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Adaptation of the Early Childhood Reading Motivation Scale to Turkish: A Validity and Reliability Study

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The aim of this study is to adapt the Early Childhood Reading Motivation Scale to Turkish. A general survey model was used as the research method. The study group of the research consists of 571 primary school students aged 6-7 years. The Early Childhood Reading Motivation Scale to be adapted into Turkish was used as the data collection tool, while the Reading Skills Assessment Scale was used in the external criterion validity analysis. The SPSS 22.0 and LISREL 8.5 statistical software programs were used for data analysis. Following the validity and reliability analyses, it was concluded that the Early Childhood Reading Motivation Scale is a valid and reliable scale for measuring reading motivation in primary school students aged 6-7. When the literature was examined, it was seen that there were not enough scale development or adaptation studies to examine early childhood reading motivation. In this sense, it is thought that this study will have an important place in the literature.

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Keywords: Reading motivation, early childhood, scale adaptation

INTRODUCTION

Motivation is defined as an impulse or driving force that prompts the individual to perform behaviors necessary to achieve a certain goal (Akbaba, 2006; Ames, 1990; Harmer, 2001; Pala, 2007; Ryan & Deci, 2000; Song & Keller, 2001). Since motivation, whose importance has increased following studies conducted in recent years, is an effective factor in learning, it has taken its place as a research subject in the field of education. Reading motivation for the development of reading skills has attracted particular attention (Wasik & Turner, 1991; Paris & Turner, 1995; Wigfield & Guthrie, 1997; Guthrie & Wigfield, 2000).

Although reading is regarded as a cognitive process, research into the effect of the motivation factor has intensified in recent times. In fact, one of the key factors in acquiring and maintaining reading habits is motivation because, in addition to cognitive processes, motivational processes also play a role in understanding the text that is read (Durmuş, 2014; Wang & Guthrie, 2004). The process defined as reading motivation is expressed as internal and external factors affecting the person in the form of individual beliefs, values and goals that affect reading (Guthrie & Wigfield, 2000; Katrancı, 2015; Wang & Guthrie, 2004). Reading motivation, which affects the time people set aside for reading, their reading tendencies, and the effort they make in the process, is a key factor that creates curiosity and interest in reading. A number of subtopics are discussed regarding reading motivation, such as whether people tend to read voluntarily or depending on external factors, the way they define themselves as readers, the beliefs they develop about reading, and the cognitive processes they refer to during the reading process (Yıldız & Aktaş, 2015).

When the literature is examined, it can be seen that there are various theories and studies explaining the relationships between reading motivation, reading habits and reading comprehension. According to these models, there is a cyclical relationship between reading activities, reading achievement, reading comprehension capacity and reading motivation. Readers defined as good readers tend to read more because they have more motivation to read. As a result, their comprehension skills and vocabulary also develop. The more their reading speed and comprehension capacity increase, the more their tendency to read will increase (Dökmen, 1995; Stanovich, 1986). Therefore, it can be said that students with higher motivation will have higher reading skills and a greater reading comprehension capacity and that at the same time, students with higher reading skills will have higher motivation and a greater tendency to read.

Reading motivation consists of two sub dimensions: intrinsic motivation, which a person develops based on his or her interest and curiosity for something, and extrinsic motivation, which is developed due to external factors (Deci, Connell & Ryan, 1989; Ryan & Deci, 2000). Intrinsic motivation is the acquisition of a behavior without any coercion (Middleton & Spanish, 1999; Raffini, 1996). The most basic foundation of intrinsic motivation is enjoyment. Extrinsic motivation, on the other hand, is the acquisition of a behavior

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based on values and rewards existing outside the person (Deci, Vallerand, Pelletier & Ryan, 1991). The reward and punishment system is effective in the regulation of behaviors by extrinsic motivation. In motivations such as these, the person is given an external stimulus, such as the student who studies to not obtain low grades. Intrinsic motivation, on the other hand, can be expressed as the student who studies because he or she does not want to be a failure. Intrinsic and extrinsic motivation have a negative relationship with each other. In some studies, it has been observed that extrinsic reward has a negative effect on intrinsic motivation (Campeau, 1994; Cerasoli, Nicklin & Ford, 2014; Deci, Ryan & Koestner, 1999; Dweek, 1985; Hayamizu, 1997; Koestner, Ryan, Bernieri & Holt, 1984; Stipek, 1998). On the other hand, there are studies arguing that both types of motivation can work in harmony by complementing each other. According to these studies, extrinsic motivation does not have a negative impact on intrinsic motivation (Cameron, Banko & Pierce, 2001; Gambrell & Marinak, 1997; Ryan & Deci, 2000; Wang & Guthrie, 2004; Yıldız, 2010).

