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A Study on Scale Adaptation to Determine Classroom Learning Environment Perceptions

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Abstract

This study aimed to perform a scale adaptation to determine students' perceptions of a classroom learning environment. The sample of the study consisted of 337 students for exploratory factor analysis and 1,639 students for confirmatory factor analysis. The scale known as My Class Activity adapted in this study was developed by Gentry and Gable (2001). The adapted scale is a five-point Likert-type scale consisting of four factors (interest, choice, challenge, and enjoyment). The scale was previously adapted to Turkish culture by Deniz and Saranlı (2017), and in this study, we readapted the scale to Turkish culture. Exploratory factor analysis and reliability analysis of the data obtained from the scales were completed with SPSS software and confirmatory factor analysis with AMOS. As a result of the analyses of the adapted scale, it was decided to remove the challenge dimension. After the validity and reliability studies obtained from the three-factor (interest, choice, enjoyment) structure of the scale, it was concluded that the scale could be used in Turkish culture.

Keywords: Learning Environment, Perception, Validity, Reliability

1. Introduction

In-class learning environments are the main environments where teaching processes are shaped. The learning environment is structured by factors that include students, teachers, and teaching activities (Jackson et al., 1999; Gentry, Rizza, & Gable, 2001; Graetz, 2006; Rayneri, Gerber, & Wiley, 2006). Learning environments that facilitate the interaction of these factors contribute to creating a positive classroom climate (Adıay, 2011). This is because the personal and behavioral characteristics of individuals interact with environmental influences (Bandura, 1986), and the learning environments are social environments that require students to establish interactions (Graetz, 2006). Given the fact that teachers and students, among the main factors in the learning environment, can directly affect each other in the process, the importance of classroom activities is also revealed. When previous studies in the literature are reviewed, it is observed that there are findings supporting the fact that structured learning environments contribute to the motivation of students (Tremblay-Wragg et al., 2019; Sani, Rochintaniawati & Winarno, 2018). The perception of the learning environment is as effective on the learning

outcomes as the structuring of the learning environment. Patrick et al. (2011) stated that students' perception of a harmonious relationship with their teachers increases students' motivation. This situation also positively affects academic success in the process (Cayubit, 2022; Church, Elliot, & Gable, 2001; Ogundokun, 2011; Yerdelen & Sungur, 2019). In two studies they conducted among undergraduate students, Church, Elliot, and Gable (2001) found an indirect relationship between perceived classroom environment and academic achievement. Wang and Holcombe (2010) stated that students' perceptions of the school learning environment affect academic achievement. In their study, Yerdelen and Sungur (2019) revealed that the perceived classroom learning environment had significant predictive power in explaining students' achievement goals for science learning. In this respect, it is seen that especially students' interest, attitude, behavior and motivation towards activities in classroom learning environments are considered to be among the factors affecting the learning process (Cayubit, 2022.).

Determining the interests, attitudes, motivations and behaviors of the students towards the learning process and then revealing the missing aspects contribute positively to the learning process. In this direction, necessary arrangements should be made in the learning environment to increase academic success, which is considered as an output of the learning process. However, it is not correct to expect each student to show similar characteristics in the learning environment. In this case, it is necessary to reveal the characteristic differences of the students regarding the learning environment. Identifying differentiated groups in the classroom is seen as the first step in responding to the needs of these groups.

Gifted students are one of the differentiated groups encountered in the classroom. Gifted individuals have some differences in terms of characteristics such as learning capacity, academic achievement, attention, motivation, mental risk-taking, interests, and problem-solving skills (Akkaya, 2016; Davis & Rimm, 1998; George, 1995; Jackson & Klein, 1997; Renzulli, 2002). These differences cause differentiation in the perception of the learning environment. Determining the interests, attitudes and motivations of gifted students, who are among the students with special needs, and responding to the learning needs of these students is important in terms of ensuring class integrity. It is necessary to create a suitable learning environment to provide gifted students with appropriate education in an effective manner (Thomson, 2010). It is known that it becomes easier for gifted children to display the high-level performance they have when they are provided with suitable learning environments (Sak, 2017). In this context, when we examine studies on gifted students, it is foreseen that the perception of learning environment can be associated with academic success and motivation (Akdağ & Köksal, 2022; Joel, 2019). In order to prevent the loss of motivation, students' needs must be met in learning environments (Snyder & Linnenbrink-Garcia, 2013). In this sense, to determine the perceptions of gifted students in the classroom as a learning environment, it is necessary to use a measurement tool. From this perspective, it is important to include gifted individuals, who can differ in cognitive, affective or psychomotor areas, in the development process of the measurement tool, as they are one of the important student groups in an inclusive learning environment.

