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A study of reliability, validity and development of the teacher expectation scale

Hasan Igde[1,*], **Levent Yakar**[2]

[1]Kahramanmaraş Directorate of National Education, Kahramanmaraş, Türkiye
[2]Kahramanmaraş Sütçü İmam University, Department of Educational Sciences, Kahramanmaraş, Türkiye

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Abstract: This study aims to develop a 'Teacher Expectation Scale' (TES) to accurately and reliably measure teachers' expectations from their students. The development process of TES has an exploratory mixed method research design. The maximum variety sampling method was used when collecting qualitative data for the study, and the simple random sampling method was used for quantitative data. In the study groups of the research, there are 27 teachers for semi-structured interviews, 423 teachers for Exploratory Factor Analysis (EFA) and 750 teachers for Confirmatory Factor Analysis (CFA). For the content and face validity of the scale, six experts' opinions were obtained. A structure consisting of 36 items and 2 factors was revealed, which explains 73.54% of the total variance as a result of EFA. It has been seen that the items contained in TES show high levels of affiliation to the relevant factors and that all items are discriminative. The explored structure with EFA was evaluated using CFA. The following results were obtained when examining the compliance indices of the obtained model: $\chi^2/df=4.53<5$; CFI=0.99; TLI=0.99; RMSEA=0.07; SRMR=0.05. From the calculated reliability coefficients, McDonald's Omega (0.98) and stratified alpha coefficient (0.96) for the scale overall and Cronbach alpha coefficient (.98) for the dimensions were obtained. Reliability and validity results, obtained from TES showed that it is a valid and reliable measurement tool with two factors and 36 items. The subject of teacher expectation can be examined in terms of many variables using TES developed in the current research.

1. INTRODUCTION

It is possible for individuals to make some predictions about how the phenomena, of which they have an impression, will develop or how others will behave. Individuals often have expectations in accordance with their estimation. When emotions and thoughts turn into actions accordingly with expectations, it means that it is being attempted for the expectations to be realized. A self-fulfilling prophecy process may have been initiated if the source of the expectation being attempted to be realized is based on a false inference. According to the self-fulfilling prophecy theory, while people's beliefs and expectations of what will happen in the future are not actually true, they can have the attitude that will make them a reality (Merton, 1948). When this theory is adapted to the educational context, if a teacher expects a student to succeed, that teacher will

*CONTACT: Hasan IGDE ✉ hasanigde46@gmail.com Teacher, Kahramanmaraş Directorate of National Education, Kahramanmaraş, Türkiye

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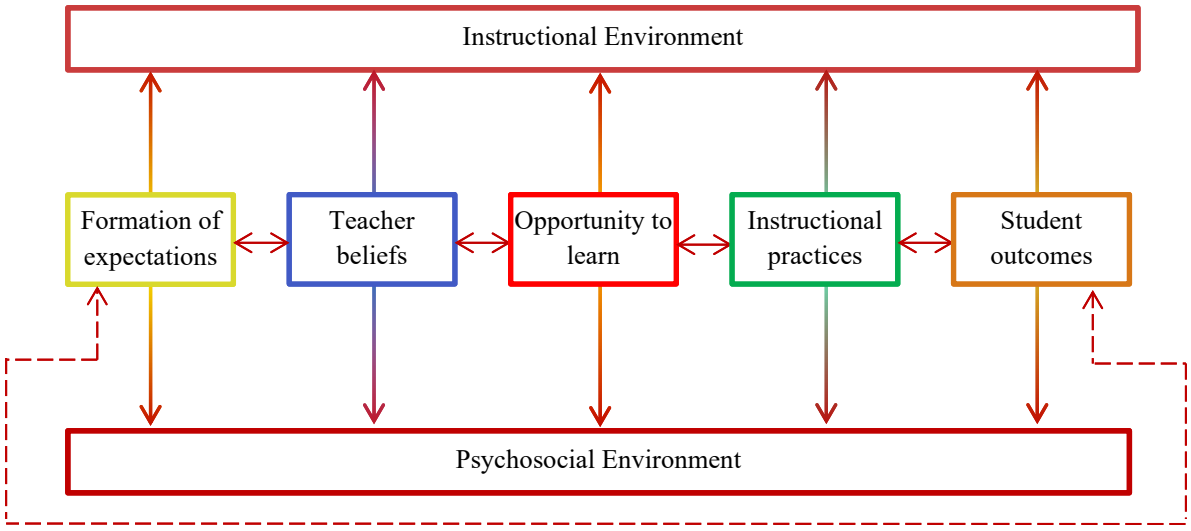
probably treat the student in a way that accomplishes his or her expectations. The student, on the other hand, will be likely to fulfil the expectations expected of him or her. Teacher expectation research began with Rosenthal and Jacobson's (1968) seminal work called 'Pygmalion in the Classroom', which paved the way for the concept of self-fulfilling prophecy. Teacher expectation research, which began to be considered as a part of educational psychology with this study, has been an important and developing field of research in terms of the subject area that continues to this day due to its impact on student achievement (de Boer et al., 2010; Rubie-Davies et al., 2020; Wang et al., 2018). The term teacher expectation refers to the inferences teachers make about students' academic and non-academic potential behavior, towards the future based on their experience (Chen et al., 2011; Good, 1987; Riley & Ungerleider, 2012). Teachers work in complex environments where they deal with various events that often develop suddenly and are unpredictable, requiring necessary rapid interpretation and resolution. Research on teacher expectation helps determine how teachers deal with complex processes that can meet the needs of all students. Although successful teaching requires much more than the teacher's expectation developed in the direction that all students can learn, teacher expectations are an important aspect of helping students realize their potential (Good et al., 2018). Teachers plan their lessons and shape learning opportunities under the influence of their expectations (Rubie-Davies et al., 2020). Teachers' approach to their students with their expectations can shape learning outcomes by influencing students' academic beliefs, motivations, and performances (Gershenson et al., 2016; Wang et al., 2018). Understanding teacher expectation is therefore an important element in understanding the nature of teachers' assessment of their students (Dusek & Joseph, 1983).

Teachers' expectations can be individual for each student separately, as well as developing as a whole at the class/group level. In recent years, some works seem to have begun to be conducted that examine teacher expectations at the classroom level as a context, which has not been adequately researched (de Jong et al., 2012; Friedrich et al., 2015; Li & Rubie-Davies, 2017; Timmermans & Rubie-Davies, 2018). Rubie-Davies (2015) has developed a new model, a contextual model of teacher expectation, based on his research on the effects of teacher expectation at the classroom level.

Rubie-Davies' (2015) contextual teacher expectation model is depicted with a series of steps shown in Figure 1.

Figure 1. *Rubie-Davies's (2015) contextual model of teacher expectations.*



In teacher expectation researches that have been conducted to date, student perceptions of individual teacher expectation are evaluated, and individual interactions between teachers and students, in general, are examined, rather than at the class level (de Boer et al., 2010; Diamond et al., 2004; Friedrich et al., 2015; Hinnant et al., 2009). In contrast with the previous models that focused on individual teacher expectations (see for details. Brophy & Good, 1970; Cooper, 1979; Darley & Fazio, 1980; Rosenthal, 1974) Rubie-Davies's (2015) contextual teacher expectation model, which focuses on classroom-level teacher expectation, offers a broader perspective on the nature of teacher expectation. In this model, the psychosocial environment and teaching environments are defined as the two main tool elements of classroom-level teacher expectation. These intermediary elements affect the social and academic outcomes of students. This model emphasizes that teacher expectation is associated with teacher beliefs and the important role that this relationship plays in influencing teachers' teaching practices and ultimately students' learning opportunities and outcomes. According to Rubie-Davies, just as teacher expectation can affect students' performance, students' behavior can also affect teacher expectation. In this mutual interaction, expectations can be communicated through verbal and non-verbal behaviors. Rubie-Davies' model is designed to illustrate the process of teacher expectation both at individual and class levels.

The concept of 'teacher expectation', whose importance and effects on students have been proven by various international studies, is quite new in the Turkish body of literature, and quite a few studies have been conducted in this field. A small number of studies in the Turkish body of literature (Eryılmaz, 2013; Gökdere, 2013; Kuş & Çelikkaya, 2010; Sazak-Pınar et al., 2012; Tutkun & Dinçer, 2015; Yüksel, 2017) focus more on student characteristics that affect expectations. In teacher expectation research, in which quantitative methods are used quite often (Wang et al., 2018), no scales were found that directly measure teacher expectation according to teacher perception when examined in the Turkish body of literature. Only one scale (Yüksel, 2017) was found to measure indirectly (according to student perception). In the international body of literature, when the scales developed on teacher expectations are examined, it can be said that there are some structural and purposeful differences, although there are partially similar items between them, and the scale developed in the current research. For example, there are significant differences like some scales that have been reached focus only on individual expectations (Szumski & Karwowski, 2019; van den Bergh et al., 2010), and some have a rather small number of items (Auwarter & Aruguete, 2008; Regalla, 2013), some focus only on academic expectation (Barriga et al., 2019; Sweatt, 2000), or some focus on a specific field in academic achievement, such as mathematical achievement (Tiedemann, 2000). On the other hand, as Chen et al. (2011) noted, the teacher expectation phenomenon includes academic and non-academic expectations. No scale has been found in international literature that measures academic expectations as well as non-academic teacher expectations.