In addition to the mutual effects of extrinsic and intrinsic motivation, it is important to determine which type of motivation is more effective in promoting the desired behavior. In a previous study, it was concluded that intrinsic motivation was positively correlated with positive outcomes such as emotional commitment and job performance, while extrinsic motivation was negatively correlated or uncorrelated with positive outcomes (Kuvaas, Buch, Weibek, Dysvik & Nerstad, 2017). In studies examining the relationship between reading and motivation, it has been observed that students with high intrinsic motivation are more successful in remembering and understanding the text they read than students with high extrinsic motivation. This result can be interpreted to indicate that intrinsic motivation has more effective power in reading (Schiefele, Schaffner, Möller & Wigfield, 2012; Vansteenkiste, Lens & Deci, 2006; Yıldız, 2010; Yıldız & Akyol, 2011). Students with high intrinsic motivation to read tend to read more and can always allocate time to reading. In contrast, students with low intrinsic motivation to read tend to avoid reading and are unable to read for long periods. This situation can be explained by the concept of amotivation, which means a lack of motivation (Guthrie & Coddington, 2009; Ryan & Deci, 2000; Wigfield & Guthrie, 1997). Therefore, in studies conducted on reading, measuring reading motivation can contribute to identifying the variables needed for students to be successful in reading. Determining students' motivation to read, especially in the early literacy period, can enable students to develop their literacy learning and reading comprehension skills and to become good literates in their future lives (İleri Aydemir & Öztürk, 2013; Kurnaz & Yıldız, 2015).

There are different approaches to the measurement of intrinsic motivation. One of these is the method named 'basic experimental research', in which intrinsic motivation is measured via behaviors. In this method, participants are asked to perform a task under varying conditions. After a time, the task is terminated, but the participants are allowed to remain alone in the room with the target task. If they continue to perform the target task even though there is no extrinsic reason such as a reward or punishment, this indicates that they are motivated for the target task. The time they spend on the task and their motivation levels are directly proportional (Ryan & Deci, 2000). Another common method is to determine the interest and attachment that people have toward a task by means of a scale (Kuvaas, 2006; Ryan & Deci, 2000).

In the literature, various scales have been developed to determine students' reading motivation. It can be said that the content and dimensions of these scales are similarly structured on four basic factors: intrinsic motivation, extrinsic motivation, self-efficacy and social motivation (Pelletier, Blais, Briere, Senegal & Valliere, 1992; Guthrie & Klauda, 2014; McKenna, Kear & Ellsworth, 1995; Schiefele & Schaffner, 2016; Vallerand, Wang & Guthrie, 2004; Wigfield & Guthrie, 1997). In our country, too, various scales have been originally developed or adapted to Turkish to determine reading motivation in individuals of different age groups (Bozgün & Akin Kösterelioğlu, 2020; Durmuş, 2014; İleri, Aydemir & Öztürk, 2013; Katrancı, 2015; Kurnaz, 2019; Ülper, 2011; Ünsal Batum, 2015; Yıldız, 2010; Yıldız & Aktaş, 2015; Yıldız, Yıldırım, Ateş & Çetinkaya, 2013). In addition to this situation, there are not enough early childhood reading motivation scale development or adaptation studies in our country.

Therefore, considering that the measurement of reading motivation, which occupies an important place in reading studies, in early childhood will affect the reading achievement and processes of students at later ages, it is thought that this study will make important contributions to the field. The aim of this study is to adapt the Early Childhood Reading Motivation Scale, originally developed in English by Baker and Scher (2002), to Turkish and to conduct a validity and reliability study.

METHOD

Research Model

The research in which the Turkish adaptation and validity-reliability analyses of the Early Childhood Reading Motivation Scale developed by Baker and Scher (2002) were made was designed using a general survey model. The survey model is a research model used to describe views or attitudes regarding the study population quantitatively/numerically by means of a sample (Creswell, 2016). In this study, the aim is to test the validity-reliability of the Early Childhood Reading Motivation Scale with children attending the first grade of primary school in our country.

Study Group

The research study group consists of 571 students aged 6-7 years studying in the first grade of primary schools in the district center of Konya during the 2021-2022 academic year. Among the students in the study group, 350 were girls and 221 were boys. Information about the study group is given in Table 1.

Table 1. *Descriptive statistics of the study group*

Descriptives		f	%
Gender	Girl	350	61.29
	Boy	221	38.70
Age	6	410	71.80
	7	161	28.19
Total		571	100

Kline (2015) states that when determining the sample size in scale validity-reliability studies, care should be taken to ensure that it is more than 10 times the number of scale items. Similarly, Bryman and Cramer (2001) state that the sample size should be at least five times the number of items in the scale and, if possible, approximately ten times the number of items (Tavşancıl, 2002). Based on this point of view, it can be said that the sample of 571 people is appropriate for this study when the number of 160, which is ten times the number of items, is taken as the base number in the validity and reliability of the Early Childhood Reading Motivation Scale consisting of 16 items.

Data Collection Tools

Within the scope of the research, the Early Childhood Reading Motivation Scale, which was intended to be adapted to Turkish, was used as the data collection tool, while the Reading Skills Assessment Scale was used to test the external criterion validity of the scale.