"My Class Activities" Scale

If we look at the students' perceptions of learning environments in the classroom in general, Gentry and Gable (2001) evaluated this situation in a 31-item scale called "My Class Activities" under the factors of interest, challenge, choice, and enjoyment. In the literature, the dimensions of in-class education activities have been evaluated in different ways with different measurement tools, and the importance of these dimensions has been presented.

While students' interest in the learning environment makes teaching more effective, it also creates a suitable learning environment (Marsh & Cooper, 1981). Students who are in the position of the learner in the classroom gain more from the situations where they are at the center of attention (Tynjälä, 1999). In this context, Abrantes, Seabra, and Lages, in their study (2007,) revealed that the student's interest has the primary effect on perceived learnings followed by pedagogical effect and learning performance. Mazer (2012) stated that emotional interest is a situation that encourages students to want to learn more in a lesson. Skinner and Pitzer (2012) noted that interest supports students' emotional participation in the lesson. Some studies on the challenge dimension report that pushing the limits in the classroom helps the improvement of students (Stone & Rottier, 1996; Eccles & Midgley,

1989). It is stated that especially challenging activities contribute to developing high-level thinking skills (Alderman, 1999). The choice dimension is considered as an important fact, or especially in the motivation and success of the student (Deci, 1995; Glasser, 1996). Bandura (1997) studied the motivations of individuals who could choose and regulate themselves in achieving their goals. Eisele (1996) argued that in order to increase their motivation and learning, students should be able to have more choices in their activities. Regarding the evaluations on the entertainment dimension, Hernik and Jaworska (2018) stated that it was easier to remember the information learned at an enjoyable lesson. Goetz et al. (2006) stated that the lack of enjoyment dimension in the learning process was one of the main factors negatively affecting the achievement of educational goals.

The aim of this study was to contribute to the adaptation of the scale prepared by Genty and Gable (2001) into Turkish in order to contribute to the evaluation of the activities carried out in the classroom in different dimensions and to help teachers identify students' characteristics.

2. Research Model

This study is a methodological validity and reliability study of a measurement tool. It was carried out to adapt the "My Class Activities" scale into Turkish language. The scale was renamed Classroom Learning Environment Perceptions scale.

2.1 Study Group

The study group, whose data were collected at different times, consisted of 5th, 6th, 7th and 8th grade students in three schools affiliated with the Ministry of National Education in Malatya in 2018. A total of 337 (179 girls, 158 boys) participants were included in the exploratory factor analysis (EFA), and 1,639 participants (862 girls, 777 boys) in the confirmatory factor analysis (CFA). The convenience sampling method was used in the study to provide convenience in terms of time, effort, cost, and transportation (Cohen, Manion & Morrison, 2007; Gall, Gall, & Borg, 2007). Descriptive statistics of the study groups are given in Table 1 and Table 2.

Table 1: Descriptive statistics of the participants in the exploratory factor analysis

		n	%
Bilsem	Attending BILSEM	13	3.9
	Not attending BILSEM	324	96.1
Gender	Female	179	53.1
	Male	158	46.9
Grade	5 th Grade	90	26.7
	6 th Grade	129	38.3
	7 th Grade	59	17.5
	8 th Grade	59	17.5
	Total	337	100.0

Table 2: Descriptive statistics of the participants in the confirmatory factor analysis

		N	%
Bilsem	Attending BILSEM	75	4.6
	Not attending BILSEM	1 551	94.6
	Lost data	13	0.8
Gender	Female	862	52.6
	Male	777	47.4
Grade	5 th Grade	431	26.3
	6 th Grade	588	35.9
	7 th Grade	340	20.7
	8 th Grade	280	17.1
	Total	1 639	100.0

