

# **Factor Affecting the Student's Self-Motivated Strategies for Learning**

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## **Abstract**

The quality of education in Thailand has been discussed. The student's individual factors are the key factor for the effective learning outcomes, including they self-motivation, and self-regulated. Based on the cognitive learning theory, the students' self-motivated strategies for learning are one of the important factors that may affect the quality of the education as the whole. This study aims to validate the students' motivated strategies for learning in Thai education by using the Motivated Strategies Learning Questionnaire, MSLQ. Data was collected from 522 students in the Aviation Personnel Development Institute (APDI) in Thailand. The confirmatory factor analysis (CFA) was performed to test the hypothesis. It aims to generalize the MSLQ instrument in Thai context. The results revealed that the MSLQ, developed by Pintrich et. al. (1993), provide an empirical base for specification of linkages between individual differences in the students' motivational factor and their cognitive engagement and self-regulation in a classroom setting. However, it is still ambiguity in term of inadequate model-data fit. The findings will lay the groundwork for the future use of the MSLQ in research in students' self-motivation and self-regulation in Thailand.

**Keywords:** MSLQ, self-motivation, self-regulated, the Aviation Personnel Development Institute, Thailand

## **1. Background/ Objectives and Goals**

The cognitive learning theory is a theory that focuses on the brain and its functioning in learning through processing, memory, thinking, and mental functions such as planning, organizing, and categorizing. From the theory, human processes information based on prior experience, memory, and logic. Then when they want to retrieve the information, they use the same memory, categories, and plan of organization to find it and use it later (Sullivan, 2009). Cognitive theories are mentioned in the several models of learning, but they are given varying importance. Research on learning through mental processing has a long tradition in educational psychology (Feiz, Hooma, & Kooshki, 2013). There are many models of learning have been used in educational psychology to clarify the answers of researchers. It might shed light on such questions as how do students learn effectively? Or, what is happening in this classroom that facilitates learning better than in another classroom?

The student's self-motivation and strategies for learning, MSLQ (Pintrich, Smith, Gracia, & McKeachie, 1993) is an extensively used instrument in research on students at the college and university level. According to Duncan and McKeachie (2005), it was developed from some correlation studies on the students' motivation and self-regulated learning at the National Centre for research for improving Postsecondary Teaching and Learning, USA. Furthermore, MSLQ has been verified in the different context, e.g., Estonian (Saks, Leijen, Edovald, & Õun, 2015), Iranian (Feiz, Hooman, Kooshki, 2013), Turkey (Erturan Ilker, Arslan, & Demirhan, 2014), and the USA (Cook, Thompson, & Thomas, 2011).

The MSLQ has been translated into more than 20 different languages, including Argentina, Australia, Brazil, Canada, Chile, China, Croatia, Cyprus, Egypt, India, Iraq, Japan, Malaysia, the Philippines, Russia, Turkey, the United Kingdom, and the United States. Its reliability and validity have been only tested in Spanish and Chinese apart from English (Duncan & McKeachie, 2005). They commented that MSLQ had been used to study across a wide range of contexts such as undergraduate students, chemistry, social studies, and physical education. However, there is still an inadequate data model-fit (Duncan & McKeachie, 2005; Dunn, Lo, Mulvenon, & Sutcliffe, 2012).

Although MSLQ can be either used on its entirely or its subscale (Duncan & McKeachie, 2005), the existing evidence found, MSLQ has been tested in Thai context (Samruayruen, 2013) for 88 online learning students. From the study of Samruayruen (2013), there were only five subscales of MSLQ used, including an intrinsic goal, self-efficacy, test anxiety awareness, cognitive strategy, and study management. The findings showed the overall correlation between the learners' motivational components and the learners' self-regulation strategies had a correlated significantly, in which supported the findings of Pintrich and De Groot (1990).

To shed more light on using MSLQ in Thailand, this study aims to examine factors affecting the student's self-motivation and strategies for learning in Thai context targeted in the Aviation Personnel Development Institution. It will provide an empirical base for specification of linkages between individual differences in the students' motivational factor and their cognitive engagement and self-regulation in a classroom setting.

The MSLQ has dominated self-regulated learning research since the early 1990s. They developed the motivated and strategies for learning, MSLQ consisting of two dimensions; a) 31 items in self-motivation dimension, in which consists of six subscales include intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, self-efficacy for learning and performance, and test anxiety, and b) 50 items in self-learning strategies dimension regarding of rehearsal, elaboration, organization, critical thinking, metacognitive self-regulation, time and study environment management, and effort regulation.