The scale of teacher expectations, developed or adapted in accordance with Turkish culture from the point of view of teachers, was not found when scanned in the literature. Considering the mutual cyclical interaction between student behavior and teacher expectations, it is important to examine non-academic teacher expectations as well as academic expectations. This research aims to contribute to a better understanding of the level and direction of teacher expectations for students' academic and non-academic performances. Examining the relationships between various variables and a scale that measures teacher expectations according to teacher perception at the group/class level or school composition can add important insights to the literature. As Rubie-Davies and others (2020) emphasize, although there is now a rich history of teacher expectations, there is still a lot that is unknown. In this context, the aim of this research is to develop a 'Teacher Expectation Scale' that can measure teacher expectations, especially at the group/class level, and to conduct validity and reliability analyses.

2. METHOD

In this study, it is aimed to develop a teacher expectation scale (TES) and conduct validity and reliability analyses. In Turkish culture, the different dimensions of teacher expectations are not exactly known from the point of view of teachers. In this context, it is necessary to first explore the point of view of teachers regarding their expectations. In order to develop a TES based on teachers' points of view and literature, the model of this research is designed in an exploratory sequential design, which is one of the mixed method research types. The goal of the exploratory sequential pattern is to examine the research problem by first discovering it through qualitative data collection and analysis. After this first stage, qualitative data is analyzed, and a new data collection tool is developed from qualitative results. After the scale is developed, newly developed data collection tools are applied for testing (Creswell, 2019, p.41). The qualitative stage, which will meet the requirements of the quantitative stage in studies conducted in the form of scale development, plays a secondary role (Creswell & Plano Clark, 2018, p.98).

2.1. Sample

From the methods of sampling in the qualitative dimension of the research, the maximum variation sampling method was used, and in the quantitative dimension, the simple random sampling method was used. Demographic information of the participating teachers in the study groups that make up the sample of the study is presented in Table 1.

Table 1. *Demographic characteristics of teachers in samples.*

Data from the sample for Interview			***Data from the sample for EFA***			***Data from the sample for CFA***		
Gender	***N***	**(%)**	**Gender**	***N***	**(%)**	**Gender**	***N***	**(%)**
Female	14	51.8	Female	239	56.5	Female	403	53.7
Male	13	48.2	Male	184	43.5	Male	347	46.3
Total	27	100	Total	423	100	Total	750	100
Seniority	***N***	**(%)**	**Seniority**	***N***	**(%)**	**Seniority**	***N***	**(%)**
1 – 5 Year	8	29.6	1 – 5 Year	57	13.5	1 – 5 Year	191	25.5
6 – 10 Year	8	29.6	6 – 10 Year	103	24.3	6 – 10 Year	199	26.5
11 – 15 Year	1	3.7	11 – 15 Year	90	21.3	11 – 15 Year	119	15.9
16 – 20 Year	5	18.5	16 – 20 Year	57	13.5	16 – 20 Year	98	13.1
21+ Year	5	18.5	21+ Year	116	27.4	21+ Year	143	19.1
Total	27	100	Total	423	100	Total	750	100
School	***N***	**(%)**	**School**	***N***	**(%)**	**School**	***N***	**(%)**
Preschool	2	7.4	Preschool	45	10.6	Preschool	65	8.7
Primary School	2	7.4	Primary School	149	35.2	Primary School	241	32.1
Middle School	5	18.5	Middle School	132	31.2	Middle School	286	38.1
High School	18	66.6	High School	97	22.9	High School	158	21.1
Total	27	100	Total	423	100	Total	750	100

As shown in Table 1, there are three groups involved in this study. The priority criteria for maximum diversity at the qualitative stage of the research when determining study groups are the maximum different branches, levels, school types and socioeconomic structures of students in the schools that are assigned to the task, which can be reached in such a way as to best represent the whole. At the quantitative stage, attention was paid to the fact that the study groups reached by simple random sampling method for Explanatory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) consisted of different participants. When research groups

are divided in this direction, all schools in Kahramanmaraş are listed according to the districts through the corporate web page of the Ministry of National Education (MoNE, 2021). The listed schools are classified as school type, school level, provincial, district center and rural schools. Classified schools are divided into two clusters, attempting to make a balanced distribution. Data was collected from the first set for EFA and from the second set for CFA by a simple random sampling method. In this way, in order to generalize the whole, it was attempted to give the possibility of being selected equally to the sample units that could best represent the whole (Büyüköztürk et al., 2019, p.88).

The 27 participants in the first study group of the research constitute the qualitative study group, which is the exploratory aspect of the research in the development of TES. 423 participants in the second study group constitute quantitative study groups in which data is collected for EFA and 750 participants in the third study group for CFA. In order to determine the psychometric properties of the scale to be developed in scale development studies with minimal errors, the minimum number of data (N=300) specified by Tabachnick and Fidell (2015) for factor analysis was used as a base. In addition, Kline (1994) suggests that the sample size should be 10 times the number of items (Çokluk et al., 2018, p.206). An attempt was made to reach the number of samples to exceed the specified number of data and the proposal. In this direction, the number of teachers from which the data is collected is seen in Table 1, where the total number of items (36) found on the final scale developed in the current research is more than 10 times for EFA and 20 times for CFA.

2.2. Scale Development Process

During the development process of TES, the subject area was first examined. After the literature review, semi-structured interviews that lasted on average for 20 minutes were conducted face to face with 27 teachers, 15 of which are in a different branch, who work in various schools in terms of socioeconomic levels, so as to form a basis for the item pool of the scale.

Content analysis was performed on responses obtained from teacher opinions. Simultaneously with the content analysis, scale items were written, and the item pool began to be created. The items found in the item pool, during the development of TES, were compared with the information and findings given in the literature and an item pool was attempted to be realized in accordance with the literature (Gökdere, 2013; Kuş & Çelikkaya, 2010; Öztürk et al., 2002; Rubie-Davies, 2004, 2006, 2007, 2010, 2015). During the preparation of the item pool, the findings of expectation studies conducted in Turkiye (Erçetin et al., 2020; Kuş & Çelikkaya, 2010; Yurtal & Yontar, 2006), the general and specific purposes of the Turkish Ministry of National Education, the general competencies of the teaching profession (MoNE, 2017), as well as scale development studies that may include similar items with TES (Barriga et al., 2019; Eden et al., 2000; Sarıtepeci, 2018; Timmermans & Rubie-Davies, 2018) were benefited from. When writing scale items, the opinions of the participating teachers were examined individually, some expressions were changed and turned into a scale item, and consistency with the literature was given importance. In the item pool, firstly 47 items were written. Six experts, two of whom are experts in measurement and evaluation, one is an expert in educational programs and teaching, three are experts in educational sciences in the field of teacher training, and the faculty members were consulted on the written statements. According to expert opinions, some expressions, which are similar to each other, distorted in terms of meaning, or considered not to measure teacher expectations, were removed from the item pool, some items were corrected, and some new items were written. After expert opinions, the number of items was reduced to 42. After that, six teachers, the majority of whom received a master's degree or doctorate in the field of Educational Sciences, studied the items individually in terms of comprehensibility. After the reviews, the opinions of four Turkish language experts were received in terms of language and expression. After the teachers' opinions, it was seen that some

expressions in some items evoked different connotations, and new corrections and item subtractions were made. In the last case, a 37-item draft scale was developed. The scale is developed in five-level Likert-type as; 1-*Strongly disagree* (1.00-1.80), 2-*Mostly disagree* (1.81-2.60), 3-*Moderately agree* (2.61-3.40), 4-*Mostly agree* (3.41-4.20), 5-*Strongly agree* (4.21-5.00).

2.3. Data Analysis

Data analysis was carried out in two stages in the form of qualitative and quantitative data analysis.

