and their appearance. For test anxiety, female students were also higher than male students. And this finding was consistent with the finding of Chapell et al. (2005), and Özkan (2003) who found that female students' test anxiety was higher than male students. This finding was inconsistent with the finding of Htin Mar Zaw (2015) who found that male students' test anxiety was higher than female students. Female students felt more intense with exams and test anxiety symptoms and higher levels of emotionality and more worried and anxious.

Differences in self-regulated learning by age. The results indicated that there were significant differences in students' self-efficacy and intrinsic value in terms of age. Findings revealed that students who were 12-13 years had higher self-efficacy than those who were 14-15 years and 16-17 years. In addition, students who were 12-13 years had greater intrinsic value than who were 16-17 years. The findings were inconsistent with previous studies of Tin Zar Aung (2015) found that there were no significant differences in age of all motivational beliefs. Generally, it could reasonably be concluded that 12-13 years of students had higher self-efficacy belief and intrinsic value than 14-15 years and 16-17 year students. As the means indicate, most of 12-13 years students were obedient to their parents' and teachers' guidelines. When grade 14-15 years and 16-17 years transferred to adolescence level, they were distracted by their personal and environmental factors. This finding was consistent with the finding of Kivinen (2003) who found that the youngest students had as higher self-efficacy and intrinsic value. This finding was inconsistent with the finding of Khin Thu Thu Win (2013) who found that the students over 17 have low self-efficacy and intrinsic goal than the students over 17. Pintrich (1999) found that earlier adolescents were obedient to their parents' and teachers' guidelines and more sensitive to regulate their learning and later adolescents were distracted by their personal and environmental factors.

Differences in self-regulated learning by gender. The results of independent samples *t*-test showed that there was a significant gender difference for total self-regulated learning and cognitive strategy. Abdullah (2016) found that students' self-regulated learning differed according to gender. The results showed that female students use subscale of cognitive strategy use and total self-regulated learning than male students. It could be concluded that female students can study by their own ways better than male students. Similarly, Abdullah (2016) found that female and male students were different in self-regulated learning. Female students were higher self-regulated learning as they are more efficacious in managing their own learning activities (Abdullah, 2016). Successful tasks-completion experiences and effective usage of strategies could enhance male self-regulated learning (Schunk & Pajeres, 2002). It could be seen that females were more efficacious in managing their own learning activities and also used specific self-regulated learning strategies and took immediate action doing homework and often participated in activities. One of the main reasons for male students had lower in cognitive strategy and self-regulated learning is their addiction in internet. They played games at home and outside by using their mobile phones while females students were more exert control over internet and games. Some studies suggested that males have a stronger motivation to play (Chou

& Tsai, 2007) and picked up more positive thoughts from playing digital games, and thus, games are regarded as a “male toy” (Horzum, 2011).

Differences in self-regulated learning by age. The results indicated that there were significance differences in total self-regulated learning, cognitive strategy use and self-regulation. The results indicated that students who were 12-13 years had higher cognitive strategy use and self-regulation than those who were 14-15 years and 16-17 years. In addition, students who were 12-13 years had greater self-regulated learning than who were 14-15 years and 16-17 years. This finding was consistent with the findings of Effeney et al. (2013) and Kopp (1982). Later adolescence, which was one of the important stages of development, was associated with many emotional and behavioral difficulties (Çelik et al., 2008). During later adolescence, despite gaining increased cognitive competence, students often experienced a decline in both motivation and self-regulation (Pintrich & Zusho, 2002). Young students were academically regulated in their learning (Purdie et al., 2004). Cognitive abilities and self-regulation skills might be more advanced in early adolescence (12-13 years) as individuals go through significant cognitive and emotional development during this period. Educational programs at this age might emphasize skill-building and provide more guidance and support. However, the above educators noticed that according to developmental stages, 14-15 years and 16-17 years had many factors such as peer influence, family support, and exposed to diverse experiences which could distract the development of cognitive strategies and self-regulation. In his research, Effeney et al. (2011) emphasized that motivation tended to decline as individuals grow older, leading to adverse impacts on self-regulation, particularly during the adolescent phase.