2.2 Data Collection Tool

As for the data collection tool, the 31-item classroom learning environment scale prepared by Gentry and Gable (2001) formed the basis of the study. However, revised and reduced to 29 items based on the version that had been adopted in China by Yang et al. (2016) with a sample (N= 943) where gifted students were also included. The reason for considering the revised version of the scale for China was that it is more up-to-date, and gifted students are also included in the sample. The response options of the 29-item Likert-type scale is “always (5), often (4), sometimes (3), rarely (2), never (1)”. As the answers approach 5, students' participation in classroom learning activities increases, and as they approach 1, participation decreases. There is no question with a negative sentence root in the scale. The 4-factor structure in the version of the scale did not change. These factors are stated as “interest, choice, challenge, and enjoyment” (Gentry & Gable, 2001). These dimensions are described below:

Interest: *This sub-dimension is defined as the student's affinity for lessons, subjects and activities in the learning environment, directing his/her studies in line with the areas s/he is close to, and having positive feelings about working in these areas. In the study of Gentry and Gable (2001), it was stated that the reliability coefficient of this factor was 0.89.*

Challenge: *This sub-dimension is defined as the high-level, compelling effort that the student shows to exceed his/her own mental capacity. In the study of Gentry and Gable (2001), it was stated that the reliability coefficient of this factor was 0.78.*

Choice: *This sub-dimension is defined as the student's ability to direct several variables in the learning environment in line with his/her own will. In the study of Gentry and Gable (2001) it was stated that the reliability coefficient of this factor was 0.75.*

Enjoyment: *This sub-dimension is defined as the student's enjoyment and satisfaction with some variables (lesson, time, activity, project) in the learning environment. In the study of Gentry and Gable (2001), it was stated that the reliability coefficient of this factor was 0.92.*

In the scale adapted by Yang et al. (2016), in which gifted individuals were included in the sample, the reliability coefficients of the factors were stated as 0.88 in the dimension of interest, 0.73 in the dimension of challenge, 0.81 in the dimension of choice, and 0.91 in the dimension of enjoyment. The adaptation study of this scale was previously carried out in our country by Deniz and Saranlı (2017) with 214 participants under the name of "My Class Activities". Our study is actually a re-adaptation study, and what distinguishes our study from Deniz and Saranlı's (2017) study is the large sample size and the inclusion of gifted students in the sample. Another distinctive feature of the study is the grade levels of the students in the sample. While the original study was designed for use in the 6th, 7th and 8th grades, the scale was applied to the 3rd, 4th, 5th, and 6th grades in its adaptation to Chinese culture. In the previous Turkish adaptation study, it was applied to the 3rd, 4th, 5th, 6th, 7th and 8th grades, and in our study, it was only applied to the 5th, 6th, 7th and 8th graders. While determining the grade level of the study group, it was taken into account that the learning environments of the study group were differentiated by the fact that they attended basic courses such as science, mathematics and social studies until the 5th grade in a single classroom environment with their classroom teachers, and then they were taught these courses with teachers from different branches. Grade levels were determined by taking into account the variables mentioned while adapting to Turkish. Goodness of fit values in the CFA analysis of the study of Deniz and Saranlı (2017) were reported as $\chi^2(426) = 643.97$, CFI=0.98, NFI=0.94, IFI=0.98, GFI= 0.84, RMSEA=0.049. In the study of Deniz and Saranlı (2017), the number of factors was preserved, as in other studies, and the reliability coefficient of the factors was stated as 0.86 for interest, 0.82 for challenge, 0.83 for choice, and 0.90 for enjoyment.

2.3 Data Analysis

Before determining the sub-factors and reliability levels of the measurement tool called "Classroom Learning Environment Perceptions" used in the study, the dataset was checked for any missing or wrong data. Afterwards, the validity and reliability of the data obtained from the measurement tool were tested. For linguistic and semantic validity, help was obtained from 2 language experts. The scale, which was created as a result of the translation, was evaluated with 19 students (9 defined as gifted, 10 with normal development), and necessary corrections were made in line with the opinions of language experts.

In terms of construct validity, first, an exploratory factor analysis was performed on the 29-item scale with the SPSS package program with 337 students (179 female, 158 male). In the exploratory factor analysis, without making any prediction, it is examined whether the items are well-distributed among the factors. This is a scale adaptation study, and although the factor loads are determined beforehand, it requires an objective evaluation as to whether there is any problem in the distribution of the items to the factors, since the scale is adapted to a new language and also to new students studying in a different learning environment in an educational sense.

