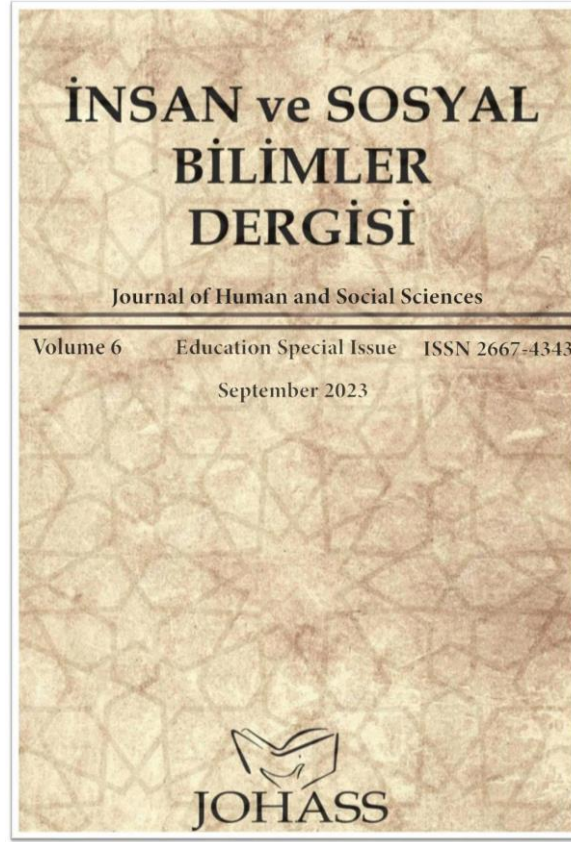


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Self-Efficacy Scale for Turkish Lesson: A Study of Validity and Reliability

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Self-Efficacy Scale for Turkish Lesson: A Study of Validity and Reliability

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Abstract

A significant role is played by the idea of self-efficacy, which involves students' perceptions of their unique skills and ability to do well in Turkish lectures. The purpose of this study is to create a measurement tool that is both valid and reliable for assessing secondary school students' self-efficacy toward Turkish language instruction. In the 2022–2023 academic year, 420 kids who are enrolled in the fifth, sixth, seventh, and eighth grades at four different public secondary schools in Aksaray city center make up the study group. The package applications AMOS 24.00 and SPSS 22.00 were used to analyze the data. To test the scale's construct validity, factor analysis was done. The exploratory factor analysis produced a 4-factor scale with 23 items as a result. A total of 52.088% of the variance is explained by the scale. The scale's 4-factor structure was verified by confirmatory factor analysis. The fit indices derived by confirmatory factor analysis were found to exhibit satisfactory or outstanding fit. The reliability of the scale's items was evaluated using analyses, and it was found that the scale's Cronbach's Alpha internal consistency coefficient was .89. The research's findings demonstrate that the scale that was created in response to them is a reliable and valid measurement tool for assessing secondary school students' self-efficacy toward Turkish courses. The self-efficacy of fifth, sixth, seventh, and eighth-grade pupils toward Turkish classes can be assessed using this scale.

Keywords: Turkish lesson, self-efficacy scale, scale development, validity and reliability study, secondary school students

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Introduction

Self-efficacy belief is individuals' awareness of their skills and abilities in the process of organizing, organizing, and carrying out actions, and plans to achieve goals. In other words, it is the perception that individuals individually evaluate the extent to which they can perform the actions they need regarding all kinds of events, facts, and situations they encounter in their daily lives (Bandura, 1982; Bandura, 1997). Self-efficacy can be defined as an individual's belief in his/her abilities and capacity to regulate and perform the behaviors expected of him/her in any field (Sallabaş, 2012). The most important element of self-efficacy belief is shown as the initiation (taking action) and maintenance (continuing action) of behaviors. Self-efficacy also plays an important role in effective interventions for emotional and behavioral problems (Maddux, 1995). Research shows that students' cognitive power, direction, persistence, and desire affect the achievement process. Since Bandura's concept of self-efficacy in 1977, self-efficacy theory has examined how self-efficacy affects learning, motivation and achievement in educational settings and the impact of instructional and social factors on self-efficacy (Bandura, 1977; Schunk, 1995, Zimmerman, 1990).

Self-efficacy is directly related to self-efficacy beliefs in terms of the behaviors that individuals will follow, how much effort they will make, how long they will endure the obstacles they face, their ability to overcome difficulties and their resilience, their metacognitive processes in the face of problems, their awareness of depression, anxiety, and obstacles they experience. The higher the self-efficacy beliefs of individuals, the more likely they are to cope with the obstacles and difficulties they face and to make efforts in this direction. On the contrary, individuals who doubt their self-efficacy beliefs tend to avoid the threats and difficulties they face. These individuals have very low expectations for work and processes and give up very quickly in the face of adversity (Bandura, 1994). Self-efficacy is based on four basic resources that interact with each other. These basic sources are shown in Table 1 (Bandura, 1977, p. 195).