Moreover, to find out the relationship between motivational beliefs and self-regulated learning of middle school students, Pearson Product Moment Correlation was analyzed. It was found that there was a positive correlation between students' self-efficacy and self-regulated learning. The highest correlation to self-regulated learning for this study was found to be students' self-efficacy beliefs. These results suggested that higher beliefs about self-efficacy might lead to higher levels of performance. In an achievement context, self-efficacy included students' confidence in their cognitive skills to learn and performed the academic course work (Pintrich, 1999). This result was consistent with previous studies of Abdullah (2016), Ocak and Yamaç (2013), Özkan (2003) and Zurina et al. (2022). The findings of Abdullah (2016) showed that self-efficacy and intrinsic value were positively related to students' self-regulated learning.

A negative correlation was found between students' test anxiety and self-regulated learning. This result was consistent with previous studies of Abdullah (2016), Ocak and Yamaç (2013), Özkan (2003) and Zurina et al. (2022). This finding supported previous research indicating that test anxiety interfered with self-regulated learning. Moline and Borkivec (1994) and Busari and Uwakwe (2001) had suggested that high level of anxiety might become poor learning outcomes in school.

Finally, a regression analysis was conducted to ascertain the amount of variance in students' self-regulated learning scores explained by the variable of motivational beliefs. The regression analysis indicated that 41% of the variance in self-regulated learning was explained by the students' motivational beliefs. Specifically, the results confirmed that self-efficacy was the strongest predictor of self-regulated learning and intrinsic value was the second strongest. This

result was consistent with previous studies of Gall (1985), Pintrich and De Groot (1990) and Zimmerman (1989). Self-efficacy is deemed as the key motivational beliefs affecting self-regulated learning (Zimmerman, 1989). However, test anxiety subscale of motivational beliefs was the weakest and negative predictor of self-regulated learning. This result consistent with previous studies of Gall (1985), Pintrich and De Groot (1990) and Zimmerman (1989). Test Anxiety could be a debilitating factor, which caused distraction and disorientation (Gall,1985).

The study employed semi-structured interviews to explore the relationship between motivational beliefs and self-regulated learning in middle school students. Findings revealed that students with high motivational beliefs tended to exhibit high levels of self-regulated learning. These students demonstrated effective communication skills, confidence in mastering subjects, and a proactive approach to learning. They preferred challenging lessons, sought guidance when needed, and balanced study with leisure activities. Their intrinsic motivation drove them to pursue self-driven learning, finding genuine joy in studying. They maintained a clear separation between work and relaxation, engaged in leisure activities, and valued acquiring knowledge through reading. Regular study sessions, attentive note-taking, and proactive exam preparation were integral to their structured learning approach. Despite setbacks, they embraced results and maintained confidence in their abilities. Overall, these students described their learning process as systematic and derived satisfaction from their academic achievements.

The interview results revealed a correlation between low motivational beliefs and low self-regulated learning among middle school students. Those with low motivational beliefs struggled with feelings of inferiority when presenting in class, preferred leisure activities with friends over revisiting challenging lessons, had difficulty maintaining focus, lacked resilience with new material, avoided complex math problems, and lacked familial support. They found reading easier than math, leading them to focus on simpler parts of lessons. As exams neared, they intensified their efforts but still struggled with persistent worry, lack of confidence, and difficulty recalling prepared information during tests.

Recommendations

The following strongly recommendations can be made based on the findings of this study;

- Students should learn and practice to improve motivational beliefs and self-regulated learning to have consistent study habits and effort to practicing challenging material.
- Teacher educators should help students to maintain and develop their motivational beliefs and self-regulated learning by tutoring, counseling, or access to resources tailored to address individual learning needs.
- Teacher educators should try to improve students' self-efficacy as well as intrinsic value and reduce their anxiety level and should give more autonomy, freedom and choices during the learning processes.
- Teacher educators should provide them with opportunities to self-regulate in learning and reduce procrastination and provide guidance on effective time management and collaborative skills and help students create schedules, prioritize tasks, and develop routines
- Teacher educators should conduct and prioritize the importance of learning itself rather than being excessively focused on exams during the teaching and learning processes, aiming to reduce students' anxieties related to examinations.