2.3.1. *Analysis of qualitative data*

The content analysis method was used in the analysis of qualitative data collected in the research. Content analysis helps determine the existence of certain words or concepts in texts (Büyüköztürk et al., 2019, p.259) It is an analysis method for defining data, revealing the facts hidden in the data, classifying similar data within a specific concept and theme, and interpreting them by organizing them in a way that the reader can understand (Yıldırım & Şimşek, 2013). In this direction, the available data was analyzed by the researcher and encodings were made with a series of repetitions, including components and operations such as taking Edge notes on data sets, summarizing data, drawing conclusions, creating simple relationship sets, and returning to data sets again. Expert opinion on the coding has been taken. Because some codes may have the same meaning in expert evaluations, they were taken as a single code and new arrangements were made for encodings that did not meet the sub-themes. After the arrangements, the common or similar aspects between the resulting codes were re-examined and the theme and sub-themes were systematic, and the interrelated codes were collected under the relevant theme. An attempt was made to be written by associating the item pool one-on-one with the themes and codes that appeared in the content analysis. Codes and themes reached by content analysis in the research constitute the discoverer aspect of the current research.

2.3.2. *Analysis of quantitative data*

Lisrel 8.8, IBM SPSS Amos 24, Factor 10.5.03 and IBM SPSS Statistic 26.0 package programs were used in descriptive and structural statistics of quantitative data. The level of significance is designated as .05 in statistical analysis. The validity and reliability of the scale, developed in accordance with qualitative and quantitative data analysis, were examined. Content validity of the scale in accordance with expert opinions and its structure was analyzed by EFA. Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett Sphericity test were used to decide whether the data was suitable for factor analysis. In EFA analysis, the 'Maximum Likelihood Factor' Analysis method, which is a method of removing factors that have high similarities as a factorization technique, was selected, because it is thought that there is a relationship between factors, the 'Direct Oblimin' oblique rotation method was used. After the rotation process, the decision was made by evaluating the results of the eigenvalue slope graph and the parallel analysis method (Timmerman & Lorenza-Seva, 2011) together. The relationship between the score of each item and the total scale score was determined by the Pearson moments product correlation coefficient. Independent samples were analyzed by the *t*-Test to show that items can well distinguish between those with properties they want to measure and those without. CFA analysis was conducted to test whether the defined and bounded structure of TES was verified as a model. In addition, convergent and divergent validity methods with combined reliability have been applied as additional proof of reliability. Combined reliability is used to measure the overall reliability of multiple, heterogeneous, but similar expressions (Raykov, 1998). Convergent validity means that expressions for variables are related to each other and to the factor they form, while divergent validity means that expressions for variables must be less related to the factors they do not belong to than the factors in which they are located (Yaşlıoğlu,

2017). The combined reliability and average variance (AVE) values achieved were calculated in Excel 2010.

3. FINDINGS

This section presents the findings related to the validity and reliability analysis of TES.

3.1. Content Validity

The qualitative findings of the research on exploratory evidence are divided into two themes, academic and non-academic expectations. In the academic expectation theme, 17 codes were reached, while in the non-academic expectation theme, 14 codes were reached. Scale expressions developed with codes reached under generated themes are mapped by association. Expert opinions have been taken on scale expressions mapped to codes. As a result of expert opinions, the scope was validated, and it was determined that there was a semantically close relationship between each developed scale expression and the opinions of the participating teachers.

3.2. Construct Validity

The theoretical basis for the scale developed in the current research is based on Rubie-Davies' (2015) contextual teacher expectation model. It can be said that the theoretical structure of the scale is in accordance with the definitions of academic and non-academic teacher expectations by Chen et al. (2011). In addition, academic and non-academic teacher expectation themes created by content analysis in the qualitative dimension of the research are consistent with the structure discovered with EFA. This consistent structure has been confirmed by the CFA. This shows that the teacher expectation structure developed in qualitative analyses is generalizable with quantitative analyses and provides additional evidence for the structural validity of TES.

3.2.1. *Normality analysis*

In the process of scale development, normality analysis of the data obtained from the second study group was carried out. The suitability of the data for normal distribution was decided by looking at kurtosis and skewness values from analytical methods, as well as other graphical methods. In the analysis of the data obtained from the second study group, the skewness coefficient was found to be -0.321 and the kurtosis coefficient was 0.252. Accordingly, the fact that the skewness and kurtosis coefficients are between ±1.5 values (Tabachnick & Fidell, 2015) shows that the data meet the normality assumption.

3.2.2. *Exploratory factor analysis*

The scale was applied online to 483 participants reached for EFA. Data from the application was examined using Microsoft Office Excel 2010 prior to EFA. 22 data with the same demographic information and responses that appeared to have responded two or more times were extracted from the dataset. In addition, standard Z values were looked at to determine the end values in the dataset prior to EFA, and 38 data that were not in the ±3.29 range (Tabachnick & Fidell, 2015) were removed from the dataset. Thus, EFA was applied to the data set consisting of the remaining 423 teachers' responses to 37 items.

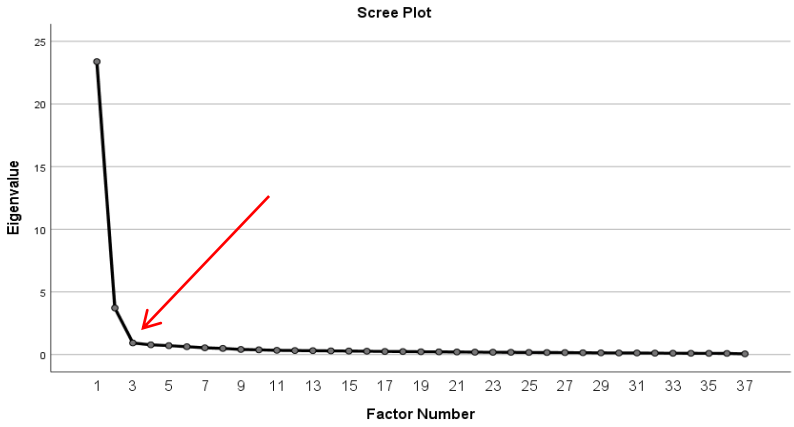
The Kaiser-Meyer-Olkin (KMO) coefficient and Barlett Sphericity test examined whether the data was suitable for factor analysis. Test results are presented in Table 2.

Table 2. *Kaiser-Meyer-Olkin (KMO) test and Bartlett's sphericity test results.*

Kaiser-Meyer-Olkin sample suitability measure (KMO)	.98
Bartlett's sphericity test chi-squared value	19461.37
Degree of freedom (Df)	666

Based on the value ranges specified in Table 2, the value of the KMO appears to be .98 in terms of the size of the sample of 423 people. According to this value, the sample is 'excellent' and the chi-square value determined by the Bartlett Sphericity Test results is significant ($X^2_{(666)}$= 19461.37; p<0.01). The slope chart of the scale is presented in Figure 2.

Figure 2. *Scree plot.*



As a result of EFA, the eigenvalues of the scale are collected under two factors greater than 1. It is seen in Figure 2 that the eigenvalues are very close to each other below 1 beginning from the third factor.

According to the data analysis, the charge value of the 37th item written as the reverse is designated as .350 in the first factor, and .038 in the second factor. Based on the opinion (Büyüköztürk, 2015) that selecting items with a load value greater than 0.45 would be a good criterion when studying factor loads, so the 37th item has been removed from the scale. Factor analysis has been renewed over the remaining 36 items. The eigenvalues, total variance and parallel analysis proofs explained by the scale after the matter extraction are presented in Table 3.

Table 3. *Total variance table explained by the scale.*

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Parallel Analysis	
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Real Data Variance	Random Variance
1	23.29	64.69	64.69	22.964	63.79	63.79	66.2	5.7
2	3.70	10.27	74.96	3.51	9.75	73.54	10.5	5.4
3	0.78	2.16	77.12				2.1	5.1

Extraction Method: Maximum Likelihood.

By examining Figure 2 and Table 3, it is seen that the scale elements are collected under factor 2. In the analysis made by the parallel analysis method, the real data variation values in the first two factors are greater than the random variation values. The eigenvalue of the third factor is less than 1. The results of the analysis to determine the number of factors appeared to support each other.

The total variance described by EFA is 73.54%. After the oblique rotation of the Direct oblique, the first sub-dimension contributed to the total variance of 20.85, and the second sub-dimension contributed to the total variance of 19.26. It seems that the cumulative variance finding is above the acceptable level of 60% (Çokluk et al., 2018, p.239).

Since the two-factor structure of TES discovered by EFA corresponds to the definitions of teacher expectations by Chen and others (2011), the items collected in the first factor are titled 'Academic Expectations (AE)' and the items collected in the second factor are titled 'Nonacademic Expectations (NE)'. The item and factor distribution loads of the scale are presented in Table 4.