After the exploratory factor analysis, the 18-item scale was administered to 1639 (862 female, 777 male) students in confirmatory factor analysis. In this direction, the 29-item scale was revised with exploratory factor analysis and an 18-item scale was obtained after the necessary changes were made. The data obtained in the study were analyzed with the SPSS (Statistical Package for Social Sciences for Windows 25.0) program. Afterwards, AMOS package program was used for confirmatory factor analysis.

2.4 The Findings of the Exploratory Factor Analysis

The data were evaluated using descriptive statistical methods (number, percentage, mean, standard deviation). In addition to normality tests, which determine whether the data are normally distributed or not, data can be evaluated with distribution measures such as histogram, Q-Q plot, box-plot graphics, coefficient of variation, and skewness and kurtosis (Hayran & Hayran, 2011). The normal distribution was checked with conformity tests of normality and kurtosis skewness values. Reliability analysis is carried out to control whether the statements in the scales are consistent with each other and whether all the statements measure the same subject (Ural & Kilic, 2006). In order for the tests and results to be reliable, the measurements must be reliable. In this context, the reliability of the scale was examined with the Cronbach's Alpha coefficient.

Table 3: Results of the Exploratory Factor Analysis for Classroom Learning Environment Perceptions

Factor	Items	Factor Load
Interest	1	0.664
	2	0.683
	3	0.553
	4	0.665
	5	0.428
	8	0.521
Choice	18	0.702
	19	0.664
	20	0.630
	21	0.530
	22	0.609
	23	0.739
	24	0.773
Enjoyment	25	0.736
	26	0.831
	27	0.736
	28	0.824
	29	0.662
	Variance Explained	52.528
	KMO=0.909, Bartlett's Test $X^2(153) = 2247.342$, $p=0.000^*$	

As shown in Table 3, the "Classroom Learning Environment Perceptions" scale was developed with four dimensions. To reveal the factor pattern of the scale, an Exploratory Factor Analysis was performed. To test the suitability of the sample size for factorization, the Kaiser-Meyer-Olkin (KMO) test was applied before the exploratory factor analysis. The KMO value was found to be 0.909 as a result of the analysis. In line with this finding, it was concluded that the sample size and items were "adequate" for factor analysis. Additionally, when the results of the Bartlett's Sphericity test were examined, it was observed that the Chi-square value was significant ($\chi^2(153) = 2247.342, p < 0.01$). Accordingly, it was assumed that the data had a multivariate normal distribution. After confirming the suitability of the data for factor analysis, an exploratory factor analysis was performed by using Principal Components Analysis to examine the factor structure of the scale.

As a result of the factor analysis, item 10 with a factor load of less than 0.40 and the items 16, 15, 13, 12, 11, and 7 loaded on several factors were excluded from the analysis. In the exploratory factor analysis, since one of the dimensions consisted of two items, the structure was examined in three dimensions. As a result of the factor analysis, items 9 and 14 with a factor load of less than 0.40 and the items 7, 6, and 17 that overlapped in several factors were excluded from the analysis. It was determined that the scale had an ideal distribution in its final state. Therefore, the relevant scale was accepted with three dimensions, and it was determined that the factor structure was acceptable. The scale developed according to the results of the exploratory factor analysis explains 52.528% of the total variability.