Limitations and Suggestions for Future Research

There are some research limitations and several extended studies that can be further undertaken. Firstly, in this research, results of this study were limited to middle school students in Yangon Region and Rakhine State. Therefore, sample of this study did not represent all students of Myanmar as a whole. Thus, future studies will need to collect data from different regions and states of Myanmar to be more generalized, reliable and valid and to be representative for all student in Myanmar across ethnicities, cultures and socio- economic backgrounds. Secondly, the sample used in this research was Grade 6 and Grade 9 middle school students from 8 schools in Yangon Region and Rakhine State. Thus, the sample should be selected from others high schools to higher education level, such as universities with different age groups. Thirdly, demographic factors such as parents' job, parent's education level, socioeconomic status, locality and birth order should be considered in future research. Finally, this study focused the explanatory sequential design of mixed method (quantitative and qualitative studies), only qualitative research should be studied to investigate deeply about motivational beliefs and self-regulated learning of students.

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.

References

- Abdullah, M. N. L. Y. (2016). Interaction Effects of Gender and Motivational Beliefs on Self-Regulated Learning: A Study at ICT-Integrated Schools. *Malaysian Journal of learning and Instruction*, 13(1), 25-41.
- Boekaerts, M. (1997). Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students. *Learning and instruction*, 7(2), 161-186.
- Bong, M. (2001). Role of self-efficacy and task-value in predicting college students' course performance and future enrollment intentions. *Contemporary educational psychology*, 26(4), 553-570.
- Busari, A. O., & Uwakwe, C. B. U. (2001). The effect of stress inoculation training technique in the management of worry as a self-handicapping strategy in intellectual performance. *Nigerian Journal of Emotional Psychology and Sport Ethics*, 3, 6-12.
- Çelik, N., Çevik, U., Çelik, A., & Kucukomeroglu, B. (2008). Determination of indoor radon and soil radioactivity levels in Giresun, Turkey. *Journal of environmental radioactivity*, 99(8), 1349-1354.
- Chapell, M. S., Blanding, Z. B., Silverstein, M. E., Takahashi, M., Newman, B., Gubi, A., & McCann, N. (2005). Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology*, 97(2), 268-274.
- Chou, C., & Tsai, M. J. (2007). Gender differences in Taiwan high school students' computer game playing. *Computers in human behavior*, 23(1), 812-824.
- Cromley, J. G. (2023). Metacognition, cognitive strategy instruction, and reading in adult literacy. In *Review of Adult Learning and Literacy, Volume 5* (pp. 187-204). Routledge.
- Gall, S. N.-L. (1985). Chapter 2: Help-Seeking Behavior in Learning. *Review of Research in Education*, 12(1), 55-90. <https://doi.org/10.3102/0091732X012001055>
- Effeney, G., Carroll, A., & Bahr, N. (2013). Self-Regulated Learning: Key strategies and their sources in a sample of adolescent males. *Australian Journal of Educational & Developmental Psychology*, 13.
- Harper, J. F., & Marshall, E. (1991). Adolescents' problems and their relationship to self-esteem. *Adolescence*, 26(104), 799-808.