Table 4. *Items and factor loadings (Not proofed English version).*

Factors	Item No	Items Students I teach,	Factor Loads	
			1	2
ACADEMIC EXPECTATIONS	4	I think they will achieve their goal.	0.968	0.143
	8	I think their motivation for studying will be high.	0.936	0.067
	3	I think their level of success will be high.	0.928	0.105
	5	I think they will have academic confidence.	0.926	0.071
	13	I think they will gain the learning outcomes included in the curriculum.	0.890	0.040
	9	I think they'll learn the content of the lessons.	0.889	0.006
	6	I think they'll be interested in their lessons.	0.875	0.001
	7	I think they will fulfil their responsibilities for their classes.	0.867	0.015
	16	I think they'll be ready for higher education training.	0.866	0.008
	12	I think they'll ask effective questions in class.	0.850	0.017
	10	I think they will actively participate in the classes.	0.820	0.052
	1	I think they will succeed in the exams they will take.	0.813	0.003
	15	I think they'll have a prepared approach to their development period.	0.806	0.068
	2	I think they will set goals for success.	0.803	0.034
	11	I think they'll give me the right answers to my questions about the lesson.	0.766	0.088
	14	I think they'll reflect on what they've learned in classes in their lives.	0.747	0.077
	17	I think they'll discover their abilities.	0.736	0.109
	18	I think they'll care about their personal development.	0.718	0.131
	20	I think they will use Turkish in accordance with the rules of the language.	0.607	0.232
	19	I think they'll communicate effectively.	0.594	0.271
	36	I think they will have high-status professions.	0.593	0.188
NONACADEMIC EXPECTATIONS	33	I think they will be individuals who respect people around them.	0.071	0.974
	32	I think they will respect values.	0.127	0.968
	31	I think they care about national values.	0.114	0.966
	27	I think they'll be useful people to society.	0.011	0.900
	28	I think they will adopt the behavior that society expects of them.	0.005	0.891
	22	I think they'll be individuals of character.	0.004	0.884
	29	I think they will be sensitive individuals to social events.	0.051	0.867
	34	I think they will build positive relationships with their families.	0.006	0.866
	21	I think they will have moral virtues.	0.013	0.845
	30	I think they'll be sensitive to protecting the natural environment.	0.075	0.834
	25	I think they'll be kind.	0.094	0.826
	26	I think they will show empathic approaches.	0.127	0.765
	24	I think they will show positive behavior appropriate to their developmental period.	0.190	0.736
	23	I think they will take care of their personal hygiene.	0.147	0.704
	35	I think they'll pay attention to their choice of friends.	0.263	0.634

Extraction Method: Maximum Likelihood, Rotation Method: Oblimin with Kaiser Normalization

A closer look at Table 4 suggests factor head values of 21 items (Item No: 1-20 and 36) found in the AE factor of TES change between .593 and .968, and factor head values of 15 items (Item No: 21-35) found in NE factor change between .634 and .974. It is seen that items in the scale are associated with a factor that is close to or above the value of .60. Items binding to over .60 related factors indicate high-level binding (Kline, 1994). In terms of whether the head values of items, boarding and factor meet the acceptance level, the difference between the load values of items are higher than the acceptance level and the load values of items have in two factors greater than .1 (Çokluk et al., 2018, p.233). In this direction, it can be said that TES is a powerful measuring tool.

3.2.2.1. Reliability Study of the Scale. The variance and alpha coefficients explained by each factor are presented in Table 5.

Table 5. *Reliability of the scale and sub-factors.*

Factors	Item Number	Variance	Cronbach's Alpha	McDonald's Omega
Factor 1 (AE)	21	% 63.79	0.98	0.98
Factor 2 (NE)	15	% 9.75	0.98	0.98
Total	36	% 73.54	0.98	0.98

In Table 5, it is seen that the reliability coefficient values of Cronbach's Alpha and McDonald's Omega are the same values. The Alpha and Omega coefficients of the first and second factors are 0.98. The scale-wide reliability coefficient value obtained with a stratified alpha of TES is calculated as 0.96. After calculating the reliability coefficients of the scale, the internal consistency reliability of the scale was calculated by the Split-half method. The internal consistency coefficient values obtained by analyzing the scale by the Split-Half method are presented in Table 6.

Table 6. *Internal consistency coefficients of the scale (Split-Half).*

	Cronbach's Alpha		Correlation Between Forms		Spearman-Brown Coefficient		Guttman Split-Half
Factor	Part1	Part2	*N* of Items	*r*	Equal Length	Unequal Length	Coefficient
1	.97	.96	21	.91	.96	.96	.95
2	.97	.96	15	.93	.96	.96	.96

In Table 6, it can be said that the internal consistency coefficient values of the two groups formed by analyzing TES separately for each factor by the Split-Half method are close to each other and are very good. These values indicate that items are regulated in a sequential nature (Ocak & Park, 2019). Positive and high levels of linear relationships were found between the groups. When Guttman and Spearman-Brown coefficients are evaluated, it can be said that TES has high reliability.

3.2.2.2. Item Analysis. In order to determine the item discrimination of the scale, the total score of the scale was determined and item analyses were performed on the lower 27% (*N*:114) and upper 27% (*N*:114) groups. On the scale, it was found that there was a significant difference between all items compared to the lower and upper groups of 27% compared to the independent samples *t*-Test. *T* values for the lower and upper groups range from -16.43 (sd:226, $p<.01$) to -22.30 (sd:226, $p<.01$). Adjusted item total test correlation values range from 0.73 to 0.84. Analysis of items by comparing TES' total test correlations with lower and upper groups of 27% is shown in Table 7.

Table 7. *Item-Total statistics.*

Factors	Item No	Bottom 27% Group (*N*: 114)		Top 27% Group (*N*: 114)		*t*	Corrected Item-Total Correlation
		$\bar{X}$	*S*	$\bar{X}$	*S*		
ACADEMIC EXPECTATIONS	1	2.40	0.69	3.90	0.69	-16.43	0.76
	2	2.41	0.62	3.90	0.64	-17.88	0.78
	3	2.36	0.64	3.86	0.65	-17.56	0.77
	4	2.46	0.63	3.93	0.61	-18.07	0.77
	5	2.37	0.66	3.99	0.62	-19.25	0.80
	6	2.49	0.63	4.10	0.53	-20.84	0.81
	7	2.51	0.60	4.11	0.50	-21.78	0.82
	8	2.35	0.58	3.96	0.56	-21.32	0.81
	9	2.48	0.57	4.04	0.49	-22.28	0.83
	10	2.51	0.57	4.09	0.56	-21.18	0.81
	11	2.59	0.59	4.03	0.49	-20.02	0.79
	12	2.46	0.57	3.91	0.59	-19.03	0.78
	13	2.54	0.57	4.00	0.58	-19.18	0.79
	14	2.41	0.65	4.01	0.65	-18.63	0.77
	15	2.38	0.62	3.98	0.59	-20.28	0.81
	16	2.30	0.62	4.00	0.59	-21.35	0.80
	17	2.39	0.57	4.00	0.67	-19.64	0.79
	18	2.44	0.57	3.97	0.57	-20.39	0.79
	19	2.50	0.66	4.15	0.60	-19.84	0.80
	20	2.24	0.64	4.02	0.62	-21.24	0.78
	36	2.29	0.63	3.82	0.65	-18.00	0.73
NONACADEMIC EXPECTATIONS	21	2.92	0.71	4.41	0.51	-18.26	0.77
	22	2.96	0.69	4.44	0.52	-18.26	0.79
	23	2.86	0.75	4.39	0.54	-17.61	0.77
	24	2.80	0.58	4.33	0.48	-21.83	0.84
	25	2.75	0.65	4.47	0.52	-22.20	0.83
	26	2.65	0.60	4.32	0.56	-21.96	0.80
	27	2.98	0.65	4.55	0.53	-19.91	0.81
	28	2.89	0.60	4.40	0.54	-19.88	0.80
	29	2.84	0.63	4.52	0.57	-21.05	0.82
	30	2.77	0.63	4.49	0.54	-22.30	0.82
	31	3.06	0.78	4.61	0.51	-17.72	0.75
	32	3.08	0.78	4.61	0.51	-17.54	0.74
	33	2.95	0.70	4.57	0.52	-19.91	0.80
	34	2.88	0.61	4.43	0.56	-19.93	0.78
	35	2.63	0.63	4.27	0.57	-20.67	0.81