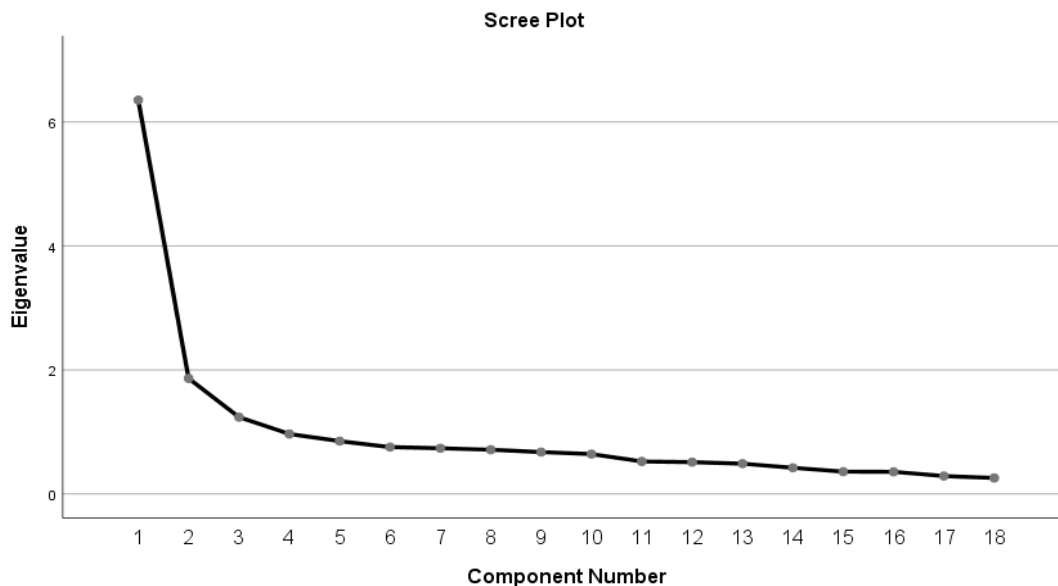


Figure 1: Scree plot explaining the factor number of Classroom Learning Environment Perceptions scale

In Figure 1, the horizontal axis represents the number of factors, and the vertical axis shows eigenvalues in the graph. It is observed that the acceleration in decrease stops after the first point (Cokluk, O., Sekercioglu, G. & Buyukozturk, S. ,2012). From the third point onwards, the decrease reflects the degree of contribution to the variance. Given the eigenvalues and percentages of variance and the data obtained from the graph, it was decided that the scale should be limited to three factors in line with the exploratory factor analysis (Table 4).

Table 4: The results of the item analysis for Classroom Learning Environment Perceptions scale

	r	t (Upper 27%-Lower 27%)	p value (Upper 27%- Lower 27%)
I1	0.464	-10.325	0.000*
I2	0.383	-8.171	0.000*

I3	0.488	-10.010	0.000*
I4	0.376	-7.316	0.000*
I5	0.509	-11.868	0.000*
I8	0.510	-10.859	0.000*
I18	0.373	-7.504	0.000*
I19	0.391	-8.114	0.000*
I20	0.417	-8.967	0.000*
I21	0.472	-10.253	0.000*
I22	0.449	-10.263	0.000*
I23	0.578	-12.828	0.000*
I24	0.642	-15.751	0.000*
I25	0.587	-16.180	0.000*
I26	0.703	-15.893	0.000*
I27	0.699	-14.511	0.000*
I28	0.651	-16.334	0.000*
I29	0.618	-13.176	0.000*

$n = 337$, ** $n1 = n2 = 91$;

$r =$ Item Total Score Correlation * Significant values for $p < 0.05$.

Table 4 shows the independent group t-test results showing the distinctiveness and the total correlation of all items. The minimum value required for the item-total test correlation to be sufficient is specified as 0.30 (Brinkman, 2009). Among the scale items whose correlations we examined, those with a correlation below 0.30 should not be included in the analysis. The item-total test correlation values of the answers given by the participants to the scale questions were examined, and it was determined that there were no items below 0.30. The item-total test correlation values of all items vary between 0.373 and 0.703. As seen in the item-total test correlation table, it was determined that all items were related to each other. To determine the distinctiveness of the items in the scale, the raw scores obtained from the scale were ranked from the largest to the smallest, and the mean scores of the groups in the lower 27% and upper 27% were compared with the independent group t-test. As a result of the comparison, it was observed that there was a statistically significant difference between the means of the item scores in the lower and upper groups. From this point of view, it can be said that the scale is distinctive in terms of measuring the desired quality.

Table 5: Reliability analysis of Classroom Learning Environment Perceptions scale

Scale and sub-dimensions	Number of Items	Cronbach's Alpha
F	18	0.887
F1: Interest	6	0.727
F2: Choice	5	0.696
F3: Enjoyment	7	0.901

Reliability analysis is performed to test whether the statements on the scales are consistent with each other and whether all the statements measure the same subject (Ural & Kilic, 2006). In the reliability analysis, the Cronbach's Alpha (α) coefficient value varies between 0-1; a value between 0.00-0.40 is considered unreliable; between 0.40 and 0.60, it is considered low reliability, between 0.60 and 0.80, it indicates a reliable scale, and if between 0.80-1.00, it is considered a highly reliable scale (Tavsancil, 2005). When the results were examined, the Cronbach's Alpha value of Classroom Learning Environment Perceptions scale was found 0.887, while the Cronbach's Alpha was 0.727 for the "Interest" sub-dimension, 0.696 for the "Choice" sub-dimension, and 0.901 for the "Enjoyment" sub-dimension, making it a very reliable scale.

