



Validity, Reliability and Confirmatory factor structure of the Persian version of Emotion and Motivation Self-Regulation Questionnaire (EMSR-Q)

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ABSTRACT

Background and Aim: Emotion and Motivation Self-regulation plays an important role on student learning at classroom, so presence of appropriate tools for evaluating and assessing this structure is necessary. The aim of this study was to investigate the validity, reliability and confirmatory factor structure of the Persian version of Emotion and Motivation Self-Regulation Questionnaire (EMSR-Q). **Methods:** The present study had a descriptive and Psychometric design, and the statistical population included all middle and high school students of Semnan city. After providing double translation technique, Persian version of EMSR-Q carried out within 306 students from ages 12 to 16 years old. The study sample selected through random sampling method. Internal consistency and Item rest correlations methods were used to investigate the scale validity and the reliability were investigated by confirmatory factor analysis, subscales correlations, and criterion validity. Data were analyzed using SPSSV19 and LISRELV8.80 softwares. **Results:** Chronbach's alpha coefficients range (0/71 to 0.86) implied appropriate Internal consistency of this scale and its subscales. Results of confirmatory factor analysis supported five factor structures (Avoidance oriented Self Regulation, Performance oriented Self Regulation, Negative Self Regulation of Stress, Positive Self Regulation of motivation, and Process Oriented Self Regulation) of scale. There were Average and meaningful correlation coefficients between the scales of Persian version of EMSR-Q with Cognitive Emotion Regulation and Educational Motivation Questionnaires. In addition, the correlation coefficients between subscales were high. **Conclusion:** It can be concluded that Persian version of EMSR-Q has a good validity and reliability in Iranian population and can be practical in different fields.



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Introduction

Teachers often believe that most students will only be able to learn if they have sufficient motivation. Because, in this case, they do not consider the goal valuable in terms of time and effort spent, which can be true according to Eccles' expectancy-value theory (Eccles & Wigfield, 2002). However, based on what happens, students will need more motivation in such a situation because they do not see progress when trying to learn. Therefore, such people will not have sufficient discipline in terms of negative effects on self-efficacy expectancy (a person's expectation of his ability to cope with tasks efficiently) and success expectancy (the expectation that performance will be successful) (Eccles & Wigfield, 2002).

Due to the importance of orderliness in successful learning and considering that many students have inadequate orderliness in the learning process, many researchers have tried to facilitate the acquisition of this qualification. Accordingly, their efforts have led to the formation of a large body of existing knowledge about how discipline works and how to intervene to strengthen it (Zimmerman, 2011; Dignath & Buttner, 2008). However, not all students will benefit equally from interventions designed to improve discipline. Therefore, to establish and evaluate the effectiveness of interventions, it is important to recognize the deficiencies and defects of people's discipline. There are different methods to assess orderliness, each of which has advantages and disadvantages (Boekaerts & Corno, 2005). Suppose the goal of discipline is to describe the student's actions while trying to understand a specific task. In that case, methods such as observing and tracking students' habits, and recording students' thoughts aloud, are preferred, but when the goal of assessing discipline is to identify strategic processes related to a specific task. To summarize, the problem-solving of this issue is relatively straightforward and self-evident because these processes are entirely related to the nature of the problem (Schmidt & Schmid, 2011; Zimmerman, 2011).

Undoubtedly, the identification of the factors involved in the way of discipline and students' motivation in learning paves the way to improve education, promote and interest students in classrooms, and various theories have spoken about the importance of discipline in this regard (Eccles & Wigfield, 2002; Efklides, 2011; Cole,

2000; Boekaerts & Corno, 2005). In this regard, first of all, the existence of an efficient tool to identify students' order-seeking styles and motivation has become the first need of researchers in this field in the design of interventions. As mentioned, the emotional and motivational self-regulating questionnaire is a tool that was developed recently for this purpose. However, the psychometric features of this questionnaire have not been studied in Iran. In this regard, the designers have confirmed the psychometric properties of the emotional and motivational self-regulation questionnaire (Alonso-Tapia, Calderon, & Ruiz, 2014). In general, the search for order is one of the key elements of biological, psychological, and social evolution. Its proper formation is one of the necessities of every person's life. On the other hand, based on measurement, comparison, intervention, and its application, developing appropriate tools to measure a structure is an important part of the process. Hence, according to the importance and place of the structure of excitement and motivation in different areas of psychology, the fundamental role of emotion and motivation regulation strategies in different educational and research fields and considering that every questionnaire in different societies is influenced by cultural factors and how people interpret. Therefore, the purpose of the current research was to investigate the validity, reliability, and confirmatory factor structure of the Persian version of the Motivation and Emotion Self-Regulation Questionnaire (EMSR-Q).