Early Childhood Reading Motivation Scale: This scale, which was developed by Baker and Scher (2002), is a four-point Likert-type scale with 16 items. The scale consists of four sub dimensions: enjoyment (Items 1, 4, 7, 8, 9, 13 and 14), perceived value (Items 5, 6, 12 and 16), perceived competence (Items 3, 11 and 15), and library interest (Items 2 and 10). Some of the items belonging to the sub dimensions of the scale are listed below:

Item 4: Regal likes to be read to, Cha Cha doesn't like to be read to, Are you more like Regal or Cha Cha?

Regal: do you really like to be read to a lot, or do you sort of like to be read to?

Cha Cha: would you say you don't like to be read to at all, or is it O.K. sometimes?

Item 12: Regal thinks people can learn new things from books, Cha Cha doesn't think people can learn new things from books, Are you more like Regal or Cha Cha?

Regal: can people learn lots of new things from books, or just a few?

Cha Cha: Can people learn a few new things from books, or none at all?

Item 15: Regal thinks he/she will be a good reader, Cha Cha doesn't think he/she will be a good reader, Are you more like Regal or Cha Cha?

Regal: do you think you will be a really good reader, or just an O.K. reader?

Cha Cha: do you think you won't be good at reading at all, or that you might be an O.K. reader?

Item 2 : Regal likes to get books from the library, Cha Cha doesn't like to get books from the library. Are you more like Regal or Cha Cha?

Regal: do you really like to get books from the library, or do you sort of like to get books from the library?

Cha Cha: would you say you don't ever like to get books from the library, or is it O.K. sometimes?

Since the scale was developed in accordance with the early childhood period (6-7 years), the items in the scale are expressions appropriate for the level of understanding of that age group, reflecting experiences that children can have at that age and maintaining a consistent response style. The response format involves children choosing which of two symbolic animal characters they think they resemble more. While one of the animals is shown to have a negative view of the item, the other animal is depicted as having a positive view (such as "..... is bored but..... is not bored when the teacher is reading a story. Who are you more like?"). The name of the animal representing positive and negative views in the items varies. For example, while animal A is a positive representation in one item, it can be a negative representation in another item. The reason for organizing the scale in this way is to prevent students from developing an attitude based on memorization while responding. After giving answers based on which of the two animals they resemble more, children are asked to indicate whether they resemble the animal in the expression 'a lot' or 'a little', with the aim of further differentiating their responses. If the student says that s/he is very similar to the animal representing the positive expression, he or she receives 4 (four) points, while s/he receives 3 (three) points if s/he says that s/he is slightly similar, 2 (two) points if s/he says that s/he is slightly similar to the animal representing the negative expression, and 1 (one) point if s/he says that s/he is very similar.

Reading Skills Evaluation Scale: This scale, which was developed by Bayat and Çelenk (2015) for first grade primary school students, consists of 14 three-point (yes-partly no) Likert-type items. The reading text (Bouncing Kangaroo) used in the scale was created by Bayat and Çelenk by taking into account the number of syllables, words and sentences and the order of the letters given according to the syllabus. In the process, which is carried out with the students individually, while the student reads the text, the researcher marks the reading skill criteria (for example, clean use of reading tools and devices, reading with attention to punctuation, reading without skipping a line) included in the scale.

Data Collection and Analysis

The necessary approvals were obtained from the Selcuk University Scientific Ethics Committee and the Konya Provincial Directorate of National Education prior to the application. The details of the implementation process were then evaluated by visiting the implementation school together with the school administration and first grade teachers. The students were informed about the scale, and voluntary behavior was taken into consideration. The study group consisted of first-year students. Therefore, the scale was applied individually to each student. The school library was used as an application environment as it was quiet and comfortable, and each student was assessed one at a time. The researcher read each item to the student at an appropriate pace and in an understandable way, avoiding any guidance that might influence the student's response. On average, each student's scale took 20 minutes to complete.

The SPSS 22.0 and LISREL 8.5 statistical software programs were used for the analysis of the data obtained in the study. In the process of adapting the Early Childhood Reading Motivation Scale to Turkish, its linguistic equivalence was ensured at the first stage, and then its content validity was ensured by seeking expert opinion. Confirmatory factor analysis (CFA) was performed for construct validity. To test the external criterion validity, scale equivalence was tested with a scale developed to measure a similar skill. For this purpose, the 'Reading Skills Assessment Scale' was administered to 40 students selected from within the sample, and the Spearman correlation coefficient was calculated for the mean scores they obtained. To test the reliability of the scale, the Cronbach alpha internal consistency coefficients were calculated for the total score and for each sub factor, while the item-test correlation coefficients were calculated to test the item validity. With the aim of determining its consistent measurement at different times, the Early Childhood Reading Motivation Scale was administered again to 50 students selected from within the sample three weeks after the main implementation, and the correlation coefficient was found. In addition, upper-lower 27% group comparisons were made to calculate the discriminatory power of the items.