Table 6: Split-half reliability of Classroom Learning Environment Perceptions scale

Cronbach's Alpha	Part 1: S1, S2, S3, S4, S5, S8, S18, S19, S20.	0.755
	Part 2: S21, S22, S23, S24, S25, S26, S27, S28, S29.	0.574
Split-half correlation		0.632
Spearman-Brown Co-efficient		0.775
Guttman Split-Half Co-efficient		0.752

The split half method mentioned in Table 6 is also one of the methods used for reliability. The logic in the split half method is to divide the items in the data set into two and evaluate the relationship between these two halves. According to the results, the correlation in both halves was 0.632; the Spearman Brown coefficient was 0.775, and the Gutman Split Half coefficient was 0.752, and the scale was found to be reliable.

2.5 The Findings of the Confirmatory Factor Analysis

Confirmatory factor analysis is an analysis that is theoretically supported and used to reveal the level at which factors consisting of many variables are compatible with real data (Sümer, 2000). Confirmatory factor analysis is a method used to determine validity in the process of adaptation from different cultures of measurement tools developed over different samples. The 18-item scale obtained in line with the exploratory factor analysis was re-evaluated with a different sample, and parameter estimates for the model were obtained as shown in Figure 2.

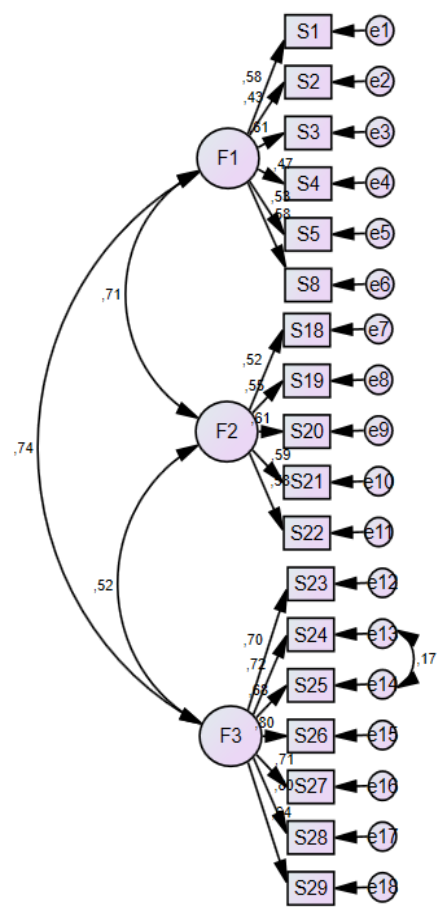


Figure 2: First-level multi-factor model confirmatory factor analysis of Classroom Learning Environment Perceptions scale

The model and parameter estimates in Figure 2 are presented in detail in Table 7, together with the t statistics.

Table 7: Confirmatory factor analysis factor loads of Classroom Learning Environment Perceptions scale

	Standardized Factor loads	Regression weight Factor Load	S.H.	C.R. (t statistics)	P
I1	0.579	1.000	-	-	-
I2	0.432	0.746	0.053	14.108	<0.001
I3	0.609	1.155	0.063	18.2	<0.001
I4	0.474	0.912	0.060	15.17	<0.001
I5	0.531	1.174	0.071	16.538	<0.001
I8	0.576	1.167	0.067	17.529	<0.001
I18	0.523	1.000	-	-	-
I19	0.547	0.998	0.066	15.066	<0.001
I20	0.606	1.020	0.064	15.954	<0.001
I21	0.594	1.081	0.068	15.795	<0.001
I22	0.576	1.168	0.075	15.533	<0.001
I23	0.702	1.000	-	-	-
I24	0.723	0.926	0.034	26.924	<0.001
I25	0.680	0.937	0.037	25.364	<0.001
I26	0.797	0.961	0.033	29.566	<0.001
I27	0.707	0.839	0.032	26.477	<0.001
I28	0.795	1.025	0.035	29.517	<0.001
I29	0.637	0.817	0.034	23.954	<0.001

The values given in Table 7 show whether the scale items are statistically significant in line with the t statistics. Accordingly, first, it is seen that all t values are significant, and the factor load values of all items are above 0.40. If the factor load values are above 0.40, it can be concluded that the items are suitable for the structure, and the structure is confirmed. It was found that the factor loads of all items were between 0.432 and 0.797.

