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Assessing the Motivated Strategies for Learning Questionnaire (MSLQ) in Iranian students: Construct Validity and Reliability

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Abstract

Motivated Strategies for Learning is a complex construct that has inspired innumerable research in recent years. The present study aim to investigation validity and reliability of the motivated strategies for learning questionnaire in Iranian students . A sample of 504 students (boys & girls) was chosen by multistage sampling. The MSLQ is an 81-item, self-report Likert-type questionnaire was completed by students. The results of study show that the questionnaire was reasonably reliable (alpha was .958). The construct validity of questionnaire was evaluated by exploratory factor analysis. Six factors were obtained that explained 40.95% of total variance. The findings support that the MSLQ is a useful tool for assessing the motivated strategies for learning in Iranian students.

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Introduction

Cognitive and metacognitive strategies are mentioned in every model of learning but they are given varying importance.Research on strategic action has a long tradition in educational psychology. Weinstein and Mayer (1986) differentiate between cognitive,metacognitive, and as a third group motivational and affective strategies.Cognitive strategies include rehearsal strategies, elaboration strategies,and organization strategies. Metacognitive strategies are characterized as comprehension monitoring strategies but are not divided into further subgroups (Weinstein & Mayer, 1986).

Some models have developed a more detailed description of cognitive and metacognitive processes that are involved. Models of information processing regard cognitive processes with complex feedback loops as the basis of self-regulated learning (Winne & Hadwin, 1998; Winne & Perry, 2000; Zimmerman, 2001). Different processes are distinguished according to their chronology in the learning episode which is conceptualized as information processing. Defining the task (1), setting goals and planning how to reach them (2), enacting tactics (3), and adapting metacognition (4) are the four phases that are separated by Winne and Hadwin (1998). Metacognitive monitoring and metacognitive control are distinguished as two events that are relevant in each of these phases.

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Zimmerman (2000, 2001) postulates three phases, the forethought phase, the performance or volitional control phase, and the self-reflection phase. He distinguishes task analysis including goal setting and strategic planning in phase one, self-control (volitional control) and task-related strategies in phase two, and self-reflection and self-evaluation in phase three. In each of these phases, different metacognitive processes are relevant and different strategies can be applied for planning, controlling, and evaluating the learning process.

Pintrich (2000) has also developed a temporal model of the process of self-regulated learning in which four phases are distinguished. In his conceptualization the first phase is called forethought, planning and activation including goal setting. The second phase comprises the monitoring of the learning process. The third phase includes regulation and control, thus the use of control strategies is part of this phase. The fourth phase is called reaction and reflection and consists of all evaluations, judgments, and attributions that are made subsequently to a learning episode. Pintrich (2000) points out that the described phases represent a time-ordered sequence. However, all phases do not take place in every learning process and they do not always happen consecutively.

According to Pintrich (2000), the four phases of self-regulated learning can occur in four different areas: cognition, motivation, behavior, and context. It is important to note that phases and areas of regulation are not necessarily independent and distinct. “The phases may overlap, occur simultaneously with multiple interactions among the different processes and components” (Pintrich, 2000, p. 456). Again, different strategies are to be applied in different chronological phases of the learning process. Metacognitive strategies of planning, monitoring, and evaluating are relevant as well as different cognitive strategies for dealing with a complex learning content.

Pintrich and his colleagues (1993) developed a questionnaire based on the conception of Weinstein et al. The MSLQ (Pintrich et al.,1993) includes two main sections: Motivation on the one hand and learning strategies on the other. The learning strategies scales are divided into three categories: The use of metacognitive and cognitive strategies and the management of different learning resources. Cognitive strategies are separated into Rehearsal, Elaboration, Critical Thinking, and Organization. Subscales of the metacognitive strategies are Planning, Monitoring, and Regulation. The subscales measuring the Resource Management are Time Management, Study Environment, Effort Management, Peer Learning, and Help Seeking.

The MSLQ was developed using a social-cognitive view of motivation and self-regulated learning (see, for example, Pintrich, 2003). In this model, students’ motivation is directly linked to their ability to self-regulate their learning activities (where self-regulated learning is defined as being metacognitively, motivationally, and behaviorally active in one’s own learning processes and in achieving one’s own goals; Eccles & Wigfield, 2002). This framework assumes that motivation and learning strategies are not static traits of the learner, but rather that “motivation is

dynamic and contextually bound and that learning strategies can be learned and brought under the control of the student” (Duncan & McKeachie, 2005, p. 117). Said another way, students’motivations change from course to course (e.g., depending on their interest in the course, efficacy for performing in the course, etc.), and their learning strategies may vary as well, depending on the nature of the course.