RESULTS

The findings obtained from the validity and reliability studies of the Early Childhood Reading Motivation Scale are given in this section.

Linguistic Equivalence

First, the necessary permission for the adaptation of the Early Childhood Reading Motivation Scale to Turkish was obtained by e-mail from Linda Baker and Deborah Scher, who developed the original scale. In the process of ensuring the linguistic equivalence of the scale, it was translated into Turkish by an English

language expert. Subsequently, it was back-translated from Turkish to English, and the conformity of the scale was checked by four different linguists. As a result of this procedure, it was seen that the Turkish and English forms of the scale were equivalent to each other.

Content Validity

In the process of adapting the scale to Turkish, intelligibility, expression and linguistic validity studies were carried out. In this context, a form was prepared, and the opinions of 10 domain experts employed as faculty members in the field of education were obtained by adding the statements 'appropriate', 'inappropriate' and 'should be revised' for each item written in the scale. The content validity ratio (CVR) for an item is calculated by the formula $CVR = (N_e - N/2)/(N/2)$, where N = the total number of experts, and N_e = the number of experts giving their opinion as 'appropriate' (Yurdugül, 2005). In this context, the content validity ratio for the items in the scale is presented in Table 2.

Table 2. Content Validity Ratio of Items Based on Expert Opinions

Items	Appropriate	Inappropriate	Should be Revised	CVR
M1	10	0	0	1
M2	10	0	0	1
M3	10	0	0	1
M4	10	0	0	1
M5	9	0	1	0.8
M6	10	0	0	1
M7	9	0	1	0.8
M8	10	0	0	1
M9	10	0	0	1
M10	10	0	0	1
M11	10	0	0	1
M12	9	0	1	0.8
M13	10	0	0	1
M14	10	0	0	1
M15	10	0	0	1
M16	10	0	0	1

Number of experts: 10

Content Validity Criterion: 62%

Content Validity Index: 0.96%

In the literature, the acceptance criterion for content validity is specified as 0.62 (Yurdugül, 2005). When Table 1 is examined, it can be seen that according to the panel of 10 experts, the content validity index (CVI) for this study was calculated as .96 by taking the average of the content validity ratios (CVR) of all items. Since the CVI of the items on the scale was above .62, which is the acceptance criterion for content validity predicted for 10 experts in the literature, the content validity of the whole scale was evaluated as statistically significant. To avoid making any errors during the implementation process, a pilot implementation (reimplementation) was conducted with 50 first grade primary school students. As a result of pilot implementation, it was concluded that the scale was understandable and practicable, and it was decided not to make any changes to the scale.

Validity Analyses

The scale was administered to 571 students. Confirmatory factor analysis was performed to confirm the validity and factor structure of the scale.

Since the assumption of multivariate normality between the items was not met, parameter estimation was made using the asymptotic covariance matrix with the unweighted least squares (ULS) method (Mîndrilă, 2010). The t values, factor loadings and explained variance (r^2) statistics for the scale items are shown in Table 3.

Table 3. T Values and Significance Levels of Items as a Result of CFA of the Early Childhood Reading Motivation Scale

Scale Factors	Item No	Factor Loading	T Value	Explained Variance
Enjoyment	M1	0.66	21,55	0.43
	M4	0.71	24,68	0.50
	M7	0.54	15,14	0.30
	M8	0.61	18,31	0.37
	M9	0.48	11,97	0.23
	M13	0.27	4,97	0.07
	M14	0.66	18,19	0.43
Perceived Value	M5	0.34	8,37	0.12
	M6	0.67	21,96	0.46
	M12	0.67	22,06	0.45
	M16	0.58	14,86	0.34
Perceived Competence	M3	0.51	11,97	0.26
	M11	0.67	20,58	0.45
	M15	0.50	12,88	0.25
Library Interest	M2	0.53	9,95	0.28
	M10	0.60	13,29	0.37

For the CFA results to be significant at the .01 level, the t values should be above 2.56; to be significant at the .05 level, they should be above 1.96 (Çokluk et al., 2018). When Table 2 is examined, it can be seen that the t values are above 2.56. Therefore, all items in the scale are significant at the .01 level. In other words, it was not considered necessary to remove items from the scale.

In CFA, the relationship between latent and observed variables is explained by factor loading values and shown with a path diagram. The size of the factor loading value provides information about the degree of variability that the latent variable will create in the observed variable. In this study, it was observed that the factor loadings varied between 0.27 and 0.71. According to these values, it can be said that the factors in this study are related to the conceptual structure that they measure. All values related to the scale items were found to be significant. Therefore, no item was removed from the scale.

The fit indices for the model-data fit of the four-Factor 16-item scale are shown in Table 4. The fit indices were examined to assess whether the obtained data fit the four-factor model.

