

Validity And Reliability Of The MSLQ Malay Version In Measuring The Level Of Motivation And Self-Regulated Learning.

Fakhruddin Khosim, Mohd Isha Awang

Abstract: Motivated Strategies for Learning Questionnaire [1] is a survey instrument that measures the dimensions of motivation and self-regulated learning. This research is conducted to determine the validity and reliability of the MSLQ-Bahasa Melayu version. The study sample consists of 395 Form Two Orang Asli students in the state of Perak, Malaysia. The statistics used is the Cronbach's Alpha reliability analysis and the results of factor analysis are to confirm the factors that exist in the survey. The study findings for Cronbach's Alpha reliability for all constructs are almost the same with that reported in the original version. Meanwhile, for the factor analysis, three factors were successfully extracted into the motivation dimension, while for the self-regulated learning dimension, only one factor was successfully extracted as compared to two factors in the original version. In conclusion, MSLQ-BM is an instrument that has high validity and reliability in measuring motivation and self-regulated learning in the context of school children in Malaysia.

Index Terms: reliability, validity, factor analysis, MSLQ, Orang Asli

1. INTRODUCTION

There are many quantitative studies all over the world that use survey instruments which have been translated, especially in the field of social sciences generally and the field of education specifically. The said instrument has been adapted and translated into the native language based on the needs and objectives of the study. However, the use of an instrument which has been adapted and undergone the process of translation does not guarantee that it can measure the same construct as the original due to the factor of difference in language. Based on [2], apart from the factor of bias, there is another important issue in the translation and adaptation of instrument, which is validity. He firmly asserted that validity and reliability must be reviewed and rechecked after an instrument has been adapted and translated into a new language. Motivated Strategies for Learning Questionnaire (MSLQ) is a self-reporting survey instrument that is specifically constructed to measure the motivation and learning strategies of college students [3]. This instrument is also refined through undergoing many changes and improvements until demonstrates a satisfactory level of validity and reliability when administered to college students in the United States of America [4], [5]. This study utilises a preliminary MSLQ instrument for secondary school students, where there are less number of items and the statements are shorter and easier to understand, compared to the version for college students. MSLQ can measure the dimensions of motivation and learning strategies from a socio-cognitive learning perspective, where students are a source of active information processing.

This is explained by [6] which stated that motivation and learning strategies are not a triad but instead they are dynamic characteristics that can be controlled by the students. The MSLQ instrument contains 44 question items which are divided into two dimensions, namely motivation and self-regulated learning. The motivation dimension is divided into three constructs, namely self-efficacy, intrinsic values, and test anxiety. Self-regulated learning consists of two constructs, which are cognitive strategy used and self-regulation. This instrument can be used entirely or partially according to the needs of the study [5]. [7] in his review stated that the MSLQ instrument has also been used in many learning situations such as long-distance learning (online classes) and street learning station. Many studies have been carried out to investigate this instrument's psychometric characteristics which have been translated into various languages such as Iranian, Turkish, Thai, Mexican, Oman, Chinese language and others. However, there are very few studies which involve the exploration of MSLQ psychometric characteristics in Malaysia, especially those involving Orang Asli students. Therefore, the objective of this research is to determine the validity and the reliability of the MSLQ Bahasa Melayu version (MSLQ-BM).

2 LITERATURE REVIEW

A study conducted by [8] using MSLQ Chinese version administered to 477 respondents who were school children aged between 12 to 19 years, have been translated into Chinese language using the back translation method through confirmatory factor analysis (CFA). The study found that the motivation component can be successfully extracted into three factors, namely self-efficacy, intrinsic value, and test anxiety. However, the self-regulated learning component is extracted to one factor only compared to two in the original version. This demonstrates the possibility that the items in both factors are in fact measuring the same thing. Ref. [9] in a research carried out upon a sample of 597 university students to analyse the psychometric characteristics of the Spanish version of MSLQ instrument found that all factors are extracted according to the original version, except for one intrinsic factor that had to be eliminated based on the exploratory factor analysis (EFA). The research findings also showed that the instrument's reliability index was at a high level ($\alpha=0.70$). Another research

- *Fakhruddin Khosim is currently pursuing doctorate degree program in Educational in University Utara Malaysia (UUM), Malaysia, PH-0174879029. E-mail: fakhruddinkhosim@gmail.com.*
- *Mohd Isha Awang is an Associate Professor at the School of Education and Modern Language (SEML), UUM, Malaysia, PH-0194709666. E-mail: isha@uum.edu.my*

done by [10] that administered the online- self regulation learning questionnaire for 281 online students found that the self-regulated learning is an important factor that explains the satisfaction of online study.

3 METHOD

This research applies a quantitative design, a research method that uses a survey instrument and involves measurement of the research variables through statistical discourse. [11]. Data is obtained through the survey instrument MSLQ [1] from a total of 395 respondents being Form Two Orang Asli students (170, male; 225, female) at 10 secondary schools in the state of Perak, Malaysia. The items in this survey instrument are translated into Bahasa Melayu by a competent expert in both Bahasa Melayu and English languages using the back translation method [12]. The opinion of an expert in education psychology is also needed to confirm the contents of each item. The MSLQ instrument uses measurement scale 7-point Likert (1-not all true of me to 7-very true of me). The data is analysed using SPSS software to check on the reliability of the instrument and factor analysis. Cronbach alpha and factor analysis are used to test validity and reliability of instrument [13].