Method

The current research design is descriptive and psychometric. The statistical population of the research was all middle and high school students of Semnan city, of which 310 people were selected by random sampling.

Tools

1. Farsi version of Emotional and Motivational Regulation Questionnaire (EMSR-Q): Emotional and Motivational Regulation Questionnaire of Alonso-Tapia, Calderon, and Ruiz (2014) in order to evaluate the five factors of avoidance-oriented self-regulation, performance-oriented self-regulation, negative self-regulation Stress, positive motivational self-discipline, and process-oriented self-discipline were formed. This scale has 21 items and five subscales. The items are on

a 5-point Likert scale from 0=never to 4=always. The scores of this questionnaire show how students regulate their positive and negative emotions; according to the reviews and views in the field of learning, each of these emotions affects the learning activities and individual motivation of students (Alonso-Tapia, Calderon, and Ruiz, 2014).

2. Academic Motivation Questionnaire (EM): This questionnaire was designed by Harter (1981) to investigate academic motivation among students. This tool has 33 items. The items of this questionnaire are on a 7-option Likert scale from 1=never to 7=almost always. The scoring method is reversed in questions 3, 4, 5, 9, 10, 15, 16, 19, 21, 27, 31, so that on a Likert scale of 7, an option is placed from 7= never to 1=almost always. The validity and reliability of this scale in Iran has been investigated by Bahrani (1388), who reported Cronbach's alpha of 0.92 for this scale (Bahrani, 1388).

۳. Cognitive Emotion Regulation Questionnaire (CERQ): This scale was created by Garnofsky and Kraaij (2007). It is a 36-item self-report scale to assess people's cognitive coping strategies after negative events or circumstances. This questionnaire evaluates nine cognitive strategies of self-blame, acceptance, rumination, positive refocusing, refocusing on planning, positive reappraisal, perspective-taking, catastrophizing, and blaming others. Each question ranges from 1=almost never to 5=almost always. The validity and reliability of this scale in Iran have been examined by Hasani (2010), the Cronbach's alpha range of the subscales of this tool was between 0.76 and 0.92, and the retest correlation coefficient of the tool was reported between 0.51 and 0.77 (Hasani, 2010).

Results

The mean and standard deviation of the age of the subjects was 14.97 and 1.74 years, respectively. Before checking the reliability and validity of the Persian version of the Self-Regulation Questionnaire of Motivation and Emotion, the validity of the content of the scale was checked with two qualitative and quantitative methods. In the qualitative validity assessment, eight psychologists confirmed the content of the scale. Ten psychology experts expressed their opinion about the questionnaire items in the quantitative validity dimension, and the content validity index and content validity ratio were calculated. As can be seen in Table 1,

both the content validity index and content validity ratio are at an excellent level.

In order to check the validity of the Persian version of the motivation and excitement self-regulation questionnaire, two methods of internal consistency and item set correlations were used. In examining the internal consistency of the questionnaire, Cronbach's alpha was calculated separately for girls, boys, and all subjects. Also, to check which item fits well with which subscale, item set correlations (correlation of an item with the total score of the corresponding scale without adding items) were calculated. The results show that the obtained Cronbach's alpha coefficients are psychometrically satisfactory for all subscales. Also, the range of most of the correlations of the material set is more significant than 0.4. Therefore, the subscales of the Persian version of the motivation and excitement self-regulation questionnaire have good internal consistency. In order to check the criterion validity of the Persian version of the motivation and emotion self-regulation questionnaire, concurrent validity (simultaneous execution with the cognitive emotion regulation strategies questionnaire and the academic motivation questionnaire) was used. Also, the correlation coefficients between the subscales of the Persian version of the self-regulation questionnaire of motivation and excitement were calculated. The findings of Table 2 show that there are good internal relationships between the subscales of the Persian version of the motivation and excitement self-regulation questionnaire.