The main purpose of this study was to investigate the MSLQ could be used to measure self regulated learning strategies employed by Iranian students and is the MSLQ reliable and valid instrument in Iranian students?

Method

Participation

This study was undertaken in high schools in Tehran. Six high schools were selected by multistage (stratified cluster random) sampling from 3 educational distinct of Tehran and 504 students (204 girls and 300 boys) were selected and the queaistionair were given to students. Participation in the study was voluntary and anonymous and the participants were assured that the information collected was confidential.

Instument

The MSLQ is an 81-item, self-report Likert-type questionnaire in which students rate statements about their motivational orientation and use of different learning strategies for a specific course from “1” (not at all true of me)

to "7" (very true of me) (Pintrich et al., 1991; Van Zile-Tamsen & Livingston, 1999). The MSLQ, which is scored ipsatively, consists of fifteen different summative scales divided into two main sections, namely, a Motivation Section and a Learning Strategy Section.

The reported reliabilities of the scales are between α=.52 and α=.80. The factorial structure of the MSQL was proved in several studies. Only the structure of the metacognitive strategies could not be differentiated (Garcia & Pintrich,1996).

Procedures

The questionnaire was administered in school in regular classrooms. The students were informed orally that they were participating in a survey about the way students learn. Additionally, it was pointed out that it was not an achievement test that they would not get any marks, that their answers were handled anonymously, and that their teachers would not get an insight into their answers. Finally, the researcher stressed the importance of being honest.

After handing out the questionnaires the students had the opportunity to ask comprehension questions. Answering the likert scale was illustrated with an item example. There was a time limit of one school lesson (45 minutes) for the completion of the whole survey which includes reading the non-fictional text, answering the questions concerning the text, and answering the questionnaire items. In most cases less time was required, generally between 20 and 30 minutes.

Results

Construct Validation: Factor Analysis

According to the theoretical assumptions and the multidimensionality of self-regulated learning an exploratory factor analysis using principal component factoring with varimax rotation was conducted among the items assessing cognitive strategies and among the items measuring metacognitive strategies. In the factor extraction three procedures were used to identify the underlying factor structure: the Kaiser-Meyer-Olkin measure of sampling adequacy, the Kaiser-Guttman criteria (eigenvalues greater than one), and the scree plot by Catell (Field, 2009). Using all these methods and criteria for extracting the factor structure should reduce the risk of over or under extraction. The varimax rotation method was applied because it accounted for larger factor loadings under each of the factors that will be extracted. Analyzing the factor structure, there were different criteria defined in advance; items should be assigned to factors based on their factor loadings, items with factor loadings below .35 should be removed, and items with cross loadings in two or more factors should also be eliminated (Field, 2009).

Results of the KMO and Bartlett's test support the possibility of conducting a factor analysis. The KMO with a value of .917 suggest that running a factor analysis on these data is adequate. Bartlett's test of sphericity also indicates good values because of its statistical significance

($\chi 2$ (300) = 18705.80, $p < .001$). The examination of the eigenvalues as well as the scree plot show that three factors can be produced which is in accordance to the theoretical model. Results of the three-factor principal component analysis with varimax rotation are shown in Table 1.

Table 1:Results of the Rotated Component Matrix with Items Motivated Strategies for Learning (N = 504)

Item	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Item	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
q23	.687						q78		.488				
q22	.678						q43		.485				
q21	.649						q42		.458				
q18	.648						q56		.455				
q11	.647						q41		.449				
q13	.644						q39		.446				
q20	.640						q73	.383	.445				

q10	.640						q46	.419	.382						
q12	.640						q62	.407	.385						
q17	.633						q49		.660						
q15	.606						q50		.658						
q27	.591						q53		.605						
q2	.575						q51		.523						
q30	.571						q24		.498						
q16	.545						q45		.489						
q7	.542						q47		.406						
q26	.507						q40		.396						
q6	.501						q34		.391						
q29	.498						q48		.374						
q31	.489						q54		.361						
q1	.463						q36		.350						
q8	.434						q4		.354						
q5	.421						q60			.595					
q35	.359						q33			.537					
q66		.639					q59			.515					
q70		.614					q57			.462					
q74		.614					q37			.418	.404				
q75		.610					q61			.401					
q72		.594					q44			.385					
q63		.584					q3			.344					
q79		.576					q32			.359					
q67		.570					q28				.570				
q68		.541					q19				.469				
q65		.528					q14				.435				
q69		.521					q25				.424				
q64		.518					q9				.419				
q55		.516					q80					.616			
q58		.507					q81	.358				.440			
q71		.497					q77					.388			
q76		.492					q38					.345			

Explained Variance 40.90%

Note. Extraction method: Principal Component Analysis. Rotation method: Varimax with Kaiser Normalization. Sufficient factor loadings over the criteria .35 are written in bold.