4 RESULTS

Overall, the Cronbach's Alpha coefficient for all constructs in the MSLQ instrument Bahasa Melayu version is almost the same with that obtained in the original version. Based on Table 1, the value of alpha (α) in MSLQ-BM falls between the range of 0.52 to 0.81. The self-efficacy construct ($\alpha = 0.81$) is a construct with the highest value of reliability, followed by the cognitive strategy used ($\alpha = 0.79$), intrinsic value ($\alpha = 0.74$), self-regulation ($\alpha = 0.64$), and test anxiety ($\alpha = 0.52$).

TABLE 1:

CRONBACH'S ALPHA RELIABILITY FOR MOTIVATION AND SELF-REGULATED LEARNING DIMENSIONS

DIMENSION/CONSTRUCT	NUMBER OF ITEMS	CRONBACH ALPHA	
		Pintrich & DeGroot (1990)	MSLQ-BM
Motivation	22	-	0.84
1. Self-Efficacy	9	0.89	0.81
2. Intrinsic Value	9	0.87	0.74
3. Test Anxiety	4	0.75	0.52
Self-regulated learning	22	-	0.83
4. Cognitive strategy used	13	0.83	0.79
5. Self-regulation	9	0.74	0.64

Based on Table 2, the research findings showed that in measuring the motivation dimension, three factors have clearly emerged and these factors explain 40.67% of the overall variance in this dimension. Each of the three factors give variance values, with 24.01% representing factor I (self-efficacy), 9.91% representing factor II (intrinsic value) and 6.75% representing factor III (test anxiety).

TABLE 2:

RESULTS OF FACTOR ANALYSIS; FACTOR LOADING CONFIRMATION FOR MOTIVATION DIMENSION

Item	F1	F2	F3
02	0.545		
06	0.456		
08	0.641		

09	0.692		
11	0.496		
13	0.513		
16	0.627		
18	0.606		
19	0.447		
01		0.368	
04		0.482	
05		0.553	
07		0.350	
10		0.337	
14		0.551	
15		0.585	
17		0.513	
21		0.516	
03			0.350
12			0.363
20			0.531
22			0.592
Eigen value	5.28	2.18	1.48
Variance (%)	24.01	9.91	6.75
Cumulative (%)	24.01	33.93	40.67

Based on Table 3, the research findings indicate that in measuring the dimension of self-regulated learning, two factors have clearly emerged and these factors explain 34.80% of the overall variance in this dimension. Both factors are factor I (the cognitive strategy used) and factor II (self-regulation) with variance values of 27.35% and 7.45% respectively.

TABLE 3:

RESULTS OF FACTOR ANALYSIS; CONFIRMATION OF FACTOR LOADING FOR DIMENSION OF SELF-REGULATED LEARNING

Item	F1	F2
23	0.600	
24	0.607	
26	-0.348	
28	0.441	
29	0.501	
30	0.524	
31	0.501	
34	0.587	
36	0.474	
39	0.609	
41	0.613	
42	0.562	
44	0.523	
25	0.542	
27		0.352
32		0.322
33	0.481	
35		0.340
37		0.554
38		0.367
40	0.510	
43	0.534	
Eigen value	6.02	1.64
Variance (%)	27.35	7.45
Cumulative (%)	27.35	34.80

5 DISCUSSION

The findings of factor analysis for the instrument MSLQ-BM confirmed the number of factors that are required in the dimensions of motivation and self-regulated learning, as well as items under those constructs. This clearly shows the similarity between factors and items found in the Bahasa Melayu version and the original version, with a majority of items in each factor able to be detected. However, for the dimension of self-regulated learning, most items have been

clustered into factor I and only five items are found in factor II. This finding is different from the original version which shows there to be nine items in factor II. Factor analysis shows that for the Bahasa Melayu version, there is only one factor used which is cognitive strategy. This research finding supports the finding in [8] which translates the Chinese version of MSLQ where the self-regulated learning dimension is found to have been extracted into one factor only. This shows that the original instrument which has been adapted and translated does not guarantee that it measures the same construct. Reliability analysis of MSLQ-BM found the value of Cronbach's Alpha to be high and almost the same as the original version except for the motivation dimension, with the construct test anxiety having alpha value of 0.52. However, overall, the reliability of the motivation dimension has a high value of alpha (0.84). The results of the research are in line with the research findings carried out by [14] for the Turkish version of MSLQ, where the alpha value is found to fall between 0.41 and 0.86. This shows that MSLQ-BM has reasonable psychometric characteristics after being translated into Bahasa Melayu and it is suitable to measure students' motivation and self-regulated learning in schools.

6 CONCLUSION

In conclusion, the instrument MSLQ-BM has the same psychometric characteristics as the original version. Meanwhile, the dimensions and constructs show good internal consistency, and this indicates that MSLQ-BM has a high value of reliability and validity. Therefore, this instrument can be used to measure the level of motivation and self-regulated learning of school-going students in Malaysia.

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