## 2. Methods

This study, the participants were drawn from the purposive sampling from current 522 undergraduate students in the Aviation Personnel Development Institute, APDI, Thailand. To avoid the comprehension stage of the response process of items and context ambiguity, Tourangeau, Rips, and Rasinski (2000) suggested that participants should be asked to remind themselves of their favorite course, and then complete the statements in pen and pencil questionnaire.

The demographic information was obtained from 522 students. The participants were 24.5% (n = 128) male and 75.5% (n = 394) female. Five (1%) of them were on the second year, 62.4% (n = 324) were on the third year, 36.4% (n = 189) were on the fourth year, and four were reported missing. The average GPA of students was 3.04 as displayed in Table 1.

Table 1: Description of the samples

	Gender		Year			GPA
	Male	Female	2	3	4	
Total	128	394	8	324	189	3.04
Percentage	24.5%	75.5%	1.5%	62.1%	36.4%	

n = 522

The 7-point Likert scales of MSLQ measurement were designed by the researchers as a measurement instrument to investigate the nature of student motivation and learning strategies. Students rate themselves on a 7-point Likert scale, from 1 (not at all true of me) to 7 (very true of me). From existing study, the MSLQ's Cronbach's alpha was reported in good internal reliability (Artino, 2005). Guillemín, Bombardier and Beaton (1993) suggested that

the English original version of MSLQ should be translated by at least two translators. Therefore, it was translated into Thai by two Thai professional English translators. They both have agreed on the literal and cultural translation (van Widenfelt, Treffers, de Beurs, Siebelink, and Koudijs, 2005). The reliability for this study is 0.95. The sample items of the MSLQ are displayed in Table 2.

Table 2: Dimensions, scales and example items of MSLQ

Dimension	Scales	Items
Motivational Dimension	Intrinsic goal orientation	In a class like this, I prefer course material that really challenges me so that I can learn new things.
	Extrinsic goal orientation	Getting a good grade in this class is the most satisfying thing for me right now.
	Task value	Is it important for me to learn the course material in this class
	Control learning	If I study in appropriate ways, then I will be able to learn the material in this course.
	Self-efficacy for learning and performance	I believe I will receive an excellent grade in this class.
	Test anxiety	When I take tests I think of the consequences of failing.

Table 2: Dimensions, scales and example items of MSLQ (Cont.)

Dimension	Scales	Items
Learning Strategies Dimension	Rehearsal	When I study for this class, I practice saying the material to myself over and over.
	Elaboration	When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions.
	Organization	When I study the reading for this course, I outline the material to help me organize my thoughts.
	Critical thinking	I often find myself questioning things I hear or read in this course to decide if I find them convincing.
	Meta-cognitive self-regulation	When reading for this course, I make up questions to help focus my reading.
	Time and study environment	I usually study in a place when I can concentrate on my course work.
	Effort regulation	I work hard to do well in this class even if I don't like what we are doing.
	Peer learning	When studying for this course, I often try to explain the material to a classmate or a friend.
	Help seeking	I ask the instructor to clarify concept I don't understand well.

### 3. Results

To examine the relationship of the scales of MSLQ, Table 3 displayed the correlation of each scales. It is shown that all scales are significantly correlated in this study. Among the motivational dimension, the correlated value was in ranged from  $r = .11$  (between an intrinsic goal and test anxiety) to  $r = .81$  (between an intrinsic goal and task value). The results confirmed the study of Pintrich et. al. (1993) that the scales are valid measures of motivational and learning strategies constructs. However, this current study has not revealed the negative relationship between positive motivation, an intrinsic goal, task value, control of learning, and self-efficacy as the previous, but their correlations tended to be very low ( $r = .11, .32, .16, .28, \text{ and } .10$  respectively)

As expected, all the learning strategies dimensions were positively related to one another, with ranged from  $r = .28$  (between rehearsal and effort-regulation) to  $r = .76$  (between rehearsal and elaboration). Finally, the motivational dimension was significantly correlated with the learning strategies dimension. And, test anxiety was low correlated with all learning strategies scales, except self –regulation ( $r = .72$ ).