Tablo 1

Sources of Self-Efficacy

Source	The Inductive Model
Performance Achievements (Key Experiences)	Participant modeling Performance desensitization Exposure to performance Self-directed performance
Indirect Experience (Experience)	Live modeling Symbolic modeling
Verbal Persuasion	Recommendation Recommendation (encouragement) Self-instruction Interpretive therapies
Physiological and Psychological State	Authenticity Relaxation, biofeedback Symbolic desensitization Symbolic explanation

Performance achievements, i.e. core experiences, are related to the individual's past experiences. An individual's past achievements, the level of achieving goals, and the ability to cope with the problems they face positively affect self-efficacy. On the contrary, repeated failures in an individual's life affect self-efficacy negatively. However, the failures that the individual can overcome later on will strengthen the determined effort and self-motivation, which will lead to the development of self-efficacy. In the source of indirect experience (experience), the individual adapts to the new situation by observing or modeling the experiences of others in experiences that may be considered new for him/her. This will contribute to the individual's ability to fulfill individual responsibilities, make determined efforts and develop purposeful expectations. The third source of self-efficacy is verbal persuasion. With verbal persuasion, the individual is made to believe that he/she can cope with situations that have bothered him/her in the past. Through verbal expressions such as encouragement, support, suggestions, and advice, and feedback, the individual is guided and enabled to achieve success. The fourth source of self-efficacy is the physiological or psychological state of the individual. The degree of anxiety, stress, tension, etc. experienced by individuals while coping with any negative situation affects self-efficacy negatively. Therefore, the emotional arousal level of individuals should be at a certain level. Because self-efficacy is related to negative emotions such as stress, pessimism, anxiety and physical inadequacies such as hunger, fatigue, and insomnia (Bandura, 1986; Pehlivan & Aydın, 2022; Zimmerman, 2002).

When self-efficacy beliefs are strong, individuals can overcome the negative situations they encounter on their own without the need for others. Maintaining self-efficacy belief, especially in new situations encountered, is also important for the continuity of individual success. There are studies on self-efficacy, which has such an important place in an individual's life, in the field of educational sciences. In many studies conducted in the field of educational sciences, it has been determined that individuals with high self-efficacy perception have better physical and mental health, better social adaptation skills, and higher academic achievement than individuals with low self-efficacy perception (Bandura, 1997; Jerusalem & Schwarzer, 1992; Maddux, 1995). It has been observed that students with high self-efficacy participate more willingly in educational activities, work harder, and perform longer compared to students with self-doubt. While successes raise students' self-efficacy, failures lower it. However, once students gain a strong sense of self-efficacy, negative situations or failures will not have much negative impact (Bandura, 1986).

In language education, psychological factors such as attitudes, anxiety, motivation, self-efficacy, and self-efficacy affect students' learning process as well as the quality of instruction. Studies on the effect of psychological factors on student achievement show that language education is also affected by psychological processes. Knowing the language learning needs of language learners and their interests, attitudes, beliefs, and motivations towards the language they learn will contribute to the effective design of the teaching process (Pehlivan & Aydın, 2022, p.293).

Individuals perceive and interpret their environment through their mother tongue. At the same time, the individual can convey his/her feelings, thoughts, dreams, impressions, and experiences to others through his/her mother tongue. An individual's ability to use his/her mother tongue is also directly proportional to his/her ability to exist in society. For this reason, determining the self-efficacy perceptions of native Turkish-speaking students towards Turkish lessons will provide education stakeholders with very important information about students. Psychological tests developed and used in this field are used to recognize and evaluate individuals. Thanks to these tests, a general picture of the psychological readiness, interests, and needs of the groups in which educational activities will be carried out can be taken. The data obtained from the applied tests contribute to the student-centered planning, programming, and execution of educational activities.

Many studies on self-efficacy have been conducted in the field of Turkish education in recent years. In many of these studies, the effect of a method or practice on self-efficacy or the

relationship between it and another variable was examined. In the literature, many scale adaptation (Epçaçan & Demirel, 2011; Demir, 2014; Demirkol, 2023; Karatay et al., 2018; Keskin & Atmaca, 2014; Yılmaz Soylu & Akkoyunlu, 2019) and development (Akkaya & Çıvğın, 2020; Çarkıt & Altun, 2020; Çocuk et al., 2015; Delican, 2017; Durukan & Maden, 2012; Güneş et al., 2017; Hasırcı Aksoy et al., 2021; Karadeniz, 2014; Katrancı & Melanlıoğlu, 2013; Kotaman, 2009; Şahin & Öztahtalı, 2019; Ulu, 2018; Ülper et al., 2013) studies have been conducted to measure students', teachers', prospective teachers' and parents' self-efficacy perceptions towards Turkish language courses and language skills. There are also scale adaptation and development studies on self-efficacy in the field of teaching Turkish to foreigners (Büyükikiz, 2012; Güngör & Kan, 2020; Kurudayıoğlu & Güngör, 2017; Sallabaş, 2013; Sevim & Varışoğlu, 2023; Tulumcu, 2014; Varışoğlu & Sevim, 2022).

Determining students' self-efficacy towards the Turkish courses will provide important data to improve their performance in the course. When self-efficacy studies in the field of Turkish education are examined, there is no study that includes all grade levels of secondary school (5th, 6th, 7th, and 8th-grades) with wide participation. There is only the self-efficacy scale developed by Durukan & Maden (2012) in the literature to measure secondary school students' self-efficacy perception towards Turkish courses. However, in this scale, data were not collected from 5th grade students who were at the primary school level at that time and later included in the secondary school level, and the study group consisted of 150 participants. In addition, as a suggestion in this study, it was stated that studies including advanced analysis could be conducted. Erkuş (2019) states that the measurement of a psychological variable arises from a need. He also states that this need can be based on various reasons such as identifying the missing parts of an existing scale, wondering how a new variable is and testing some hypotheses based on it. Therefore, in this study, it was aimed to develop a self-efficacy scale for all levels of secondary school (5th, 6th, 7th, and 8th-grades) with broad participation that could respond to the need in the field. In this context, the aim of the study is to develop a valid and reliable measurement tool that can measure the self-efficacy of secondary school students (5th, 6th, 7th, and 8th-grade) towards Turkish courses.

