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Scale Construction: Motivation and Relationship Scale in Education

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ABSTRACT

The aim of this study is to analyze the validity and reliability of the Turkish version of Motivation and Relationship Scale (MRS), (Raufelder , Drury , Jagenow , Hoferichter & Bukowski , 2013).Participants were 526 students of secondary school. The results of confirmatory factor analysis described that the 21 items loaded three factor and the three-dimensional model was well fit (x2= 640.04, sd= 185, RMSEA= .068, NNFI= .90, CFI = .91, IFI=.91,SRMR=079, GFI= .90,AGFI=.87). Overall findings demonstrated that this scale is a valid and indicates that the adapted MRS is a valid instrument for measuring secondary school children's motivation in Turkey.

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Keywords:
Motivation, relationship, validity, reliability, confirmatory factor analysis

INTRODUCTİON

Motivation is a power that dynamises behaviors of individuals for certain purposes, directs these behaviors and ensures those to maintain consistently (Demiral and Acat, 2002). Examining motivation within educational environment, it is a process that emerges by dealing with all factors in educational environment (teacher, student, environment, attitude of students etc.) and evaluating relations between them (Akbaba, 2006). It is a fact that motivation plays a significant role on revealing creativity of students, developing a style in respect to learning and increasing school success (Dede and Yaman 2008). In this context, it can be said that motivation is closely related to learning. The style of students on learning specific to themselves is evaluated within the scope of motivation. Therefore it can be said that learning will be more effective and as desired within the educational environments in where the styles of students on learning are considered (Bozkurt and Aydoğdu 2009). While considering learning styles, the question of how learning will be realized on individuals brings inter-personal differences into the forefront. Educational environment, in where individual differences are considered, is an environment proper to learning style (Bozkurt and Aydoğdu 2009). There are some internal factors effecting learning motivation, including concern of individuals on accomplishment, characteristic feature and attitude and environmental factors including reinforcers that are presented to student for directing her/him to targeted behaviors (Akbaba, 2006). It is a fact that there is relationship between motivation and learning and learning styles of individuals. These learning styles vary from individual to individual. Teachers should not ignore this difference on influencing motivation of students. Accordingly, teachers may have some liabilities to motivate students. It is declared that internal and environmental factors are associated with motivation and should be examined multilaterally. Will of student on featuring her/his own creativity and exhibiting a genuine attitude is very important with regard to internal motivation. Considering individual differences, that teachers determine reinforcers to direct students to learning is evaluated in terms of environmental factors (Akbaba, 2006). Academic success related to motivation is seen as a significant factor over students influencing them in this field. There are many factors on such environments that influence students to attain success in educational environments and their motivation processes (Ames, 1987; Brophy, 1987). Schools and teachers in charge influence students to involve them in educational environments and support them within this period. Those who have some adaptation problems with school feel themselves far from the environment and school due

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to lack of sense of belonging towards their schools (Mouton and Hawkins, 1996). When considered from this point of view, teachers seem to play a key role on motivating actions as integrating students to educational environments. Relation of motivation with formerly specified academic success may be ensured by involving students in educational environments and supporting them. In this context, involvement of students in educational environments is within the scope of school events as well as that it plays a key role on formation of an effective learning environment (Kenny, Kenny and Dumont, 1995). At this point, formation of an effective motivation process contributes to progress of attitudes and perceptions of individuals towards educational environments. However, some negative attitudes and perceptions are being developed pertaining to this issue. And this is related to students that how they deal with negative motivating process against other stimulant in school and environment. Positive or negative attitudes that students acquire about school environments play a key role on influencing their academic achievements. Absence of a similar scale in educational environments measuring motivation, relations and manner of perceptions of individuals on motivation became an incentive for conducting this study in our country. This study is thought that it may provide a basis for the studies which determine perception level regarding motivation of related age group and creates resource in order to fulfill the gaps within the studies. As being extremely economic in implementation in terms of time and accessible to target group, purpose of this study is to examine the validity and reliability of motivation and relation scale (MRS) on the sample including middle-school students.

METHOD

This research is the study of scale adaptation and conducted via "survey model". Students are tested with the Turkish version of Motivation and Relation Scale (MRS) within this model.