Table 4. Fit Indices for Model-Data Fit

Goodness-of-Fit Index	Acceptable Limit*	Value
χ^2/df	<5 Moderate fit <3 Good fit	236.66/98 = 2.42
GFI	>0.90	0.99
CFI	>0.90	0.97
NFI	>0.90	0.96
RFI	>0.85	0.95
SRMR	< 0.08	0.044
RMSEA	< 0.08	0.050

*Sources: Baumgartner & Homburg, 1996; Bentler, 1980; Kline, 2011

In confirmatory factor analysis, the chi-square goodness-of-fit test is used to evaluate data-model fit and is calculated with the ratio of the chi-square (χ^2) value to the degree of freedom (df). The chi-square statistic indicates a perfect fit if $\chi^2/df < 2$ and an acceptable fit if $\chi^2/df < 3$ (Kelloway, 1998). When Table 3 is examined, the degree of similarity as a result of the CFA was determined as chi-square statistic $\chi^2(98)=236.66$, degree of freedom (df)=98, and the ratio of the chi-square statistic to the degree of freedom (χ^2/df)=2.42. According to these data, it was concluded that the model is statistically significant and shows an acceptable level of fit. In other words, the model is statistically significant ($p < 0.01$).

RMSEA, which means the root mean square error of approximation, takes values between 0 and 1. An RMSEA value of less than 1 indicates poor fit, a value of less than .08 indicates good fit, and a value of less than .05 indicates perfect fit (Çokluk et al., 2018). In this study, the RMSEA value was found to be .05. This value shows that the fit index for the analysis is almost perfect.

A standardized root mean square residual (SRMR) value below .05 indicates perfect fit, while a value below .08 indicates good fit (Çokluk et al., 2018). In this study, the SRMR value was found to be .044. This value indicates that there is a perfect fit.

The normed fit index (NFI) is .96. Values between 0 and 1; values above .95 indicate perfect fit and values above .90 indicate acceptable fit (Sumer, 2000). According to Table 3, the NFI value indicates a perfect fit.

The goodness-of-fit index (GFI) value of the study is .99, and the comparative fit index (CFI) value is .97. The GFI and CFI values take values between 0 and 1, and if the value is above .95, it indicates perfect fit, while if it is over .90, it indicates good fit (Sümer, 2000). In addition, the relative fit index (RFI)=0.95 was calculated. It can be seen that the values obtained for all fit indices are within acceptable limits; therefore, the four-factor scale is confirmed.

Accordingly, the structural validity of the 16-item scale consisting of four sub dimensions is accepted. The path diagram for the scale items is shown in Figure 1.