Method

Model

This study aims to develop a valid and reliable scale that can measure the self-efficacy of secondary school students towards Turkish courses. Therefore, this study is a scale development study in which the validity and reliability of the "Self-Efficacy Scale for Turkish Lesson (SSTL)" (Appendix 1.) is tested with a quantitative approach.

This research was found ethically appropriate by the decision of Aksaray University Human Research Ethics Committee dated 28.02.2023 and numbered E-34183927-000-00000811288.

Study Group

The study group of the research consists of 420 students selected based on volunteerism among the students studying in the 5th, 6th, 7th, and 8th grades in four different secondary schools in Aksaray province in the second semester (spring semester) of the 2022-2023 academic year. The study group was determined by purposive sampling method in accordance with the voluntary basis. Table 2 shows the descriptive information of the students in the study group.

Table 2

Demographic Information on the Study Group

Class Level	Girl	Boy	N	%
5	54	51	105	25
6	52	53	105	25
7	59	46	105	25
8	56	49	105	25
Total	221	199	420	100

Development Process of the Scale

In the development phase of the Self-Efficacy Scale for Turkish Lesson, the studies on the scale development process in the literature were examined and the stages explained in detail below were followed in order by making use of these studies (Başol, 2019; DeVellis, 2017; Erkuş, 2019; Özgüven, 2017).

1. Determination of the Structure to be Measured and the Purpose of Measurement

In scale development, if a good scale is to be obtained, the construct to be measured should be determined well. The first thing to be considered in this process is to determine whether the construct to be measured is general or specific and whether it is different from other constructs (DeVellis, 2017). The construct to be measured in the study is secondary school students' self-efficacy perception towards Turkish courses. In this direction, the study aims to develop a valid and reliable scale that can determine the self-efficacy of secondary school students towards Turkish courses.

2. Creation of the Item Pool

One of the most important steps of the scale preparation process is the creation of the item pool. The items to be included in the scale should be created in accordance with the purpose of the study. In the creation of the item pool, scales in the literature or data to be collected from students through various methods can be utilized. While creating the Self-Efficacy Scale for Turkish Lesson, a group of 25 students were asked to write a text that could reveal students' self-efficacy perceptions towards Turkish lesson. An item pool of 60 positive and negative self-efficacy items was created by utilizing these texts written by the students and self-efficacy scale adaptation (Demir, 2014; Demirkol, 2023; Karatay et al., 2018; Keskin & Atmaca, 2014; Yılmaz Soylu & Akkoyunlu, 2019) and development studies (Akkaya & Çıvğın, 2020; Çarkıt & Altun, 2020; Çocuk et al., 2015; Delican, 2017; Durukan & Maden, 2012; Epçaan & Demirel, 2011; Güneş et al., 2017; Hasırcı Aksoy et al., 2021; Karadeniz, 2014; Katrancı & Melanlıoğlu, 2013; Kotaman, 2009; Şahin & Öztahtalı, 2019; Ulu, 2018; Ülper et al., 2013) in the literature. While creating these items, attention was paid to reflecting the elements that make up the Turkish courses in order to increase content validity. In addition, it was ensured that the items were in clear, simple and understandable language, that each item was intended to measure a single variable, that there was a single judgment in each item, and that positive and negative expressions were not included in the same item.

3. Determining the Measurement Method

Many ways of responding can be utilized in scale construction. The researcher should decide in advance how the form of measurement will be in his/her research. In fact, this step takes place simultaneously with item construction (DeVellis, 2017). The Self-Efficacy Scale

for Turkish Lesson was prepared in accordance with the Likert scale, which is used as the most common item format in scales developed in the field of education. SSTL; The questionnaire was constructed on a 5-point Likert scale as "strongly agree (5)", "agree (4)", "undecided (3)", "disagree (2)", and "strongly disagree (1)".

4. Obtaining Expert Opinion

At this stage of the study, the face and content validity of the items in the item pool were checked.

4.1. Surface Validity

After the item pool of the scale was created, the surface validity of the scale was examined to see whether these items measured the intended information. Face validity is checking the appropriateness of the items in the item pool to the target audience (DeVellis, 2017). In this context, 3 field experts were asked to evaluate the items in terms of their suitability for the purpose of the research. In line with the opinions of the field experts, 4 items were rewritten and 6 items were revised.

4.2. Content Validity

In order to check whether the items in the item pool provided content validity, it was calculated according to the formula found by Lawshe (1975). It is possible to comment on the content validity of the test by looking at the values of the items expected to be included in the scale in line with expert opinions. Content Validity Ratio (CVR) minimum values (content validity criteria) that should have a significance level of $\alpha = 0.05$ according to the number of experts 0.99 for 5, 6, and 7 experts; 0.78 for 8 experts; 0.75 for 9 experts; 0.62 for 10 experts; 0.59 for 12 experts; 0.54 for 13 experts; 0.51 for 14 experts; 0.49 for 15 experts; 0.42 for 20 experts; 0.37 for 25 experts; 0.33 for 30 experts. 59; 0.56 for 12 experts; 0.54 for 13 experts; 0.51 for 14 experts; 0.49 for 15 experts; 0.42 for 20 experts; 0.37 for 25 experts; 0.33 for 30 experts; 0.31 for 35 experts; and 0.29 for 40 or more experts (Veneziano & Hooper, 1997; as cited in Yurdagül, 2005). In this context, the SDR of the items in the draft scale is shown in Table 3.