Based on the assessments of model-data fit suggested by Hu and Bentler (1999) that indicated by CFI, and RMSEA ( $>0.95$ , and  $<0.06$ ), this study reported the model-data fit at CFI = .95, and RMSEA = .09 which was poor fit. According to Pintrich et. al. (1993), a  $\chi^2 / df$  ratio is less than is five considered to be “indicative of a good fit between the observed and reproduced correlations matrices” (p. 807), this study reported higher value than that statement, so it indicated poor fit. Furthermore, this result supported that there was still an ambiguity of using MSLQ in the different culture context as reported earlier in the study of Duncan and McKeachie (2005), and Dunn, Lo, Mulvenon, and Sutcliffe (2012).

Table 3: Means, Standard Deviation, and Correlations of the scales

Scales	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. intrinsic goal	21.31	3.64	1														
2. extrinsic goal	21.86	3.83	.55	1													
3.taskvalue	33.07	5.24	<b>.81</b>	.62	1												
4.control learning	21.50	3.50	.65	.57	.72	1											
5.self-efficacy	40.61	6.63	<b>.71</b>	.59	.74	.56	1										
6.test anxiety	23.20	4.76	.11	.32	.16	.28	.10	1									
7.rehearsal	19.60	3.59	.51	.34	.53	.44	.58	.13	1								
8.elaboration	29.86	5.17	.56	.40	.58	.44	.60	.12	.76	1							
9.organization	19.06	3.72	.48	.37	.49	.40	.54	.18	.73	.72	1						
10.critical thinking	24.12	4.52	.45	.31	.47	.40	.46	.17	.64	.66	.60	1					
11.regulation	58.16	8.67	.52	.45	.54	.53	.33	.72	.76	.71	.72	.65	1				
12.effort regulation	18.21	3.54	.15	.20	.14	.16	.15	.43	.28	.34	.32	.38	.51	1			
13.peer learning	14.27	2.71	.43	.34	.46	.38	.54	.21	.67	.67	.67	.57	.68	.40	1		
14. help seeking	19.85	3.22	.44	.35	.45	.40	.41	.32	.54	.61	.50	.52	.69	.53	.52	1	
15. study management	37.87	5.77	.36	.32	.38	.30	.41	.34	.59	.65	.59	.54	.74	.56	.57	.58	1

n=522, all scales are significantly related at the 0.01 ( $p < 0.01$ ).

#### 4. Discussion

The results suggested that the MSLQ has relatively good reliability regarding internal consistency. In Thai context, this framework and the scales that measure it seemed to be valid in term of correlation among scales. The six motivational subscales and the nine learning strategies subscales represent a conceptual and empirically validated in the classroom.

This study contributes the information for the faculty members, those involved, and those who are interested in this study to better understand students' self-motivation and self-regulated learning behaviors, and promote the development of self-motivation, and self-regulated learning behaviors of the students. It will also enhance their knowledge, providing insight information to the faculty members as the environmental factors that have a direct influence on students.

Validating the MSLQ in Thai context, it demonstrates that the motivational and learning strategies are important. From this study, all factors in the MSLQ are validated; especially, students' intrinsic goals of the learner show a high correlation to their task value. Therefore, faculty members need to enhance students' intrinsic motivation to reach their goals. On the other hand, test anxiety that demonstrated how much student's worry and concern over taking exams have an impact on others factors. For example, test anxiety has shown on low correlation with critical thinking, means those who has low test anxiety, has high critical thinking. Faculty members may help their students to cover with their anxieties. Furthermore, the result showed that those who have high self-regulation exhibit a high correlate to those who have low test anxiety.

Education in the 21st century favors student-center methods. Given the challenges facing society, faculty members are being required to take on new roles and must have the knowledge, confidence, and resources needed to fulfill legitimate expectations of the community. It requires better curriculum, better teaching, and better tests. Education leader, including faculty members, must be realistic about what are teachable. They must pay attention how the students can learn effectively. The student's individual factors are the key factor for the effective learning outcomes, including their self-motivation, and self-regulated.

## **6. Limitation of the study**

According to Duncan and McKeachie (2005), MSLQ is based assumes that students' responses to the questions might vary as a function of different courses; this may cause the limitation of the students to think what the courses are. The MSLQ itself can be used as one single set of questionnaire, 81 items or separate factor. Therefore, researcher may consider adjusting to use separate dimension at each situation or context because too many items may undermine motivation of the respondents.

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