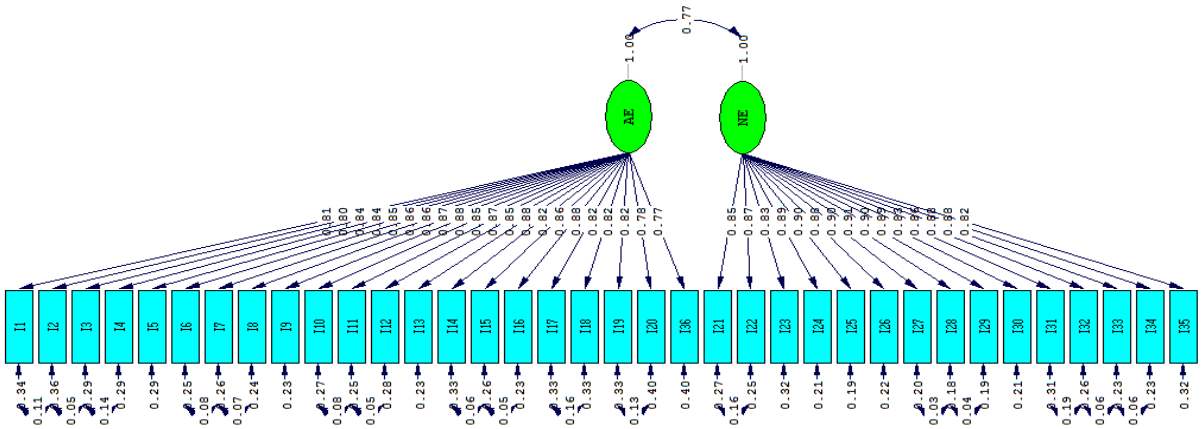
Since the total correlation value of all items contained in the scale is $r \geq 40$, each item found on the scale can be considered 'a very good item' (Büyüköztürk, 2015). After EFA, a 2-dimensional structure emerged in which 36 items can take place on the final scale.

3.2.3. *Confirmatory factor analysis*

The scale was applied online to 875 different participants from the study group reached by EFA. The data from the application was examined using Microsoft Office Excel 2010 before CFA.

59 data with the same demographic information and responses that appeared to have responded two or more times were extracted from the dataset. In addition, standard z values were looked at to determine the end values in the dataset prior to CFA, and 66 data that were not in the ±3.29 range (Tabachnick & Fidell, 2015) were excluded from the dataset. Thus, CFA analyses were performed on the data set of the remaining 750 teacher responses. A diagram of the model that appeared in accordance with the CFA is presented in Figure 3.

Figure 3. *CFA Diagram for TES.*



In CFA, *t* values were examined first. *T* values which show description states of latent variables to indicator variables exceed 2.56. Its level has been seen to be significant (p<.01). *T* values of all items range from 25.12 to 32.34. In this case, after CFA analysis, items were found to confirm the factors they are related to in the 99% confidence range (p=.000). Error variances in the path diagram of the scale have been studied. M28 has the lowest error variance examining the error variances of observed variables. It has a value of 0.18, and the highest error variance is by the M36th item. As it is stated in Figure 3, it has a value of 0.40. When the error variances of the scale are examined, it can be said that there is no item with a high error variance (Çokluk et al., 2018, p.305). In addition, it can be said that there is no incompatible value, and the relationship between hidden variables and observed variables is significant (p<.05). Standardized coefficients of 36 items found in TES are between .77 and .91. In this direction, it can be said that there is no item that should be excluded from the analysis.

Modification Indices (MI) for covariance indicate the connection between error terms. This covariance between error terms refers to the measurement error. The most common cause of this error is that the two expressions are understood in the same format, even if they are usually written in different forms (Yaşlıoğlu, 2017). In this direction, when modifying TES, covariance connections were established between indicators that have a closely related meaning in terms of expression, are successive in the order of expressions and are in the same factor. Accordingly, the recommended modification indexes in the CFA analysis were examined. Recommended modification indexes were evaluated in different aspects. First of all, attention was paid to ensure that the modified items were in the same subscale. Secondly, with the thought that consecutive answers may affect each other, only consecutive items were modified. Lastly and more importantly, the criterion of closeness in the meaning of the modified items was used. Totally, 164 covariance connections were proposed. In AE factor, 11 covariance connections (1-2, 2-3, 3-4, 6-7, 7-8, 10-11, 11-12, 14-15, 15-16, 17-18, 19-20) have been established between the indicators. In NE factor, 6 covariance connections (21-22, 27-28, 28-29, 31-32, 32-33, 33-34) have been established between the indicators. It was found that the modifications made a significant contribution to the chi-square value. Compliance indexes for CFA analysis before and after modification are given in Table 8.

Table 8. *Confirmatory factor analysis compliance indexes.*

	χ^2/df	RMSEA	GFI	AGFI	CFI	NFI	TLI	RMR	SRMR
Pre-modification	7.79	0.11	0.69	0.65	0.98	0.98	0.98	0.04	0.05
Post-modification	4.53	0.08	0.81	0.78	0.99	0.99	0.99	0.03	0.05
Compliance Indicator	Acceptable	Acceptable	Acceptable	Weak fit	Excellent	Excellent	Excellent	Good fit	Good fit

Sources: Brown, 2006; Hooper et al., 2008; Jöreskog & Sörbom, 1993; Tabachnick & Fidell, 2001; Ulrich & Lehrmann, 2008; as cited in Ocak & Park, 2019.

As a result of CFA, χ^2/df, Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), and standardized Root Mean Square Residual (SRMR) index values were reported, which were proposed to be examined by Kline (2019) to determine the validity of the model. However, some commonly used harmony indexes are studied in the literature (Çokluk et al., 2018; Tabachnick & Fidell, 2015). In CFA analysis, the value of χ^2 after modification was found to be 2610.72 and the degree of freedom was found to be 576. When these two values are divided into each other, χ^2/df (2610.72/576) results in a value of 4.53. The threshold value $\chi^2/df \leq 5$ was accepted when interpreting this value (Wheaton et al., 1977). It can be said that $\chi^2/df = 4.53$ shows acceptable compliance (Kline, 2019). The value of RMSEA shows a good fit when it is between .05 and .08, and it is thought acceptable between .80 and .10. When CFI and TLI are higher than .90 and when they are close to .95, they are indicative of suitable models (MacCallum et al., 1996; Hu & Bentler, 1999; as cited in Zhu et al., 2018). After modification, it is seen in Table 8 that the RMSEA value is 0.08, the GFI is 0.81, the AGFI is 0.78, and the SRMR compliance index is 0.05.

TES compliance indexes and Criterion compliance indexes were compared. In comparison, it can be said that the TES model developed in the classroom/group-level teacher expectation structure, along with the sub-dimensions of the scale items, has been verified and has generally acceptable compliance indexes.

3.2.4. *Composite reliability, convergent validity and divergent validity*

Test results for composite reliability and convergent and divergent validity of TES are presented in Table 9.

Table 9. *Composite reliability, convergent and divergent validity test results.*

Factors	CR*	AVE**	AVE SQUARE ROOT
AE	0.97	0.64	0.80
NE	0.97	0.71	0.84

*CR=Composite Reliability, **AVE= Average Variance Extracted

As a result of the analysis applied to the data obtained for CFA, the correlation value between AE and NE factors, which are the sub-dimensions of TES, was found to be 0.75 (p<.01). In addition, the fact that CR values for factors are 0.97 provides strong empirical evidence of scale reliability. For Convergent validity, it is seen in Table 9 that the CR values in the sub-dimensions of TES are greater than the average variation Extracted (AVE) values and the AVE values are greater than 0.5 (Raykov, 1998). Fornell and Larcker (1981) state that the fact that AVE square root values are greater than the sub-dimension correlation values is proof of divergent validity. It was found that AVE square root values in factors are greater than the correlation value between factors. As part of the results obtained, it can be said that the desired conditions for composite reliability and convergent and divergent validity are met.

4. DISCUSSION and CONCLUSION

Teacher expectation is the beliefs that teachers have about students' academic abilities and their subsequent success levels (Peterson et al., 2016), and achievements that teachers expect students to gain over time (Rubie-Davies et al., 2020). Many studies have tried to reveal that teacher expectations affect student performances in some ways. When studying this effect, it was found that the research highlighting the characteristics of teachers (Park & Byun, 2020; Peterson et al., 2016; Rubie-Davies et al., 2012; Timmermans & Rubie-Davies, 2018; Watson et al., 2017) seems to have started recently and has become a new focal point (Li, 2016). There is a need for scales that can measure classroom/group-level teacher expectations according to teacher perceptions in Turkish literature (İğde, 2021). In this direction, in the current research, it is aimed to develop a teacher expectation scale that can measure the expectation factors arising from the perceptions and attitudes of teachers at the classroom/group level and test the validity and reliability of the measurement scale.