Table 3

Content Validity Rates of the Scale Item Pool

Item No	KGO	Item No	KGO	Item No	KGO	Item No	KGO
1	0.83	16	0.33	31	0.67	46	0.83
2	0.67	17	0.83	32	0.83	47	0.83
3	0.83	18	0.67	33	1.00	48	1.00
4	0.67	19	1.00	34	0.33	49	0.83
5	0.50	20	0.33	35	0.67	50	0.83
6	0.67	21	0.83	36	0.83	51	0,33
7	0.83	22	1.00	37	0.83	52	0.83
8	1.00	23	0.83	38	1.00	53	0.67
9	1.00	24	0.83	39	0.50	54	1.00
10	1.00	25	0.67	40	0.67	55	0.50
11	0.67	26	1.00	41	0.67	56	0.83
12	0.83	27	0.50	42	0.83	57	1.00
13	1.00	28	1.00	43	0.67	58	1.00
14	1.00	29	0.83	45	0.33	59	0,67
15	0.67	30	0.67	45	0.83	60	0.83
Total Experts:				12			
Content Validity Measure (CVM):				.56			
Total Coverage Validity Ratio (CVR):				.77			

When the CSR values of the items in the scale pool in Table 3 are examined, items 5, 16, 20, 27, 34, 39, 45, 51, 55, which had a low value of 0.62 according to the number of experts, were removed from the draft scale. All of the remaining 51 items had a criterion value greater than 0.62. The total CVR value before the 9 low-valued items in the item pool were discarded was 0.77 and the total CVR value after discarding was 0.83. In this context, it can be said that the content validity of the items in the draft scale and the overall scale is at an acceptable level.

5. Testing of the Item Pool

At this stage, the preliminary and actual applications of the draft scale were realized and the items in the item pool were tested in a way.

5.1. Pre-Trial Application

In order to minimize the situations that may be encountered during the actual application phase, the pre-test phase was applied to a group of 12 students, 3 students from each grade level who meet similar conditions with the group to be applied in one class hour (40 minutes). The pre-test application, can be carried out on 10-15 people representing the range of the relevant variable among the extreme groups from the actual target group to which the scale is considered to be applied (Erkuş, 2019). At this stage, students were asked to indicate any difficulties they would encounter and the items they had difficulty understanding. The researcher took notes of

the points that the students had difficulties and did not understand, and after the application, the necessary corrections and additions were made the items in the draft scale.

5.2. Main Application

The main implementation phase was carried out in two stages. Exploratory factor analysis was conducted on the first application data and confirmatory factor analysis was conducted on the second application data.

5.3. Exploratory Factor Analysis

In order to reveal the latent structure that cannot be directly observed in a psychological measurement tool, the structure must be defined correctly. Factor analysis is an analysis that should be applied in scale development studies in psychology in order to test the construct validity of the measured psychological variable and to perform item analysis (Erkuş, 2019). In this context, exploratory factor analysis was conducted to test the item analysis and construct validity of the scale. At this stage, the draft scale was applied to 420 students studying in the 5th, 6th, 7th, and 8th grades of secondary school. The results of the exploratory factor analysis on the collected data are shown in the findings section.

5.4. Confirmatory Factor Analysis

Confirmatory factor analysis can be defined as an analysis that tests whether a predefined and delimited structure is confirmed as a model (Çokluk et al., 2021). In this context, the results of the confirmatory factor analysis performed on the draft scale formed as a result of the exploratory factor analysis in order to test the hypotheses formed on the factor analysis of the scale are given in detail in the findings section.

5.5. Reliability Analysis

In general, reliability is the state of measurement free from errors, in other words, the results of successive measurements are the same or similar to each other (Can, 2020). For the reliability analysis of the scale, Cronbach's Alpha reliability coefficient, which is most commonly used in reliability analysis of Likert-type scales, was used. Criteria values for Cronbach's Alpha reliability coefficients are as follows: 0.90, and above is highly reliable, 0.60-0.90 is highly reliable, 0.40-0.60 is low reliability, and below 0.40 is not reliable (Özdamar,

1999). The results of the Cronbach's Alpha reliability coefficient on the data collected from the students are shown in the findings section.

6. Reporting

In the final stage of scale development, the findings obtained from the validity and reliability studies conducted on the scale were evaluated and interpreted, discussed with the results of similar studies in the relevant literature and reported.

Compliance with Ethical Standard

This research was found ethically appropriate by the decision of Aksaray University Human Research Ethics Committee dated 28.02.2023 and numbered E-34183927-000-00000811288.

Findings

Under this heading, findings and interpretations related to exploratory factor analysis, confirmatory factor analysis and reliability analysis conducted in the analysis part of the scale development process are presented.

1. Findings Related to Exploratory Factor Analysis

Factor analysis is a statistical technique that aims to explain the measurement with as few factors as possible by bringing together variables that measure the same quality or construct (Büyüköztürk, 2016). Factor analysis is a very useful analytical tool that can provide information about important features of many scales that reliability coefficients cannot. It helps to empirically determine how many constructs, latent variables, or factors underlie a group of items that are considered to be included in the scale (DeVellis, 2017). In this context, the Exploratory Factor Analysis (EFA) technique was used in order to prove the construct validity of SSTL.