Also, the pattern of correlation coefficients of the subscales of the Persian version of the Self-Regulation Questionnaire of Motivation and Emotion with the included cognitive regulation strategies of emotion and academic motivation indicates the good concurrent validity of the Persian version of the Self-Regulation Questionnaire of Motivation and Emotion. In order to check the factor structure (construct validity) of the questionnaire, confirmatory factor analysis was used. In order to check the fit of the 5-factor structure of the Persian version of the Motivation and Emotion Self-Regulation Questionnaire with the major scale, confirmatory factor analysis with the maximum likelihood method was used at the level of the variance-covariance matrix. In order to fully fit the model with the data, it was tried to improve the model by freeing some parameters based on adjustment

indices. For this purpose, several parameters were released based on the proposed indicators of the model, the theoretical foundation of the motivation and excitement self-regulation questionnaire, and considering the correlation between the obtained factors. The path diagram of the confirmatory factor analysis after releasing these parameters, along with the path coefficients and initial fit indices, can be seen in Figure 1. Based on the path coefficients in Figure 1, it can be said that all the coefficients are at the optimal level, and the relationships between the items and the subscales are at a high level. Finally, composite reliability, average extracted variance, maximum common variance, and average common variance were calculated to determine convergent and divergent validity based on the final model. The results of Table 5 show that each subscale (AVE) is $CR >$ and $AVE > 0.5$. As a result, the components have convergent validity. In addition, because for each subscale, $MSV < AVE$ and $ASV < AVE$, the divergent validity of the subscales is favorable.

Conclusion

The study aimed to determine the validity, reliability, and confirmatory factor structure of the Persian version of the Motivation and Emotion Self-Regulation Questionnaire (EMSR-Q). In order to check the validity of the scale, the total item correlation and internal consistency methods were used. The research results showed that the Persian version of the motivation and emotion self-regulation questionnaire has good validity. The Cronbach's alpha coefficient range ranged from 0.71 to 0.86 (with an average of 0.91), and the range of most item correlations was greater than 0.4. In this study, confirmatory factor analysis was used to examine the factor structure and construct validity of the Persian version of the Self-Regulation of Motivation and Emotion Questionnaire. The confirmatory factor analysis results supported the five-factor structure (avoidance-based self-regulation, performance-based self-regulation, negative stress self-regulation, positive motivational self-regulation, and process-oriented self-regulation) and the distribution of test items was consistent with the original test. Investigations show that the five factors of this questionnaire are centered around the two main learning styles and avoidance. Based on the disciplined learning style, the more students think about the processes and give themselves positive self-motivational

messages, the less they will think about abandoning that assignment. These results are consistent with the findings of Holman et al. (2010). The avoidant self-regulation style states that the more students think about the stressful emotions caused by assignments, the less they will think about abandoning that assignment. These results are consistent with Senko, Hulleman, and Harackiewicz's (2011) findings.

In general, the appropriate reliability and validity coefficient of the self-regulating motivation and excitement questionnaire, its brevity and ease of implementation, and conditions of use in different groups and situations enable researchers to use this scale in a wide range of research, education, and clinical practice. Considering that no research is free of limitations, the first limitation of the current study is conducting the research with self-report instruments that may be subject to bias. The second limitation of this tool is related to the spatial and temporal scope of the study. This study was conducted on the students of Semnan city, and therefore its findings cannot be generalized to other cities and other strata, and in case of generalization, caution should be observed. Based on these limitations, the motivation and emotion self-regulation questionnaire scores should be examined with other measurement methods such as structured clinical interviews, peer behavior ratings, or behavioral assessments. In addition, it is recommended to conduct further research with more representative samples of the student population to check the discriminant validity. It is also suggested to examine the relationship between the motivation and emotion self-regulation questionnaire with various variables of mental health, health promotion, substance abuse, loneliness, etc., so that through this, a coherent knowledge about the motivation and emotion self-regulation questionnaire, in schools and relationships of this The structure can be achieved with other structures that have more capability in related planning.

Conflict of Interest

According to the authors, this article has no financial sponsor or conflict of interest.

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