The opinions of teachers are taken first when preparing the teacher expectation scale (TES). Codes and categories are organized by content analysis of teachers' opinions. Scale items are written in a way that is related to the specified codes and categories and in accordance with the teacher expectation literature (Chen et al., 2011; Rubie-Davies, 2004, 2006, 2007, 2010, 2015; Szumski & Karwowski, 2019). Expert opinions are taken to ensure the validity of the scope and outlook of the scale items. In accordance with the expert opinions, the content, size and description of the items are revised. The 47-item draft scale written before is organized as 37 items after expert opinions. The number of organized items differs from most studies in the teacher expectation literature. In teacher expectation studies, scales comprising of one item (Gregory & Huang, 2013; Papageorge et al., 2019; Peterson et al., 2016; Rubie-Davies et al., 2020; Watson et al., 2017; Zhu et al., 2018) or a couple of items, (Archambault et al., 2012; Denessen et al., 2020; Friedrich et al., 2015; Gentrup et al., 2020; Rubie-Davies & Peterson, 2016; Timmermans & Rubie-Davies, 2018) are widely used (Friedrich et al., 2015). The first studies on the subject (Babad et al., 1982; Rosenthal & Jacobson, 1968) and other studies conducted since (de Boer et al., 2010; Gentrup et al., 2020; Papageorge et al., 2019; Szumski & Karwowski, 2019; Zhu et al., 2018) mostly focus on the individual teacher expectation effect. The studies that examine teacher expectations on the basis of classroom/group level (de Jong et al., 2012; Demanet & van Houtte, 2012; Friedrich et al., 2015; Li & Rubie-Davies, 2017, Park & Byun, 2020; Rubie-Davies, 2006; Rubie-Davies et al., 2020; Timmermans & Rubie-Davies, 2018) have started to become widespread in recent years. Accordingly, the scale developed in the current study focuses on classroom/group-level teacher expectations. Group-level teacher expectation is measured by the general perception of teachers about the academic abilities of students in a group (Park & Byun, 2020). The TES developed in the current study can measure this general perception of classroom/group-level teacher expectation in a comprehensive and useful way. In addition, among teacher expectation scales in the international literature (Auwarter & Aruguete, 2008; Barriga et al., 2019; Regalla, 2013; Sweatt, 2000; Szumski & Karwowski, 2019; Tiedemann, 2000; van den Bergh et al., 2010), non-academic teacher expectation is often ignored. The TES developed in the current study takes into account the expectation of non-academic teachers as well as academic teacher expectations.

EFA and CFA are used to test the structural validity of TES. As a result of EFA, an item with a low factor load is excluded from the scale. Thus, a two-factor structure consisting of 36 items is obtained. The item content and factors show similarities with the studies of Chen et al. (2011). In this specified study, teacher expectation is defined in the form of teacher impression in schools regarding the potential academic and non-academic behavior of students. Especially with this study, and also with other teacher expectation studies (Barriga et al., 2019; Rubie-

Davies, 2015; Wang et al., 2021), consistently, the first factor of the scale is named 'academic expectation' and the second factor is named 'non-academic expectation'.

Each item contained in TES shows a high level of connection to the corresponding factor. In order to determine whether the theoretically designed model has been verified with data, CFA has been conducted. The data obtained from CFA showed that the compliance indices of the two-factor structure in TES are sufficient. In order to determine the total score predictive power of the items in TES and to determine their level of distinctiveness, item analyses are performed. In the lower and upper groups of 27% of the scale items within the scope of item analyses, a statistically significant difference was found between the groups and the *t* value is found to be significant. The adjusted item total test correlation values of the items indicate that the scale has high item distinctiveness and high validity. The CR and AVE values of TES provide the desired conditions for convergent and divergent validity with combined reliability. In addition, TES's Cronbach's Alpha, McDonald's Omega and stratified Alpha coefficient results are also confirmed by combined reliability coefficients.

The data collected with the scale have internal consistency. It is concluded that the correlation value between the two factors is high with the entire TES score and that there is a suggestive relationship between them. This high correlation between academic and non-academic teacher expectation factors is in accordance with the teacher expectation literature. The results show that all factors and the scale measure a similar structure. The final form of the 36-items TES including only positive wordings is provided in Appendix. As a result, TES reliability and validity proofs are presented, and TES is brought to the literature.

4.1. Implications

It can measure teacher expectations at the individual level with TES, and it can be more useful to measure teacher expectations at the group/class/school level as a whole. Along with TES, research can be conducted through standardized tests that measure the socio-psychological characteristics of students. Research examining the relationships between teacher expectations and various teacher qualities (such as self-esteem, teacher judgment, teacher enthusiasm, dedication, burnout, stereotypical thinking, prejudice, etc.) can be done using TES. Revealing the current state of TES, teacher expectation can also be used to determine which variables that uniform teacher expectation affects and which variables are affected. Conducting research, in which TES will be used, will be important in terms of contributing to the measurement power and purpose of the use of the scale.

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Declaration of Conflicting Interests and Ethics

The authors declare no conflict of interest. This research study complies with research publishing ethics. The scientific and legal responsibility for manuscripts published in IJATE belongs to the authors. **Ethics Committee Number**: Kahramanmaraş Sütçü İmam University/ Directorate of Social Sciences Institute, 07.12.2020/49

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Hasan Igde: Literature review, Investigation, Development of Data Collection Tool, Analysis, Visualization, Resources, and Writing the original draft. **Levent Yakar:** Methodology, Supervision, and Validation.

Orcid

Hasan Igde https://orcid.org/0000-0001-8857-6319
Levent Yakar https://orcid.org/0000-0001-7856-6926

REFERENCES

Archambault, I., Janosz, M., & Chouinard, R. (2012). Teacher beliefs as predictors of adolescents' cognitive engagement and achievement in mathematics. *The Journal of Educational Research, 105*(5), 319-328. https://doi.org/10.1080/00220671.2011.629694

Auwarter, A.E., & Aruguete, M.S. (2008). Effects of student gender and socioeconomic status on teacher perceptions. *The Journal of Educational Research, 101*(4), 242-246. https://doi.org/10.3200/JOER.101.4.243-246

Babad, E., Inbar, J., & Rosenthal, R. (1982). Pygmalion, galatea, and the golem: Investigations of biased and unbiased teachers. *Journal of Educational Psychology, 74*(4), 459-474. https://doi.org/10.1037/0022-0663.74.4.459

Barriga, C.A., Rodríguez, C., & Ferreira, R.A. (2019). Factors that bias teacher expectations: Findings from Chile. *Revista Latinoamericana de Psicología*, *51*(3), 171-180. https://doi.org/10.14349/rlp.2019.v51.n3.4

Brophy, J.E., & Good, T.L. (1970). Teachers' communication of differential expectations for children's classroom performance: Some behavioral data. *Journal of Educational Psychology, 61*(5), 365-374. https://doi.org/10.1037/h0029908

Büyüköztürk, Ş. (2015). *Sosyal bilimler için veri analizi el kitabı: İstatistik, araştırma deseni, SPSS uygulamaları ve yorum [Data analysis handbook for social sciences, statistics, research design, SPSS applications and interpretation]* (28th ed.). Pegem Academy.

Büyüköztürk, Ş., Kılıç-Çakmak, Erkan-Akgün, O., Karadeniz, Ş., & Demirel, F. (2019). *Eğitimde bilimsel araştırma yöntemleri [Scientific research methods in education]* (26th ed.). Pegem Academy.

Chen, Y.-H., Thompson, M.S., Kromrey, J.D., & Chang, G.H. (2011). Relations of student perceptions of teacher oral feedback with teacher expectancies and student self-concept. *The Journal of Experimental Education, 79,* 452-477. https://doi.org/10.1080/00220973.2010.547888

Cooper, H.M. (1979). Pygmalion grows up: A model for teacher expectation communication and performance influence. *Review of Educational Research*, *49*(3), 389-410. https://doi.org/10.3102/00346543049003389

Creswell, J.W. (2019). *A concise introduction to mixed methods research.* M. Sözbilir (Ed.). Pegem Academy.

Creswell, J.W., & Plano Clark, V.L. (2018). *Karma yöntem araştırmaları, tasarımı ve yürütülmesi [Designing and conducting mixed methods research].* Y. Dede, & S.B. Demir (Eds.). Anı Publication.

Çokluk, O., Şekercioğlu, G., & Büyüköztürk, S. (2018). *Sosyal bilimler için çok değişkenli istatistik: SPSS ve LISREL uygulamaları [Multivariate statistics SPSS and LISREL applications for social sciences]*. Pegem Academy.