Factor analysis may not be an appropriate analysis for all data structures obtained as a result of the research. The suitability of the data for factor analysis can be examined with the Kaiser-Meyer-Olkin (KMO) coefficient and Barlett Sphericity Test. The KMO coefficient provides information about the suitability of the data set to be analyzed for factor analysis. For factor analysis, the KMO coefficient is expected to be greater than .60 and Barlett's Test of

Sphericity is expected to be significant (Büyüköztürk, 2016). The KMO coefficient and Barlett Sphericity Test results of the scale data set are shown in Table 4.

Table 4

Content Validity Ratios of Scale Item Pool

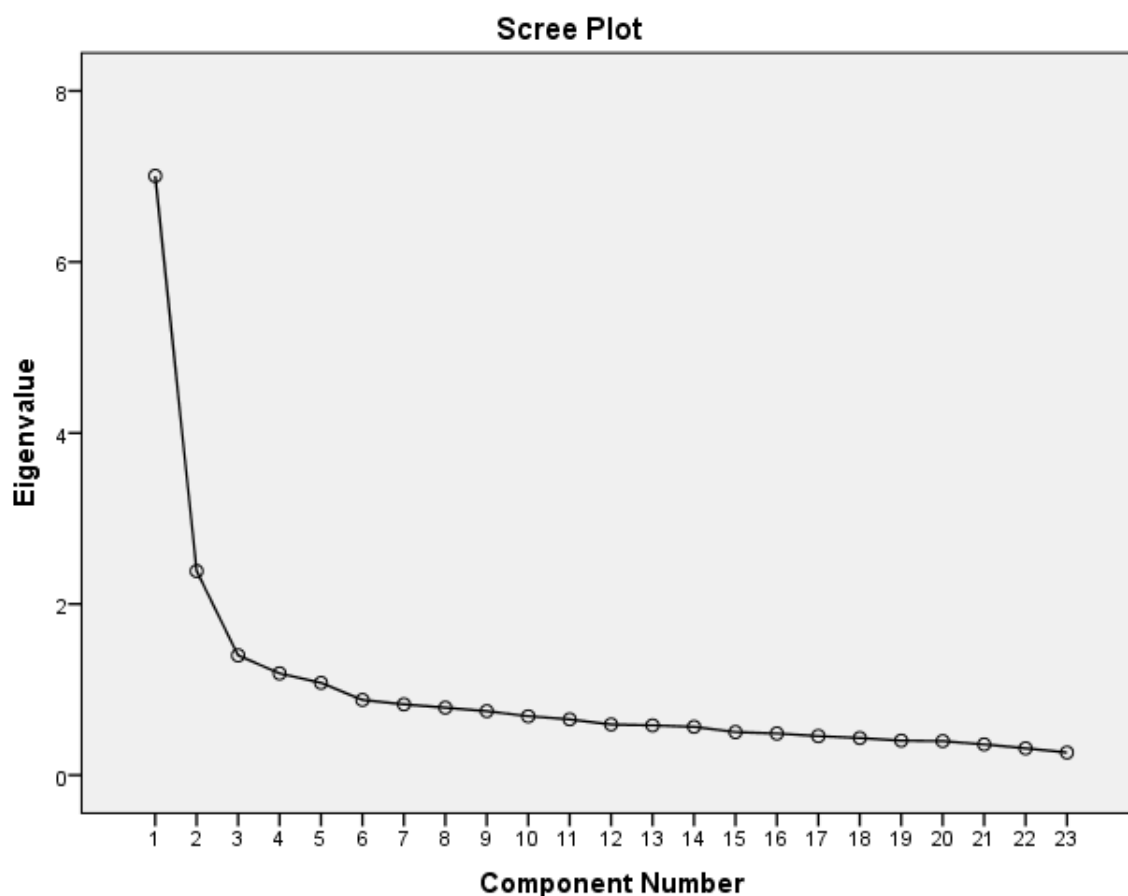
Kaiser-Meyer-Olkin (KMO)		.907
Barlett's Test of Sphericity	Kay-Kare	3387.429
	sd	253
	p	.000

When the data in Table 4 are analyzed, it is seen that the KMO coefficient value of the scale data set is .907. This value is greater than the criterion value of .60 required for factor analysis. In addition, the Barlett Sphericity Test result of the scale data set was significant ($\chi^2=3387.429$; $sd=253$; $p= 0.00$). Based on these results, it can be stated that the scale data set is suitable for factor analysis.

In the EFA process of the Self-Efficacy Scale for Turkish Lesson, it was first tried to decide how many factors the scale had. The minimum factor loading values that the items should carry were determined as .40 (Pituch & Stevens, 2016). This value is well above .10 (Büyüköztürk, 2016), which is another critical value stated in the literature. In addition, it was paid attention that the loadings of the overlapping items in different factors should be at least .20 (Howard, 2016) and those items were included under the factor with the highest value. In the 51-item draft scale, items numbered 3-13-14-4-23-11-2-16-34-42-29-30-15-22-12-27-28-21-46-41-25-38-37-24-45-26-20-35 were removed from the scale due to the fact that the factor loadings of some items were lower than .40, some items had a difference of less than .20 between the factor loadings in the closest factor, and some items had one or two items under some factors. The remaining 25 items were grouped under 4 factors. In order to decide the number of factors of the scale, the slope-accumulation graph (scree plot) was analyzed. The scree plot of the Self-Efficacy Scale for Turkish Lesson is shown in Figure 1.