Participants

The participants of this research included 526 students from a public school located in Sakarya, Turkey**.** 233 participants were male and 293 participants were female which constituted 44.7% of the sample.

Tools of Data Collection

Motivation and Relation Scale (MRS) is an assessment tool developed by Diana Raufelder, Kate Drury, Danilo Jagenow, Frances Hoferichter and William Bukowski (2013). It consists of three sub-dimensions namely Peers as Motivators (PM) , Individual Learning Behaviors (ILB) and Teachers as Motivators (TM) and 37 items which are divided as follows : PAM (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15), ILB (16, 17, 18, 19, 20, 21) and TAM (22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37). The items are responded on 4-point Likert-scale ranging from "strongly disagree", "disagree", "agree", to "strongly agree".

Procedure

Prior to the study, the first authors of the development study of MRS were contacted for the permission of adapting the MRS into Turkish via e-mail. Upon their approval, the present study was conducted. MRS was primarily translated into Turkish by three English teachers and the needed arrangements were done after the translations were examined. Next, the same group of English teachers translated the target language back into the source language (English) , compared to the original version in terms of consistency and then final Turkish version was attained by negotiating upon all turkish versions. Various arrangements were done after the trial form was examined by professionals of evaluation and assessment field. By carrying out the confirmatory factor analysis (CFA), adaptation of the original scale into Turkish culture was confirmed after assessing the scale in terms of validity and reliability. Besides of these assessments, the scale was analysed in terms of item-total correlations and internal consistency reliability. LISREL 8.54 and SPSS 22.0 package programs were used during the data analysis process.

FINDINGS

As a result of this analysis, it is seen that Motivation and Relation Scale has an internal consistency reliability coefficient of .73.Item analysis is done to determine the discriminating ability of MRS items.As a result of this item analysis it is seen that corrected item-total correlation coefficients have a range of values from .08 to .50.Item-Total Correlations for the Turkish Version of RMS are displayed Table 1.