Darley, J.M., & Fazio, R.H. (1980). Expectancy confirmation processes arising in the social interaction sequence. *American Psychologist, 35*(10), 867-881. https://doi.org/10.1037/0003-066X.35.10.867

de Boer, H., Bosker, R.J., & van der Werf, M.P.C. (2010). Sustainability of teacher expectation bias effects on long-term student performance. *Journal of Educational Psychology*, *102*(1), 168-179. https://doi.org/10.1037/a0017289

de Jong, R.J., van Tartwijk, J., Verloop, N., Veldman, I., & Wubbels, T. (2012). Teachers' expectations of teacher–student interaction: Complementary and distinctive expectancy patterns. *Teaching and Teacher Education*, *28*(7), 948-956. https://doi.org/10.1016/j.tate.2012.04.009

Demanet, J., & van Houtte, M. (2012). Teachers' attitudes and students' opposition to school misconduct as a reaction to teachers' diminished effort and effect. *Teaching and Teacher Education, 28*, 860-869. https://doi.org/10.1016/j.tate.2012.03.008

Denessen, E., Keller, A., van den Bergh, L., & van den Broek, P. (2020). Do teachers treat their students differently? An observational study on teacher-student interactions as a function of teacher expectations and student achievement. *Hindawi Education Research International*, 2020(*2471956*), 1-18. https://doi.org/10.1155/2020/2471956

Diamond, J.B., Randolph, A., & Spillane, J.P. (2004). Teachers' expectations and sense of responsibility for student learning: The importance of race, class, and organizational habitus. *Anthropology & Education Quarterly*, *35*(1), 75-98. https://doi.org/10.1525/aeq.2004.35.1.75

Dusek, J.B., & Joseph, G. (1983). The bases of teacher expectancies: A meta-analysis. *Journal of Educational Psychology*, *75*(3), 327-346. https://doi.org/10.1037/00220663.75.3.327

Eden, D., Geller, D., Gewirtz, A., Tenner, G.N., Inbar, I., Liberman, M., Pass, Y., Segev, I.S., & Shalit, M. (2000). Implanting pygmalion leadership style through workshop training: Seven field experiments. *Leadership Quarterly, 11*(2), 171-210. https://doi.org/10.1016/S1048-9843(00)00042-4

Erçetin, Ş.Ş., Akbaşlı, S., & Baysülen, E. (2020). Managers' and teachers' expectations from students and students' perception of these expectations. *International Journal of Society Researches, 16* (Education and Society Special Issue), 5941-5954. https://doi.org/10.26466/opus.705266

Eryılmaz, A. (2013). Motivation and amotivation at school: Developing the scale of expectations from the teacher about class engagement. *Mehmet Akif Ersoy University Journal of Education Faculty, 13*(25), 1-18.

Friedrich, A., Flunger, B., Nagengast, B., Jonkmann, K., & Trautwein, U. (2015). Pygmalion effects in the classroom: Teacher expectancy effects on students' math achievement. *Contemporary Educational Psychology, 41*, 1-12. https://doi.org/10.1016/j.cedpsych.2014.10.006

Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Gentrup, S., Lorenz, G., Kristen, C., & Kogan, I. (2020). Self-fulfilling prophecies in the classroom: Teacher expectations, teacher feedback and student achievement. *Learning and Instruction*, *66*, 1-17. https://doi.org/10.1016/j.learninstruc.2019.101296

Gershenson, S., Holt, S.B., & Papageorge, N.W. (2016). Who believes in me? The effect of student-teacher demographic match on teacher expectations. *Economics of Education Review*, *52*, 209-224. https://doi.org/10.1016/j.econedurev.2016.03.002

Good, T.L. (1987). Two decades of research on teacher expectations: Findings and future directions. *Journal of Teacher Education, 38*(4), 32-47. https://doi.org/10.1177/002248718703800406

Good, T.L., Sterzinger, N., & Lavigne, A. (2018). Expectation effects: Pygmalion and the initial 20 years of research. *Educational Research and Evaluation*, *24*(3-5), 99-123. https://doi.org/10.1080/13803611.2018.1548817

Gökdere, E. (2013). Management of teacher expectations. *Education and Society in The 21st Century, 2*(5), 179-183.

Gregory, A., & Huang, F. (2013). It takes a village: The effects of 10th-grade college-going expectations of students, parents, and teachers four years later. *American Journal of Community Psychology, 52*, 41-55. https://doi.org/10.1007/s10464-013-9575-5

Hinnant, J.B., O'Brien, M., & Ghazarian, S.R. (2009). The longitudinal relations of teacher expectations to achievement in the early school years. *Journal of Educational Psychology, 101*(3), 662-670. https://doi.org/10.1037/a0014306

İğde, H. (2021). A review study on the phenomenon of teacher expectation. *The Journal of Turkish Educational Sciences (JTES), 19*(2), 1366-1390. https://doi.org/10.37217/tebd.988678

Kline, P. (1994). *An easy guide to factor analysis*. Guilford Publications.

Kline, R.B. (2019). Exploratory and confirmatory factor analysis. Y. Petscher, & C. Schatsschneider (Eds.), *Applied quantitative analysis in the social sciences* (pp.171-207). Routledge.

Kuş, Z., & Çelikkaya, T. (2010). Social sciences teachers' expectations for effective social sciences teaching. *Van Yüzüncü Yıl University Journal of Education*, *7*(2), 26-51.

Li, Z. (2016). The magnitude of teacher expectation effects: Differences in students, teachers and contexts. *International Journal of Learning Teaching and Educational Research, 15*(2), 76-93. Access address: http://ijlter.org/index.php/ijlter/article/view/612

Li, Z., & Rubie-Davies, C.M. (2017). Teachers matter: Expectancy effects in Chinese university English-as-a-foreign-language classrooms. *Studies in Higher Education*, 42, 2042-2060. https://doi.org/10.1080/03075079.2015.1130692

Merton, R.K. (1948). The self-fulfilling prophecy. *The Antioch Review*, *8*(2), 193-210. https://doi.org/10.2307/4609267

Ministry of National Education, (2017). *Öğretmenlik mesleği genel yeterlikleri [General competencies for teaching profession].* Directorate General for Teacher Training and Development. https://oygm.meb.gov.tr/meb_iys_dosyalar/2018_06/29111119_TeachersGeneralCompetencies.pdf

Ministry of National Education, (2021, 21 January). *Okullar ve diğer kurumlar [Schools and other institutions].* http://www.meb.gov.tr/baglantilar/okullar/index.php?ILKODU=46

Ocak, G., & Park, F. (2019). Developing analytical thinking scale for high school students. *Afyon Kocatepe University Journal of Social Sciences, 22*(1), 49-68. https://doi.org/10.32709/akusosbil.565699

Öztürk, B., Koç, G., & Tezel-Şahin, F. (2002). Behavioral differences of the classroom teachers about high and low expected students. *The Journal of Educational Sciences and Practice, 1*(2), 161-181.

Papageorge, N.W., Gershenson, S., & Kang, K.M. (2019). Teacher expectations matter. *Review of Economics and Statistics, 102*(2), 234-251. https://doi.org/10.1162/rest_a_00838

Park, J.H., & Byun, S.Y. (2020). Principal support, professional learning community, and group-level teacher expectations. *School Effectiveness and School Improvement, 32*(1), 1-23. https://doi.org/10.1080/09243453.2020.1764061

Peterson, E.R., Rubie-Davies, C., Osborne, D., & Sibley, C. (2016). Teachers' explicit expectations and ımplicit prejudiced attitudes to educational achievement: relations with student achievement and the ethnic achievement gap. *Learning and Instruction, 42*, 123-140. https://doi.org/10.1016/j.learninstruc.2016.01.010

Raykov, T. (1998). Coefficient alpha and composite reliability with ınterrelated nonhomogeneous items. *Applied Psychological Measurement, 22*(4), 375-385. https://doi.org/10.1177/014662169802200407

Regalla, M. (2013). *Teacher expectations and students from low socioeconomic background: A perspective from Costa Rica* (ED540254). ERIC. https://eric.ed.gov/?id=ED540254

Riley, T., & Ungerleider, C. (2012). Self-fulfilling prophecy: How teachers' attributions, expectations, and stereotypes influence the learning opportunities afforded Aboriginal students. *Canadian Journal of Education, 35*(2), 303-333. http://hdl.handle.net/10072/47128

Rosenthal, R. (1974). *On the social psychology of the self-fulfilling prophecy: Further evidence for pygmalion effects and their mediating mechanisms*. MSS Modular Publications.

Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom: Teacher expectation and pupils' intellectual development*. Holt, Rinehart and Winston.