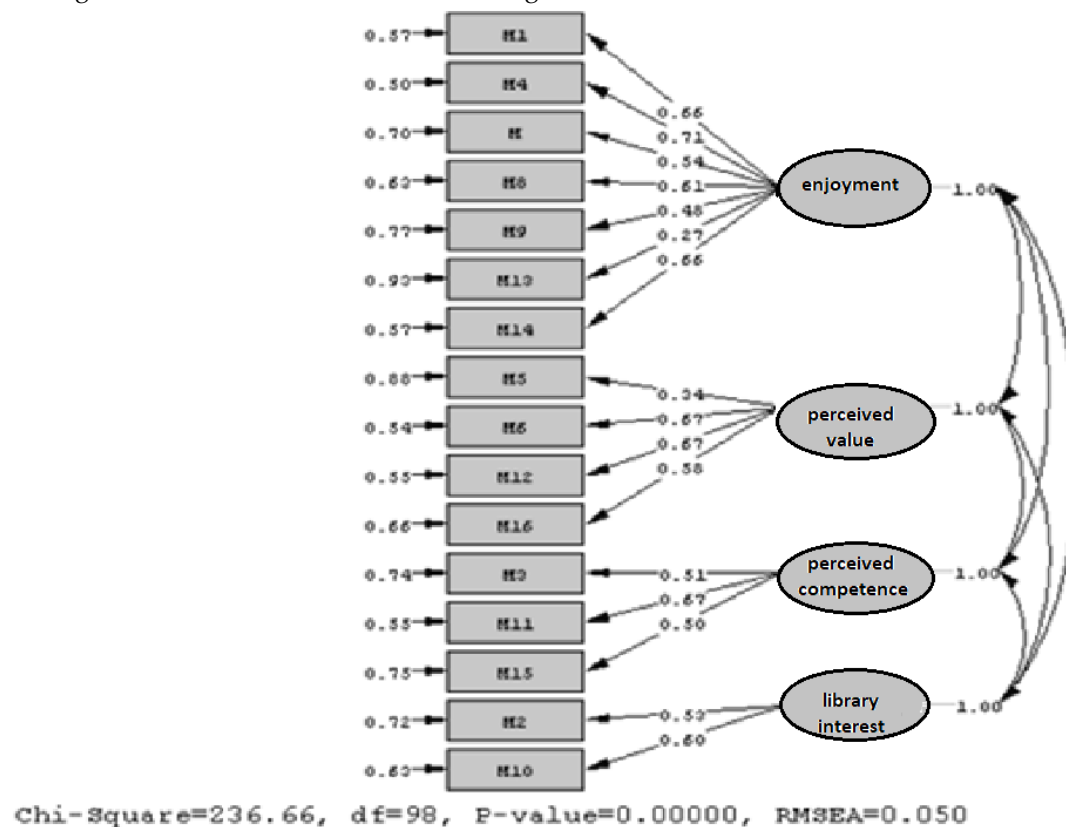


Figure 1. Confirmatory Factor Analysis Path Diagram

Within the scope of the construct validity of the Early Childhood Reading Motivation Scale, in addition to confirmatory factor analysis, the Spearman correlation test was used to test external criterion validity. For this purpose, the Reading Skills Assessment Scale (RSAS) was administered to 40 of the students to whom the Early Childhood Reading Motivation Scale (ECRMS) was administered. The Cronbach alpha reliability coefficient signifying the internal consistency of the scale used as the external criterion was found to be 0.861. The Spearman correlation test results are presented in Table 5.

Table 5. Correlation between ECRMS and RSAS

Spearman r	.426
p	.006
N	40

A significant moderate positive correlation of 0.426 was found between the adapted scale scores and the criterion scale scores ($p < 0.05$). In other words, the adapted scale scores and the scores of the scale considered as the external criterion vary together (Figure 2).

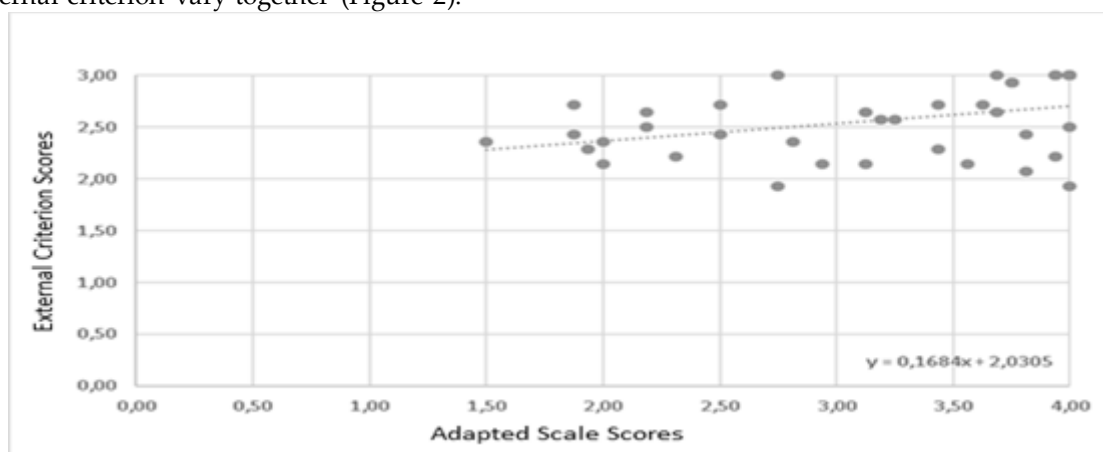


Figure 2. External Criterion Validity

Findings Regarding Reliability of the Scale and Item Analysis

The Cronbach alpha coefficient was used to test the reliability of the scale. The Cronbach alpha coefficient of the 16-item scale was calculated as 0.872, and it was concluded that its internal consistency is high. A minimum level of 0.70 is recommended for the reliability coefficient, which varies between 0 and +1 (Nunnally, 1978). The fact that the reliability coefficient of the scale is close to +1 means that its reliability is high and as desired. The item-total correlations, also known as item validity coefficients, of the scale items are shown in Table 6. The concept of item validity provides test/scale developers and researchers with a number of numerical and personalized question suggestions or hints as to the extent to which the relevant test/scale item serves the purpose of measurement (Otbiçer Acar, 2020).

Table 6: Item-Total Correlations

Item No.	Item-Total Correlations	Cronbach's Alpha
M1	.602	0.872
M2	.637	
M3	.506	
M4	.558	
M5	.441	
M6	.253	
M7	.595	
M8	.310	
M9	.615	
M10	.611	
M11	.562	
M12	.483	
M13	.615	
M14	.456	
M15	.403	
M16	.474	

The item validity indicator varies between -1.00 and +1.00, producing a correlation coefficient. The correlation coefficients between the items and total scores range between 0.253 and 0.637. Since the item-total

correlation coefficients of all items were found to be higher than 0.20, it was not considered necessary to remove any item.

In addition to the internal consistency analysis, the consistency of responses received from implementation of the scale at two different times was examined, and test-retest analysis was performed to test the reliability of the scale. For the test-retest, the scale was administered to a group of 50 people selected from within the sample. The Spearman correlation coefficient, which was calculated for the consistency of the measurements, is shown in Table 7.