Figure 1

Scree Plot of the Scale



Looking at the slope-accumulation graph in Figure 1, it is understood that the scale has a 4-factor structure. Based on this data, it was decided that the Self-Efficacy Scale for Turkish Lesson should have 4 factors. The variance values explained by these 4 factors are shown in Table 5.

Table 5.

Explained Variance Values of the Scale

Factor	Eigenvalue	Explained Variance (%)	Total Variance (%)
1	3.554	15.450	15.540
2	3.199	13.909	29.359
3	3.045	13.238	42.597
4	2.183	9.491	52.088

When the data in Table 5 are analyzed, it is seen that the eigenvalue of the first factor is 3.554 and the variance explained is 15.540%; the eigenvalue of the second factor is 3.199 and the variance explained is 13.909%; the eigenvalue of the third factor is 3.045 and the variance explained is 13.238%; the eigenvalue of the fourth factor is 2.183 and the variance explained is 9.491%. The total variance explained by these four factors is 52.088%. In scale development studies, the total variance explained in single-factor scales is expected to be 30% and above (Büyüköztürk, 2016). In scale development studies conducted in the field of social sciences, this ratio is expected to be between 40% and 60% (Tavşancıl, 2014). In this context, it can be said that the total variance explained by the Self-Efficacy Scale for Turkish Lesson is at a sufficient level.

After the factor numbers were determined, the factor structures of the items in the Self-Efficacy Scale for Turkish Lesson and the factor values of scale items in Table 6.

Table 6*Factor Values of Scale Items*

Draft Scale Item No	Original Scale Item No	Factor 1	Factor 2	Factor 3	Factor 4
40	1	.682			
33	2	.622			
36	3	.617			
39	4	.616			
44	5	.603			
47	6	.563			
31	7	.537			
32	8	.451			
43	9	.466			
10	10		.708		
9	11		.699		
6	12		.694		
5	13		.655		
8	14		.648		
1	15		.560		
50	16			.853	
49	17			.847	
51	18			.794	
48	19			.789	
19	20				.702
18	21				.686
17	22				.625
7	23				.560

When the data in Table 6 are analyzed, it is seen that the factor values of the items in the Self-Efficacy Scale for Turkish Lesson are between .451 and .853. The fact that the factor

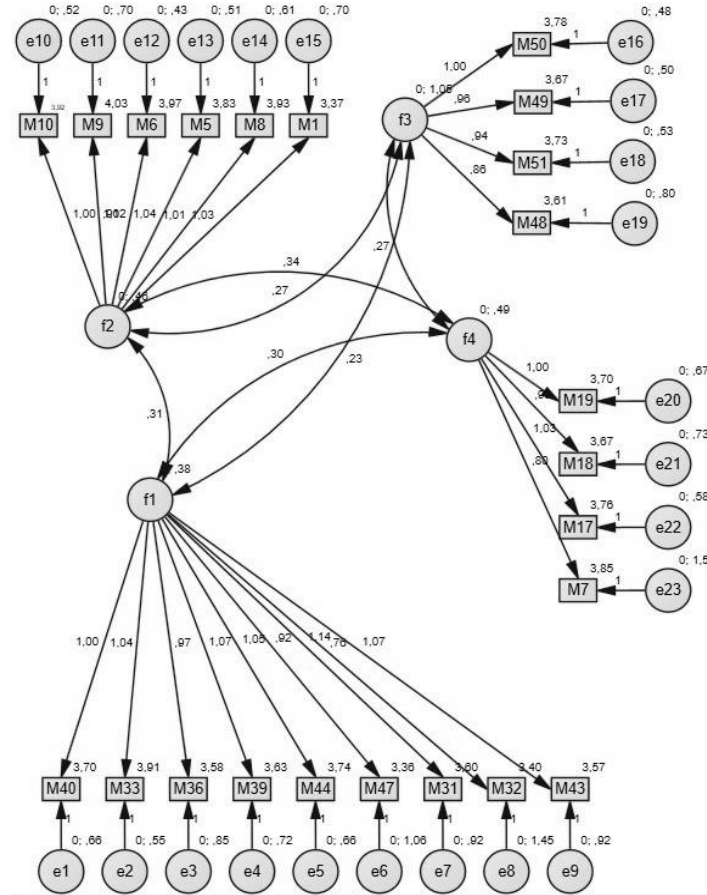
values of the items are greater than the criterion value of .40 (Pituch & Stevens, 2016) indicates that they can be included in the scale. The factor values of the items in the first factor vary between .451 and .682, the factor values of the items in the second factor vary between .560 and .708, the factor values of the items in the third factor vary between .789 and .853, and the factor values of the items in the fourth factor vary between .560 and .702. When the 11 items in the first factor were analyzed, it was seen that these items were related to students' feelings of self-confidence in the Turkish lesson and this factor was explained with the expression "Self-Confidence towards the Lesson". When the 6 items in the second factor were analyzed, it was seen that these items were related to students' feelings of taking action in Turkish lessons and this factor was named as "Performing". When the 4 items in the third factor were analyzed, it was seen that these items were related to students' negative feelings towards the Turkish lesson and this factor was expressed as "Negative Readiness". When the 4 items in the fourth factor were analyzed, it was seen that these items were related to students' approaches towards language skills and this factor was explained with the expression "Approach towards Language Skills".

1. Findings Related to Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) was conducted to confirm the structural validity of the 4-factor structure that emerged as a result of the EFA analysis of the Self-Efficacy Scale for Turkish Lesson. The factor distributions of the CFA results are presented in Figure 2.