Table 8: Findings related to confirmatory factor analysis of Classroom Learning Environment Perceptions scale

Index	Perfect Fit Criterion	Acceptable Fit Criterion	Calculated Values	Result
X^2/SD	$0 \leq \chi^2/df \leq 3$	$3 \leq \chi^2/df \leq 5$	3.752	Acceptable Fit
RMSEA	$0.00 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$	0.041	Acceptable Fit
CFI	$0.95 \leq CFI \leq 1.00$	$0.85 \leq CFI \leq 0.95$	0.961	Perfect Fit
IFI	$0.95 \leq IFI \leq 1.00$	$0.80 \leq IFI \leq 0.95$	0.961	Perfect Fit
TLI	$0.95 \leq TLI \leq 1.00$	$0.80 \leq TLI \leq 0.95$	0.954	Perfect Fit
SRMR	$0 \leq SRMR \leq 0.05$	$0.05 \leq SRMR \leq 0.10$	0.032	Perfect Fit
Chi square/ Degrees of Freedom (X^2/SD)				
Root Mean Square Error of Approximation (RMSEA)				
Comparative Fit Index (CFI)				
Incremental Fit Index (IFI)				
Turker-Lewis Index (TLI)				
Standardized root means square residual (SRMR)				

When the findings in Table 8 were examined, it was determined that the Structural Equation Modeling Results of the scale was significant at the $p=0.000$ level according to the confirmatory factor analysis, and it was related to the scale structure with 18 items and three factors. According to the results of the first level multi-factor analysis, it was determined that "Classroom Learning Environment Perceptions Scale" showed an acceptable fit when the goodness of fit indices were examined. As a result, it was determined that the necessary construct validity of the scale was achieved.

Table 9: Reliability analysis of Classroom Learning Environment Perceptions scale

Scale and sub-dimensions	Item number	Cronbach's Alpha
F	18	0.880
F1:Interest	6	0.703
F2:Choice	5	0.705
F3: Enjoyment	7	0.883

Reliability analysis is performed to test whether the statements in the scales are consistent with each other and whether all the statements measure the same subject (Ural & Kilic, 2006). When the results in Table 9 are examined, the Cronbach's Alpha value of the Classroom Learning Environment Perceptions Scale was 0.880, while the Cronbach's Alpha value was 0.703 for the interest sub-dimension, 0.705 for the choice sub-dimension, and 0.883 for the enjoyment sub-dimension, and the scale was determined to be very reliable.

Table 10: Split half reliability values of Classroom Learning Environment Perceptions scale

Cronbach's Alpha	Part 1: I1, I2, I3, I4, I5, I8, I18, I19, I20.	0.744
	Part 2: I21, I22, I23, I24, I25, I26, I27, I28, I29.	0.856
Correlation between two halves		0.660
Spearman-Brown coefficient		0.795
Guttman Split-Half coefficient		0.779

The Split-Half Method is one of the methods used to measure reliability. The logic of this method is to divide the items in the data set into two and evaluate the relationship between the two halves. According to the values obtained in Table 10, the correlation in both halves was 0.660, the Spearman Brown coefficient was 0.795 and the Gutman Split Half coefficient was 0.779, and the scale was found to be reliable.

3. Discussion and Conclusion

In the study, the scale named "My Class Activities" was adapted into Turkish. Different methods and techniques were used to determine the validity level of this measurement tool. First, the linguistic validity of the scale was evaluated. After the linguistic validity was ensured, data collection and analysis processes were completed. As a result of the analysis of the 4-factor scale called "My Class Activities," it was concluded that the challenge dimension should be removed. It can be argued that this 3-factor scale obtained can be used as a data collection tool.

The "My Class Activities" scale developed by Gentry and Gable (2001) was adapted to different cultures, including Turkey, and its 4-dimensional version was generally accepted after some modifications (Pereira et al., 2010; Yang et al. ., 2012; Yang et al., 2016; Deniz & Saranli, 2017).