Table 7. Spearman Correlation Coefficient

Spearman r	.223
p	.119
N	50

The correlation coefficient obtained from the scale administered to the same people at two different times is 0.223, which is positive and low. The correlation that was found is not significant, and the positive correlation indicates that the total scale scores obtained at two different times vary together. High internal consistency was obtained between the items in each administration, and the Cronbach alpha reliability coefficients are shown in Table 8.

Table 8. Internal Consistency Coefficients of Scale

	Cronbach's Alpha	Number of Items
1st administration (n=50)	.942	16
2nd administration (n=50)	.882	16

For the validity of the scale items, item analysis was also performed with the lower-upper group method. After ranking the total scale scores, the lower and upper 27% groups were selected from the dataset of 571 people. Since the threshold value of the total scale score of 154 people in the upper group was 3.63 points, the number of people who obtained this score or higher was 157. The threshold score in the lower group was 2.50 points, and 162 people were included in this subgroup. To test whether there was a significant difference between the mean item scores according to the lower and upper groups, both the parametric t test for independent samples and the nonparametric Mann-Whitney U test were used, and the results are shown in Table 9.

Table 9: Item Discrimination Results for the Upper 27% and Lower 27% Groups

		N	Mean	Standard Deviation	T Test for Independent Samples		Mann-Whitney U Test	
					T	p	U	p
M1	Lower group	162	1.66	1.04	-25.236	.000	1597.500	.000
	Upper group	157	3.90	0.40				
M2	Lower group	162	1.46	0.84	-32.363	.000	1082.500	.000
	Upper group	157	3.90	0.44				
M3	Lower group	162	1.91	1.28	-16.697	.000	3759.000	.000
	Upper group	157	3.83	0.68				
M4	Lower group	162	1.77	1.20	-20.203	.000	3000.000	.000
	Upper group	157	3.87	0.51				
M5	Lower group	162	2.60	1.20	-13.900	.000	4579.000	.000
	Upper group	157	3.95	0.22				
M6	Lower group	162	3.63	0.83	-5.083	.000	10376.000	.000
	Upper group	157	3.98	0.24				
M7	Lower group	162	2.07	1.20	-18.704	.000	3030.500	.000
	Upper group	157	3.93	0.36				
M8	Lower group	162	2.22	1.37	-11.184	.000	5730.000	.000
	Upper group	157	3.65	0.84				
M9	Lower group	162	1.56	1.00	-27.191	.000	1636.000	.000
	Upper group	157	3.91	0.41				
M10	Lower group	162	1.29	0.74	-29.729	.000	1455.500	.000
	Upper group	157	3.76	0.75				
M11	Lower group	162	2.25	1.34	-16.103	.000	4105.500	.000
	Upper group	157	3.98	0.14				
M12	Lower group	162	2.49	1.37	-13.527	.000	5299.500	.000
	Upper group	157	3.98	0.14				
M13	Lower group	162	1.43	0.94	-29.019	.000	1610.000	.000
	Upper group	157	3.89	0.51				
M14	Lower group	162	1.78	1.18	-17.421	.000	3518.000	.000
	Upper group	157	3.74	0.78				
M15	Lower group	162	3.18	1.03	-9.541	.000	7189.000	.000
	Upper group	157	3.97	0.19				
M16	Lower group	162	2.43	1.08	-12.818	.000	4586.500	.000
	Upper group	157	3.69	0.61				

When Table 8 is examined, it can be seen that the t values for the difference between the mean scores of the upper 27% and lower 27% groups vary between -5,083 and -32.363 ($p < 0.01$). According to these findings, it can be said that all items in the scale have discriminatory power.

CONCLUSION and DISCUSSION

In this study, the aim was to adapt the Early Childhood Reading Motivation Scale, developed by Baker and Scher (2002), into Turkish. For this purpose, the necessary permission for the adaptation study was first obtained from Linda Baker and Deborah Scher via e-mail.

First, the scale was translated into Turkish from its original English form. At this stage, use was made of back-translation and expert opinions. The original form was translated twice, the back-translation was checked by four linguists, a consensus was achieved, and then a content validity study was conducted in terms of language and expression by obtaining the opinions of ten domain experts ($CVR > .62$).

The structure of the reading motivation scale, which consists of 16 items and was tested with a sample of 571 people, was examined using confirmatory factor analysis, and it was seen that the model consisting of four factors represented the structure of the reading motivation scale. These findings of the study indicate that the Turkish translation of the scale adapted from Baker and Scher is compatible with the original in terms of validity (2002: p.245). In other words, following the confirmatory factor analysis, the validity of the scale was confirmed, which shows that it measures the construct (enjoyment, perception of value, perception of competence, and library interest) in keeping with the original scale.