Figure 2

Path Diagram of CFA Results of the Scale



When the path diagram showing the CFA results presented in Figure 2 is examined, it is seen that the explanation ratios of the items to the factors vary between .46 and 1.17, and the error variances vary between .43 and 1.45. The t values for the explanatory status of the latent variables for the observed variables are significant at .05 level if they exceed 1.92 and at .01 level if they exceed 2.56 (Çokluk et al., 2021). Considering the stated criterion values, according to the CFA results of the Self-Efficacy Scale for Turkish Lesson, it was seen that the t value related to the explanatory status of the latent variables to the observed variables was significant at .01 level.

The other results to be considered in CFA results are the fit indices. For the fit indices, the criterion values ($\chi^2 / df = 2.5 \leq \chi^2 / df \leq 5$; $GFI = .90 \leq GFI \leq .95$; $RMSEA = .05 \leq RMSEA \leq .08$; $AGFI = .85 \leq AGFI \leq .90$; $IFI = .90 \leq IFI \leq .95$; $NFI = .90 \leq NFI \leq .95$; $RMR = .05 \leq RMR \leq .08$; $SRMR = .00 \leq SRMR \leq .10$; $CFI = .90 \leq CFI \leq .95$; $PNFI = .50 \leq PNFI \leq 1.00$; $PGFI =$

.50 \leq PGFI \leq 1.00) specified in the literature were taken into consideration (Byrne, 2016; Çokluk et al., 2021; Harrington, 2009; Hu & Bentler, 1999; Tabachnick & Fidell, 2013). When the fit indices of the Self-Efficacy Scale for Turkish Lesson were examined according to the CFA results, it was found that there was a significant difference between the expected and observed covariance matrix ($\chi^2=424.805$, $df=224$, $p<0.001$). When examined in terms of other fit index values, (GFI=.921; RMSEA=.051; AGFI= .902; IFI=.938; NFI=.901; RMR= .062; SRMR= .041; CFI=.937; PNFI=.777; PGFI=.747) it was found that it had acceptable and excellent fit in terms of many criterion values.

2. Findings Related to Reliability Analysis

In order to check the reliability of the Self-Efficacy Scale for Turkish Lesson, Cronbach's Alpha internal consistency coefficient (α), which is the most commonly used reliability calculation in Likert-type scale development studies in the literature, was calculated. A reliability coefficient of .70 or higher calculated for a psychological scale is generally considered sufficient for reliability (Büyüköztürk, 2016). The calculated Cronbach's Alpha internal consistency coefficient (α) of the Self-Efficacy Scale for Turkish Lesson is presented in Table 7.

Table 7

Results of the Reliability Analysis of the Scale

Factors	Cronbach's Alpha (α)
1	.80
2	.83
3	.86
4	.70
Total	.89

When the data in Table 7 are examined, the Cronbach's Alpha internal consistency coefficient (α) of the Self-Efficacy Scale for Turkish Lesson was calculated as .80 for the first factor, .83 for the second factor, .86 for the third factor, .70 for the fourth factor, and .89 for the overall scale. Since these values are above the criterion value of .70 (Büyüköztürk, 2016) accepted in the literature, it shows that the measurements performed are reliable. In this context, it can be said that the internal consistency coefficients of the Self-Efficacy Scale for Turkish Lesson are at a sufficient level.

Discussion and Results

This study was conducted to develop a valid and reliable measurement tool that can measure secondary school students' (5th, 6th, 7th, and 8th grade) self-efficacy toward Turkish courses. In line with the research purpose, the processes specified in the literature (Başol, 2019; DeVellis, 2017; Erkuş, 2019; Özgüven, 2017) were followed in the scale development process.

In the stage of developing the Self-Efficacy Scale for Turkish Lesson, firstly, the literature on the subject was reviewed and various studies (Er, 2019; Gömleksiz et al., 2020; Koç & Arslan, 2017; Maden, 2020; Ocak & Karataş, 2019) on self-efficacy in the literature and scale adaptation (Demir, 2014; Demirkol, 2023; Karatay et al., 2018; Keskin & Atmaca, 2014; Yılmaz Soylu & Akkoyunlu, 2019) and development studies (Akkaya & Çıvğın, 2020; Çarkıt & Altun, 2020; Çocuk et al., 2015; Delican, 2017; Durukan & Maden, 2012; Epçaçan & Demirel, 2011; Güneş et al., 2017; Hasırcı Aksoy et al., 2021; Karadeniz, 2014; Katrancı & Melanlıoğlu, 2013; Kotaman, 2009; Şahin & Öztahtalı, 2019; Ulu, 2018; Ülper et al., 2013) were examined.

An item pool of 60 items was created based on the scale items in the literature and the texts written by the students. In order to determine the surface and content validity of the prepared item pool, it was submitted to the opinion of a group of 12 experts. In line with the expert opinions, 9 items with low content validity were removed from the item pool and a draft scale with 51 items was reached. This draft scale was first applied to 12 students as a pre-application. Necessary corrections and adjustments were made in line with the feedback received from the students, and the final version of the 51-item draft scale was applied to 420 students studying in the 5th, 6th, 7th, and 8th grades of secondary school.