Table 1: Item-Total Correlation for the Turkish Version of RMS

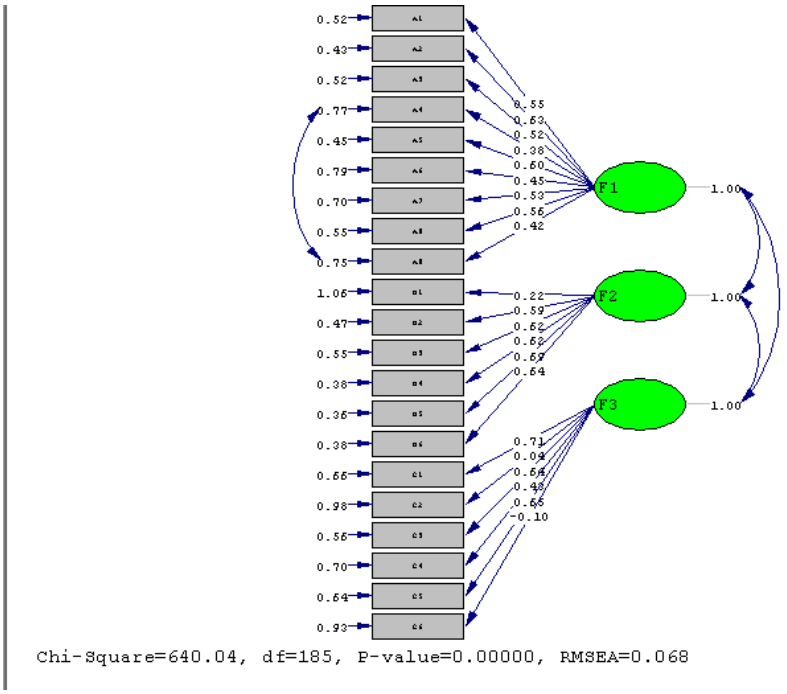
Items	Item-Total Correlation (r_{jx})
1.Arkadaşlarım bana zeki olduğumu söyledikleri için okulda çaba göstermeyi severim	.39
2.Arkadaşlarımın beni motive etmesi okuldaki başarımın daha iyi olmasını sağlıyor.	.42
3.Arkadaşlarım öğrendiğinde daha fazla öğrenmek için motive oluyorum.	.38
4.Arkadaşlarım okulda kendilerini geliştirmek istediğinde ben onlardan daha iyi olmayı istiyorum.	.35
5.Arkadaşlarım beni motive ettiğinde okulda çaba gösteriyorum.	.48
6.Okulda arkadaşlarımın gösterdiği çaba ile aynı çabayı göstermeye çalışıyorum.	.37
7.Arkadaşlarımla ben okulda gayret göstermemiz için birbirimizi motive ediyoruz.	.37
8.Arkadaşlarımın sayesinde okulda daha fazla çaba göstermeye çalışıyorum.	.50
9.Arkadaşlarım bir sınav için bana çok çalıştıklarını söylerlerse ben onlardan daha çok çalışırım.	.39
10. Okuldaki gayretimin az olması arkadaşlarımın daha çok dikkatini çeker.	.20
11.Arkadaşlarımın okula ilgisi olmazsa bende gayret göstermek istemem.	.13
12.Arkadaşlarım beni okul çalışmalarına olabildiğince az zaman harcamaya teşvik ediyor.	.14
13.Bazen, arkadaşlarım sınavın hoş olmadığını söyledikleri için okulda çaba harcamam	.12
14. Arkadaşlarım iyi notların bir şey ifade etmediğini söylerse daha az çalışırım.	.08
15. Arkadaşlarım okulu sıkıcı bulduğunda ben de okulu sıkıcı bulurum.	.10
16. Başkaları ile çalıştığıma kıyasla, kendi başıma çalıştığımda daha iyi öğrenirim.	.32
17. Arkadaşlarım ve ben bir test için birlikte çalıştığımızda çalışmak daha kolaydır	.25
18.Sınav yaklaştığında kendim çalışmayı tercih ederim.	.26
19.Ödevimi asla arkadaşlarımla değil her zaman kendim yaparım.	.29
20.Arkadaşlarımla çalışmaktansa kendi kendime çalışmak okuldaki başarımı kolaylaştırır.	.23
21. En iyi şekilde arkadaşlarımla birlikte çalıştığımda öğrenirim.	.21

Construct Validity

Confirmatory Factor Analysis (CFA) is highly recommendable for the researchers focusing on clear hypotheses about a scale such as the number of factors or dimensions underlying its items, connection between certain items and certain factors, and the link between factors.By applying CFA, researchers assess "measurement hypotheses" relating to internal structure of a scale. CFA allows researchers to assess the degree of consistency between their hypotheses and the actual data of the scale.(Fur and Bacharach,2008)

The conclusion of confirmatory factor analysis indicated that the eight-dimensional model was well fit **(**x2= 640.04, sd= 185, RMSEA= .068, NNFI= .90, CFI = .91, IFI=.91,SRMR=079, GFI= .90,AGFI=.87**).**

Factor loadings and path diagram for Turkish version of MRS are displayed in Figure 1.



DISCUSSION AND RESULT

In this study, the purpose is to adapt MRS which was developed by Raufelder and others (2013) into Turkish and to examine validity and reliability of Turkish form. The groups which are studied on validity and reliability are quantitatively sufficient that are necessitated by statistical analyses (Tabachnick&Fidell, 2007). Structural validity of MRS has been examined by DFA. In consequence of DFA, the scale has been found that it has three dimensions just as original form and structural validity of the scale has been provided. Considering limits of adaption index of DFA, it can be said that the model works and original factor structure of the scale corresponds to factor structure of the Turkish form. Satisfactory reliability co-efficient of MRS indicates that the reliability is sufficient. If anticipated reliability level for measuring instruments to be used in studies is 70% (Sipahi, Yurtkoru, & Çinko, 2008), it may be concluded that reliability of MRS has been provided. Considering item analysis, it is seen that some items within the scale has not reached to 30%. Taking the motivation within three dimensions provides to approach the motivation from various aspects and to ascribe various meanings. It is quite important for measuring the motivation and relation (MRS) that each item within the scale is related and consistent with each other. In this context, it may be concluded that motivation must be handled multi dimensionally according to the data acquired from the student involved in the study group. However it is possible to say that peer relationship is important but not sufficient solely. Considering the findings acquired from MRS and examining with respect to validity and reliability, it is not inconvenient to use the scale. The study, eventually, includes middle-class students of 6, 7, 8th classes; but it can be said that items within the scale may appeal to various age groups and also these groups may be studied as well. The scale has been applied by keeping the original form, considering confirmatory factor analysis (DFA), comparing with validity and reliability values within original form, it has been found that the values found are not far from each other. Though the motivation is an internal process and emerged through various ways within various age groups, implementation of MRS within the high school level is important for it expands research group, on the purpose of making scale items inclusive and questioning. Obtaining reliable and valid results for determination of motivation and relation on middle-class students who compose the research group necessitates the scale to be used in this form. With