Looking at the eigenvalues of the items as well as on the scree plot a 6 factorial solution is sustained.

Factor 1 consists of items which are theoretically connected to the intrinsic motivation. On the second factor items loaded which are related to the self efficacy for learning .On the third factor items loaded which are related to the organization , the fourth factor items loaded which are related to the self regulation , the fifth factor items loaded which are related to the anxiety and sixth factor items loaded which are related to the rehearsal. The six-factorial solution accounts for 40.09% of the total variance.

Reliability Analysis

Based on the results of the exploratory factor analysis the items were selected to test for reliability (internal consistency by Cronbach's α).

An item was excluded from reliability analysis if it had a factor loading less than .35 and if it had communalities less than .30. The total scale has a reliability coefficient of α=.957. The alpha if one of the items deleted does suggest that deleting item 52.

Disscussion

The aim of this study was to see whether the MSLQ could be used to measure self regulated learning strategies employed by Iranian students. Until now the MSLQ has been mainly used for general education in academic settings. The study was based on the assumption that self regulated learning strategies are not limited to the context of general education.Our investigations clearly show that the six separate factors for cognitive learning strategies can be found.

According to Pintrich and his colleagues (1993) a measure's content validity can be inferred from the close relationship between a scale's items and a coherent domain of theory. The six scales in the Motivation section and the nine scales in the Learning Strategy section were found to represent a coherent conceptual and empirically validated framework for assessing students' motivation and use of learning strategies (Pintrich et al., 1993). Numerous research studies have supported the factor structure of the MSLQ and the stability of the fifteen scales (Garcia & Pintrich, 1995; Jacobson, 2000; McClendon, 1996; Pintrich et al., 1993).

The current study has a number of limitations. First, generalizations from this study might be limited because the participants were only high schools students. Second, the method of analysis is only exploratory factor analysis, a conformity factor analysis method is needed to augment arguments made in this article.

References

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53*, 109-132.

Duncan, T. G., & McKeachie, W. J. (2005). The making of the Motivated Strategies for Learning Questionnaire. Educational Psychologist, 40(2), 117-128.

Field, A. (2009). Discovering statistics using SPSS (3rd ed.). London:
SAGE Publications Ltd.

Garcia, T., & Pintrich, P. R. (1995). *Assessing students' motivation and learning strategies*: *The Motivated Strategies for Learning Questionnaire (MSLQ)*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA. ERIC Document Reproduction Service No: ED 383770.

Garcia, T., & Pintrich, P. R. (1996). The effects of autonomy on motivation and performance in the college classroom. *Contemporary Educational Psychology,* 21, 477-486.

Jacobson, R. R. (2000). Differences between traditional and non-traditional learners on the Motivated Strategies for Learning Questionnaire. *Dissertation Abstracts International,* 61 (3A), 879.

McClendon, R. C. (1996). Motivation and cognition of pre-service teachers: MSLQ. *Journal of Instructional Psychology,* 23, 216-221.

Van Zile-Tamsen, C., & Livingston, J. A. (1999). The differential impact of motivation on the self-regulated strategy use of high and low achieving college students. *Journal of College Student Development, 40,* 54-59.

Pintrich, P. R., Smith, D. A., Garcia, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the Motivated for Learning Strategies Questionnaire (MSLQ). *Education and Psychological Measurement,* 53 (3), 801-814.

Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M.
Zeidner (Eds.), *Handbook of self regulation* (pp. 452-502). New York: Academic Press.

Weinstein, C. E., & Mayer, R. E. (1986). The teaching of learning strategies. In M. Wittrick (Ed.), *Handbook of research and teaching* (pp.315-327). New York: Macmillan.

Winne, P. H., & Perry, N. E. (2000). Measuring self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp.532-566). San Diego: Academic Press.

Winne, P. H., & Hadwin, A. F. (1998). Studying as self-regulated learning.
In D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds). Metacognition
in educational theory and practice (pp. 279-306). Hillsdale, NJ:
Erlbaum.

Zimmerman, B. J. (2000). Attaining self-regulation: a social cognitive perspective. In M. Boekaerts, P. R. Pintrich & M. Zeidner (Eds.), *Handbook of self-regulation* (pp.13-39). San Diego: Academic Press.

Zimmerman, B. J. (2001). Achieving academic excellence: A self-regulatory perspective. In E. M. Ferrari (Ed.), *The pursuit of excellence through education* (pp.85-110). Mahwah, NJ:Erlbaum.