Rubie, C.M. (2004). *Expecting the best: Instructional practices, teacher beliefs and student outcomes* (Publication No. 3129406) [Doctoral dissertation, Auckland University]. Auckland Campus Repository. https://researchspace.auckland.ac.nz/bitstream/handle/2292/28/02whole.pdf

Rubie-Davies, C.M. (2015). *Becoming a high expectation teacher: Raising the bar*. Routledge. https://doi.org/10.4324/9781315761251

Rubie-Davies, C.M. (2007). Classroom interactions: Exploring the practices of high and low expectation teachers. *British Journal of Educational Psychology, 77*(2), 289-306. https://doi.org/10.1348/000709906X101601

Rubie-Davies, C.M. (2010). Teacher expectations and perceptions of student attributes: Is there a relationship? *British Journal of Educational Psychology, 80*(1), 121-135. https://doi.org/10.1348/000709909X466334

Rubie-Davies, C.M. (2006). Teacher expectations and student self-perceptions: Exploring relationships. *Psychology in the Schools, 43*(5), 537-552. https://doi.org/10.1002/pits.20169

Rubie-Davies, C.M., Flint, A., & McDonald, L.G. (2012). Teacher beliefs, teacher characteristics, and school contextual factors: What are the relationships? *British Journal of Educational Psychology, 82*, 270-288. https://doi.org/10.1111/j.2044-8279.2011.02025.x

Rubie-Davies, C.M., Meissel, K., Alansari, M., Watson, P., Flint, A., & McDonald, L. (2020). Achievement and beliefs outcomes of students with high and low expectation teachers. *Social Psychology of Education, 23*(5), 1173-1201. https://doi.org/10.1007/s11218-020-09574-y

Rubie-Davies, C.M., & Peterson, E.R. (2016). Relations between teachers' achievement over and underestimation, and students' beliefs for Maori and Pakeha students. *Contemporary Educational Psychology, 47*, 72-83. https://doi.org/10.1016/j.cedpsych.2016.01.001

Sarıtepeci, M. (2018). Adaptation study of the achievement motivation scale based on value-expectancy theory. *International Journal of Education Science and Technology, 4*(1), 28-40.

Sazak-Pınar, E., Çifçi-Tekinarslan, I., & Sucuoğlu, B. (2012). Assessing teachers' and mothers' expectancies for social skills of children with mental retardation. *Elementary Education Online, 11*(2), 353-368.

Sweatt, S. (2000). *The relationship among teacher expectations, teacher attitudes toward the TAAS, and student achievement* (Publication No. 49945119) [Doctoral dissertation, University of North Texas]. UNT Digital Library. https://digital.library.unt.edu/ark:/67531/metadc2691/

Szumski, G., & Karwowski, M. (2019). Exploring the pygmalion effect: The role of teacher expectations, academic self-concept, and class context in students' math achievement. *Contemporary Educational Psychology*, *59*, 1-10. https://doi.org/10.1016/j.cedpsych.2019.101787

Tabachnick, B.G., & Fidell, L.S. (2015). *Using multivariate analysis*. Harper Collins College Publishers.

Tiedemann, J. (2000). Gender-related beliefs of teachers in elementary school mathematics. *Educational Studies in Mathematics*, *41*(2), 191-207. http://dx.doi.org/10.1023/A:1003953801526

Timmerman, M.E., & Lorenzo-Seva, U. (2011). Dimensionality assessment of ordered polytomous items with parallel analysis. *Psychological Methods, 16*(2), 209-220. https://doi.org/10.1037/a0023353

Timmermans, A.C., & Rubie-Davies, C.M. (2018). Do teachers differ in the level of expectations or in the extent to which they differentiate in expectations? Relations between teacher-level expectations, teacher background and beliefs, and subsequent student performance. *Educational Research and Evaluation*, *24*(3-5), 241-263. https://doi.org/10.1080/13803611.2018.1550837

Tutkun, C., & Dinçer, C. (2015). An examination on expectations regarding the social skills considered critical for preschoolers' success. *Ankara University Journal of Faculty of Educational Sciences, 48*(1), 65-85.

van den Bergh, L., Denessen, E., Hornstra, L., Voeten, M., & Holland, R.W. (2010). The implicit prejudice attitudes of teachers: Relations to teacher expectations and the ethnic achievement gap. *American Educational Research Journal, 47*(2), 497-527. https://doi.org/10.3102/0002831209353594

Wang, S., Meissel, K., & Rubie-Davies, C.M. (2021). Teacher expectation effects in Chinese junior high schools: Exploring links between teacher expectations and student achievement using a hierarchical linear modelling approach. *Social Psychology of Education, 24*(5), 1305-1333. https://doi.org/10.1007/s11218-021-09654-7

Wang, S., Rubie-Davies, C.M., & Meissel, K. (2018). A systematic review of the teacher expectation literature over the past 30 years. *Educational Research and Evaluation. 24*(3-5), 124-179. https://doi.org/10.1080/13803611.2018.1548798

Watson, P.W.S.J., Rubie-Davies, C.M., Meissel, K., Peterson, E.R., Flint, A., Garrett, L., & McDonald, L. (2017). Teacher gender, and expectation of reading achievement in New Zealand elementary school students: Essentially a barrier? *Gender and Education*, *31*(8), 1-20. https://doi.org/10.1080/09540253.2017.1410108

Wheaton, B., Muthen, B., Alwin, D.F., & Summers, G.F. (1977). Assessing reliability and stability in panel models. *Sociological Methodology, 8,* 84-136. https://doi.org/10.2307/270754

Yaşlıoglu, M.M. (2017). Factor analysis and validity in social sciences: Application of exploratory and confirmatory factor analyses, *Istanbul University Journal of the School of Business, 46*(Special Issue), 74-85.

Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative research methods in the social sciences].* (9th Extended Ed.). Seçkin Publisher.

Yurtal, F., & Yontar, A. (2006). Sınıf öğretmenlerinin öğrencilerinden bekledikleri sorumluluklar ve sorumluluk kazandırmada kullandıkları yöntemler [The responsibilities that classroom teachers expect from their students and the methods they use to gain responsibility]. *Çukurova University Journal of Social Sciences Institute, 15*(2), 411-424.

Yüksel, S. (2017). *The effect of improving teacher expectancy strategies on the attitudes and academic achievement of students in English course (An example of action research)* [Unpublished master's thesis]. University of Düzce.

Zhu, M., Urhahne, D., & Rubie-Davies, C.M. (2018). The longitudinal effects of teacher judgement and different teacher treatment on students' academic outcomes. *Educational Psychology, 38*, 648-668. https://doi.org/10.1080/01443410.2017.1412399

APPENDIX

Teacher Expectation Scale (TES)'s Turkish version

Öğretmen Beklentisi Ölçeği (ÖBÖ)						
Madde No	**MADDELER** **Derslerine girdiğim öğrencilerin,**	Kesinlikle katılmıyorum	Çoğunlukla katılmıyorum	Orta düzeyde katılıyorum	Çoğunlukla Katılıyorum	Kesinlikle katılıyorum
1	Girecekleri sınavlarda başarılı olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
2	Başarılı olmak için hedefler belirleyeceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
3	Başarı düzeylerinin yüksek olacağını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
4	Başarı hedeflerine ulaşacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
5	Akademik özgüvene sahip olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
6	Derslerine karşı ilgili olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
7	Derslerle ilgili sorumluluklarını yerine getireceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
8	Ders çalışma motivasyonlarının yüksek olacağını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
9	Ders içeriklerini öğreneceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
10	Derslere aktif katılım göstereceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
11	Ders konusunda sorularıma doğru yanıtlar vereceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
12	Derslerde etkili sorular soracaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
13	Ders programında yer alan öğrenme kazanımlarını edineceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
14	Derslerde öğrendiklerini hayatlarına yansıtacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
15	Gelişim dönemlerine uygun hazırbulunuşluğa sahip olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
16	Üst kademe öğrenimlerine hazır olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
17	Yeteneklerini keşfedeceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
18	Kişisel gelişimlerine önem vereceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
19	Etkili iletişim kuracaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
20	Türkçeyi dil kurallarına uygun kullanacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
21	Ahlaki erdemlere sahip olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
22	Karakterli bireyler olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
23	Kişisel bakımlarına özen göstereceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
24	Gelişim dönemlerine uygun olumlu davranışlar göstereceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
25	Nezaket kurallarına uyacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
26	Empatik yaklaşımlar göstereceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
27	Topluma faydalı bireyler olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
28	Toplumun kendisinden beklediği davranışları benimseyeceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
29	Toplumsal olaylara duyarlı bireyler olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
30	Doğal çevreyi korumaya duyarlı olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
31	Milli değerlere önem vereceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
32	Manevi değerlere saygılı olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
33	Çevrelerine saygılı bireyler olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
34	Aileleriyle olumlu ilişkiler kuracaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*
35	Arkadaş seçimlerine dikkat edeceklerini düşünüyorum.	*1*	*2*	*3*	*4*	*5*
36	Yüksek statülü mesleklere sahip olacaklarını düşünüyorum.	*1*	*2*	*3*	*4*	*5*