- Horzum, M. B. (2011). Examining computer game addiction level of primary school students in terms of different variables. *Egitim ve Bilim*, 36(159), 56-68.
- Htin Mar Zaw (2015). *An Investigation of the Impact of English Language Anxiety, Test Anxiety and Self-efficacy upon English Learning Achievement of Grade 10 Students* Unpublished MEd thesis, Yangon University of Education.
- Khin Thu Thu Win (2013). *An Exploratory Study of Motivated Strategies for Learning of Student Teachers* Unpublished MEd thesis, Yangon University of Education.
- Kivinen, K. (2003). *Assessing motivation and the use of learning strategies by secondary students in three international schools*. Tampere University Press.
- Kopp, C. B. (1982). Antecedents of self-regulation: A developmental perspective. *Developmental Psychology*, 18(2), 199-214. <https://doi.org/10.1037/0012-1649.18.2.199>.
- Kuyper, H., Van der Werf, M. P. C., & Lubbers, M. J. (2000). Motivation, meta-cognition and self-regulation as predictors of long-term educational attainment. *Educational Research and Evaluation*, 6(3), 181-205.
- Mahyuddin, R., Elias, H., Cheong, L. S., Muhamad, M. F., Noordin, N., & Abdullah, M. C. (2006). The relationship between students' self-efficacy and their English language achievement. *Malaysian Journal of Educators and Education*, 21, 61-71.
- McClelland, M., Geldhof, J., Morrison, F., Gestsdóttir, S., Cameron, C., Bowers, E., ... & Grammer, J. (2018). Self-regulation. *Handbook of life course health development*, 275-298.
- Moline, S., & Borkivec, T. D. (1994). The Penn State of Worry Questionnaire: Psychometric properties and association characteristics in GCL Davey, F Tallis (Eds) Worry: Perspectives on Theory, Assessment and Treatment. *Chi Chester UK.: Willey*, 265-283.
- Ocak, G., & Yamaç, A. (2013). Examination of the relationships between fifth graders' self-regulated learning strategies, motivational beliefs, attitudes, and achievement. *Educational Sciences: Theory and Practice*, 13(1), 380-387.
- Ongowo, R. O., & Hungi, S. K. (2014). Motivational beliefs and self-regulation in biology learning: Influence of ethnicity, gender and grade level in Kenya.
- Özkan, Ş. (2003). *The roles of motivational beliefs and learning styles on tenth grade students' biology achievement* (Master's thesis, Middle East Technical University).
- Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology*, 8, Article 422. <https://doi.org/10.3389/fpsyg.2017.00422>
- Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International journal of educational research*, 31(6), 459-470.
- Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In *Handbook of self-regulation* (pp. 451-502). Academic Press.
- Pintrich, P. R., & De Groot E. V. (1990). Motivational and self-regulated learning Components of classroom academic performance. *Journal of Educational Psychology*, 82(1), 33-40 <https://doi.org/10.1037/0022-0663.82.1.33>
- Pintrich, P. R., Marx, R. W., & Boyle, R. A. (1993). Beyond cold conceptual change: The role of motivational beliefs and classroom contextual factors in the process of conceptual change. *Review of Educational research*, 63(2), 167-199.
- Pintrich, P. R., & Zusho, A. (2002). The development of academic self-regulation: The role of cognitive and motivational factors. In *Development of achievement motivation* (pp. 249-284). Academic Press.
- Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: examining reasons for acting in two domains. *Journal of personality and social psychology*, 57(5), 749-761.
- Schunk, D. H., & Pajares, F. (2002). The development of academic self-efficacy. In *Development of achievement motivation* (pp. 15-31). Academic Press.
- Tin Zar Aung (2015). *The impact of motivational beliefs and learning styles on grade 9 students' science achievement*. Unpublished MEd thesis, Yangon University of Education.
- Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary educational psychology*, 25(1), 68-81.

- Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81(3), 329-339. [https://doi.org/ 10.1037/0022-0663.81.3.329](https://doi.org/10.1037/0022-0663.81.3.329)
- Zurina Md Nen, Kamarunzaman N.Z., Abdul Karim, M.F., Vadeveloo T. & Shanthi A. (2022). Exploring the Relationship Between Motivational Beliefs and Self -Regulated Learning. *International Journal of Social Science Research*, 11(1), 2327-5510. <https://doi.org/10.5296/ijssr.v11i1>.