Furthermore, to test the external criterion validity of the reading motivation scale, which was adapted into Turkish, its equivalence with a scale measuring similar skills was tested. For this purpose, the data obtained from the Reading Skills Assessment Scale, which was administered to 40 students selected from among the students in the sample group, were used. It was concluded that the implementation results of both scales varied together and that there was a significant moderate positive correlation between the results. In other words, the Turkish version of the Early Childhood Reading Motivation Scale provided external criterion validity.

Within the scope of the reliability studies of the scale, item-total, Cronbach alpha, item discrimination and test-retest methods were used. Following the statistical analyses, the Cronbach alpha value was calculated as $\alpha = .872$, and the test-retest reliability coefficient was $r = .882$. It was observed that the item-total correlation values of the scale ranged from .253 to .637. Following the item discrimination analysis, it was seen that the discriminatory power of each item in the scale was high ($p < .01$).

Although reading motivation scales have been widely studied at different levels of education, it has been previously stated that research on young age groups is limited. One study was conducted by Coddington and Guthrie (2009). The researchers developed the Young Reader Motivation Questionnaire (YRMQ) scale to be applied to students attending the first grade of primary school. The scale, which consists of three factors (self-efficacy for reading, reading orientation, perceived difficulty in reading) and 12 items, is a 4-point Likert-type scale. For each question in the scale, the student is given a 'yes/no' answer option, and the other question is asked in relation to the student's answer. For example, when asked '*Can you solve difficult words on your own when reading?*', the student is asked to answer, 'yes' or 'no'. If the student answers 'yes', he or she is asked '*Do you always or usually work out difficult words on your own?*' If the student answers 'no', he or she is asked '*Can you usually or never solve difficult words on your own?*'. These items were given to each student individually and orally. The structure of the scale is similar to the scale adapted into Turkish in this study. The Early Childhood Reading Motivation Scale also consists of three factors (enjoyment, perceived value, perceived competence) and is a 4-point Likert-type scale. Similarly, the questions in this scale also progress step by step depending on the answer given by the student. For example, in one question '*Regal thinks people can learn new things from books, Cha Cha doesn't think people can learn new things from books. Are you more like Regal or Cha Cha?*' If the student says that he or she thinks like Regal, then the student is asked the question '*Can people learn lots of new things from books, or just a few?*' representing Regal's opinion and scored.

In another study, Guay et al. (2010) developed the 'Motivation Scale for Primary School Students'. Consisting of 27 items and three factors, the scale measures students' motivation in reading, writing and math skill areas. This scale was adapted into Turkish by Bozgün and Akın Kösterelioğlu (2020). However, it was thought that some of the students would have difficulties because reading, writing and math skills start to be acquired in the second semester of the first grade in our country, and the study was conducted with the second, third and fourth grades. The Turkish version of the scale consists of three subscales, namely, reading, writing and mathematics skill domains, and nine sub dimensions common to these subscales, namely, intrinsic, identified extrinsic and extrinsic motivation sub dimensions. In the study, it was concluded that the scale was a reliable measurement tool at all levels from second to fourth grades.

When the literature in our country is analyzed, there is no reading motivation scale study for first grade or early childhood students except for that of Öztürk and İleri (2011). The scale consists of 20 items with a three-factor structure (individual desire to read, reading competence and reading difficulties). On the 3-point Likert-type scale, there are three images representing negative, neutral and positive statements under each item. The students mark the images according to their views on the scale items, and scoring is done in this way. As a result of the research, the scale was found to be valid and reliable. As seen, there are very few studies on the development and adaptation of early childhood reading motivation scales in Turkey. The reason for this can be interpreted as the fact that applying a scale in that age group is both a more difficult and time-consuming process and that the students do not yet have sufficient skills to complete the scale.

When the findings regarding the validity and reliability of the scale are evaluated together, it can be stated that the Turkish adaptation of the scale is a valid and reliable tool that can be used to measure reading motivation in first-grade students. In this sense, it can be said that in terms of its psychometric properties, it has the feature of being a measurement tool that can be used in future research.

Limitations

However, although we attempt to keep the sample large, in other words, to achieve the sample size stated in the literature, it should be borne in mind that the generalizability of the findings is limited. Here, the most important situation thought to affect generalizability is that the research sample was selected only from the province of Konya and certain schools. In this sense, it can be said that it may be beneficial to retest the validity and reliability analyses by administering the scale to different sample groups and to produce evidence of validity and reliability for those groups.

Declarations

Conflict of Interest

No potential conflicts of interest were disclosed by the author(s) with respect to the research, authorship, or publication of this article.

Ethical Approval

This study was conducted with the approval of the Ethics Committee at Selcuk University, Faculty of Education dated: 17.02.2022 and numbered E.236926

This material is the authors' own original work, which has not been previously published elsewhere. The paper reflects the authors' own research and analysis in a truthful and complete manner. The results are appropriately placed in the context of prior and existing research. All sources used are properly disclosed.

Contribution Rates of Authors to the Article

The authors have contributed equally to this work.

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