reference to the findings, it is possible to say that the scale is proper to apply in different population and samples as well. However it can be concluded that expanding the research age group extents the scope of the study and contributes to other studies in this field. The suggestions that can be given for contributing to other studies which may utilize the study in accordance with the findings of this study are as follow: Teachers should regard that grading is not sufficient solely to motivate students and consider himself/herself as a significant incentive within the scope of student-teacher relationship. Moreover, they should express that student play role on motive of individual learning behaviors and students should care peer relationship.

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ASPENDIX

Motivasyon ve İlişki Ölçeği

Her sorunun karşısında bulunan; (1) Tamamen Katılmıyorum (2) Katılmıyorum (3) Katılıyorum (4) Tamamen Katılıyorum anlamına gelmektedir. Lütfen her ifadeye mutlaka TEK yanıt veriniz ve kesinlikle BOŞ bırakmayınız. En uygun yanıtları vereceğinizi ümit eder katkılarınız için teşekkür ederim.

Olumlu Motive Edici Olarak Akranlar		**11**	**22**	**33**	**44**
1	Arkadaşlarım bana zeki olduğumu söyledikleri için okulda çaba göstermeyi severim.				
2	Arkadaşlarımın beni motive etmesi okuldaki başarımın daha iyi olmasını sağlıyor.				
3	Arkadaşlarım öğrendiğinde daha fazla öğrenmek için motive oluyorum.				
4	Arkadaşlarım okulda kendilerini geliştirmek istediğinde ben onlardan daha iyi olmayı istiyorum.				
5	Arkadaşlarım beni motive ettiğinde okulda çaba gösteriyorum.				
6	Okulda arkadaşlarımın gösterdiği çaba ile aynı çabayı göstermeye çalışıyorum.				
7	Arkadaşlarımla ben okulda gayret göstermemiz için birbirimizi motive ediyoruz.				
8	Arkadaşlarımın sayesinde okulda daha fazla çaba göstermeye çalışıyorum.				
9	Arkadaşlarım bir sınav için bana çok çalıştıklarını söylerlerse ben onlardan daha çok çalışırım.				
Olumsuz Motive Edici Olarak Akranlar					
10	Okuldaki gayretimin az olması arkadaşlarımın daha çok dikkatini çeker.				
11	Arkadaşlarımın okula ilgisi olmazsa bende gayret göstermek istemem.				
12	Arkadaşlarım beni okul çalışmalarına olabildiğince az zaman harcamaya teşvik ediyor.				
13	Bazen, arkadaşlarım sınavın hoş olmadığını söyledikleri için okulda çaba harcamam.				
14	Arkadaşlarım iyi notların bir şey ifade etmediğini söylerse daha az çalışırım.				
15	Arkadaşlarım okulu sıkıcı bulduğunda ben de okulu sıkıcı bulurum.				
16	Başkaları ile çalıştığıma kıyasla, kendi başıma çalıştığımda daha iyi öğrenirim.				
17	Arkadaşlarım ve ben bir test için birlikte çalıştığımızda çalışmak daha kolaydır				
18	Sınav yaklaştığında kendim çalışmayı tercih ederim.				
19	Ödevimi asla arkadaşlarımla değil her zaman kendim yaparım.				
20	Arkadaşlarımla çalışmaktansa kendi kendime çalışmak okuldaki başarımı kolaylaştırır.				
21	En iyi şekilde arkadaşlarımla birlikte çalıştığımda öğrenirim.				