SPSS 22.0 and AMOS 24.0 package analysis programs were used to analyze the data obtained from the students. As a result of the analyses, firstly, the suitability of the data set for factor analysis was checked and it was determined that the KMO coefficient value of the data set was .907 and the Barlett Sphericity Test result was significant ($\chi^2=3387.429$; $sd=253$; $p=0.00$) and the relevant factor analyses were performed. As a result of the analyses, a scale of 23 items (19 positive and 4 negative) gathered under 4 factors was obtained. When the items under the determined factors were analyzed, the first factor with 11 items was named " Self-Confidence towards the Lesson "; the second factor with 6 items was named "Performing"; the third factor with 4 items was named "Negative Readiness"; and the fourth factor with 4 items was named "Approach towards Language Skills". The factor loadings of the 23 items on the

scale were found to be between 451 and .853. CFA was conducted to confirm the structural validity of the 4-factor structure that emerged as a result of EFA analysis of the Self-Efficacy Scale for Turkish Lesson. According to the CFA results of the Self-Efficacy Scale for Turkish Lesson, when the fit indices were examined, it was determined that there was a significant difference between the expected and observed covariance matrix; when examined in terms of other fit index values, it was determined that it had acceptable and excellent fit in terms of many criterion values.

In order to check the reliability of the Self-Efficacy Scale for the Turkish Lesson, Cronbach's Alpha internal consistency coefficient (α), which is the most commonly used reliability calculation in Likert-type scale development studies in the literature, was calculated. Cronbach's Alpha internal consistency coefficient (α) was calculated as .80 for the first factor, .83 for the second factor, .86 for the third factor, .70 for the fourth factor, and .89 for the overall scale. Based on these values, it can be said that the Self-Efficacy Scale for Turkish Lesson is a reliable measurement tool for measuring secondary school students' self-efficacy towards Turkish lesson.

The 4-factor and 23-item Self-Efficacy Scale for Turkish Lesson, which was obtained as a result of the study, was prepared in 5-point Likert format as "completely agree (5)", "agree (4)", "undecided (3)", "disagree (2)" and "strongly disagree (1)". Of the 23 items on the scale, 19 are positive and 4 are negative. The 4 items in the third factor of the scale constitute the items that should be reverse coded. The lowest score that can be obtained from the scale is 23 and the highest score is 115. High scores on the scale indicate that secondary school students have high levels of self-efficacy towards Turkish lesson, while low scores indicate that secondary school students have low levels of self-efficacy towards Turkish lesson.

In the literature, there is a 5-factor 40-item scale developed by Durukan & Maden (2012) to determine the self-efficacy of 6th, 7th and 8th grade secondary school students towards Turkish lesson. Due to the different Turkish education system in the years when the scale was developed, 5th grade students were not included in the study group since 5th grades were not accepted as secondary school; CFA, which was also stated as a recommendation in the related study, was not conducted in the study, and due to the changing student profile and innovations in the literature in this field, a valid and reliable scale that can determine the self-efficacy of secondary school 5th, 6th, 7th, and 8th grade students towards Turkish lesson was developed. The Self-Efficacy Scale for Turkish Lesson differs from the related study in these aspects. When all the findings of the study are considered together, it can be said that the Self-Efficacy

Scale for Turkish Lesson (Appendix 1.) is a valid and reliable scale for determining the self-efficacy of secondary school students towards Turkish lesson.

Recommendations

This scale developed as a result of the study can be used to determine the self-efficacy of 5th, 6th, 7th, and 8th grade students towards Turkish lesson. In the scales to be prepared to determine the self-efficacy of secondary school students towards Turkish lesson, scale development studies with wider participation from across Turkey can be conducted.

Compliance with Ethical Standard

This research was found ethically appropriate by the decision of Aksaray University Human Research Ethics Committee dated 28.02.2023 and numbered E-34183927-000-00000811288.

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Appendix 1

Self-Efficacy Scale for Turkish Lesson

Factor Name	Item No	Scale Items
Self-Confidence towards the Lesson	1	I can recognize wrong information in Turkish lessons.
	2	I can answer the questions asked by my teacher in Turkish lessons.
	3	I can associate the new information I learn in Turkish lessons with my old knowledge.
	4	I can question the accuracy of the information I have learned in Turkish lessons.
	5	I can develop solutions to solve the problems we encounter in Turkish lessons.
	6	I can give feedback about Turkish lessons.
	7	I can support my friends who have difficulty understanding the topics in Turkish lessons.
	8	I can easily criticize my friends' behaviors in Turkish lessons.
	9	I can apply the knowledge, methods and techniques I have learned in other courses in Turkish lessons.
Performing	10	I can participate regularly in Turkish lesson activities.
	11	I can adapt to my class in Turkish lessons.
	12	I can focus on Turkish lessons.
	13	I can actively participate in Turkish lessons.
	14	I can do Turkish homework without difficulty.
	15	I am one of the most hardworking students in my Turkish class.
Negative Readiness	16	I have problems doing the activities in Turkish lessons.
	17	I have difficulty understanding Turkish lessons.
	18	I cannot easily answer the questions in Turkish lessons.
	19	I do not have enough information about Turkish lessons.
Approach towards Language Skills	20	I can use speaking methods/techniques and strategies (critical speaking, discussion, persuasion, guided speaking, creative speaking, etc.) in Turkish lessons.
	21	I can use reading methods/techniques and strategies (reading aloud, silent reading, skim reading, critical reading, etc.) in Turkish lessons.
	22	I can use listening methods/techniques and strategies (participant-participant listening, critical listening, etc.) in Turkish lessons.
	23	I can use writing methods/techniques and strategies (note taking, summarizing, free writing, guided writing, creative writing, etc.) in Turkish lessons.