When the adaptations of the scale in the relevant literature were examined, it was seen that Pereira et al. (2010) implemented it with 826 gifted children in the USA and the 4-factor version of the scale was accepted after revisions. Yang et al. (2012) carried out the adaptation of the scale to South Korean culture with 564 students and the four-factor structure was confirmed after necessary changes. While adapting the scale to the Chinese culture, Yang et al. (2016) implemented the survey with 943 children, including gifted students, and the 4-factor version of the scale was accepted after some adjustments. The adaptation study to the Turkish culture, which was carried out by Deniz and Saranli in Turkey in 2017, was applied with 214 students and the 4-dimension version of the scale was preserved with some changes. In line with the analyses performed, it was decided that the challenge dimension should be removed from the four existing dimensions that are, "interest, choice, challenge, and enjoyment" dimensions.

When studies in the literature are examined, it is observed that students' interest in the teaching process (Abrantes, Seabra & Lages, 2007; Mazer, 2012; Skinner & Pitzer, 2012; Tynjälä, 1999), students' freedom of choice in the teaching process (Bandura, 1997; Deci, 1995; Eisele, 1996; Glasser, 1996).) and the state of enjoyment in the teaching process (Hernik & Jaworska, 2018; Goetz et al., 2006) are described as the factors that directly or indirectly affect the teaching process.

Regarding the dimension of “challenge” in the teaching process, which was excluded from the scale, it is reported that it has a positive contribution to the learning process of students (Alderman, 1999; Eccles & Midgley, 1989; Ravenna, 2008; Stone & Rottier, 1996). In the literature, it is stated that the lack of this dimension in the learning process may result in boredom (Feldhusen & Kroll, 1991). In addition, it is also mentioned that the challenge process has the effect of maximizing the learning in a learning process (Clifford, 1990). It is important for students to experience pushing the boundaries/challenge so that they can evaluate it in classroom activities. However, in our study, this dimension was removed from the scale according to the analysis results.

As the scale was adapted to Turkish by Deniz and Saranlı (2017) previously, it was used in several studies in Turkey. In a study by Senol and Koca (2021), a comparison was performed between the gifted and peers with normal development and no statistically significant difference was found between the two groups. In a study by Ozarslan (2019), the scale was used together with another scale to determine the students' perceptions of science course classroom activities and their level of interest in science subjects in terms of gender and class variables and to reveal the relationship between these variables. According to the findings obtained by Ozarslan (2019), the students' level of enjoyment, interest, ability to make choices, and the perception of pushing the boundaries regarding science activities, and interest levels in science subjects were found to be moderate. In addition, in this study, it was determined that there was no significant difference between students' perceptions of science course classroom activities by gender and grade level. Çelik (2019) used this scale to evaluate the social studies course activities of the 5th, 6th and 7th grade students in terms of gender, age and class variables, and it was determined that the students' scores for this scale were high. Özarslan and Sarac (2019) used the scale in their study to determine the relationship between secondary school students' perceptions of science course classroom activities and their motivation to learn science. In this study, it was determined that there was a statistically significant positive correlation between the students' scores of having an interest in the classroom activities of the science course, enjoying the activities, pushing the limits during the activity, and their score levels for general motivation for learning science and motivation for research.

The small number of gifted students in the sample is the main limitation of the study. In addition, the exclusion of the other special needs groups, which are indeed placed in inclusive education, from the dimensions of the scale is another important limitation of the study. Although the original scale was 4-dimensional, the challenge dimension was removed from the scale. The fact that the differentiation of this dimension is not supported by qualitative studies is also among the limitations of the study. This scale adaptation study attempted to adapt the scale to Turkish culture that would enable the evaluation of students' perceptions of classroom activities. In the light of the data obtained, it is thought that it will provide support to the literature on the relevant subject.

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Appendix A

SINIF İÇİ ÖĞRENME ORTAMINA YÖNELİK ALGI ÖLÇEĞİ						
Cinsiyetiniz: Kız O Erkek O						
Sınıf: 5. Sınıf O 6. Sınıf O 7. Sınıf O 8. Sınıf O						
	Aşağıdaki ifadelerin karşısına size uygun olan sıklık derecelerinden birini seçerek (X) şeklinde işaretleyiniz.	Her zaman	Sıklıkla	Bazen	Nadiren	Hiçbir zaman
İlgi	1. Derslerde yaptıklarım ilgi alanıma girer.					
	2. Derslerde, ilgimi çeken konular üzerinde çalışma fırsatım vardır.					
	3. Derslerde yaptıklarım bana yeni ve ilginç fikirler verir.					
	4. Derslerde, ilgi çekici konular üzerinde çalışırım.					
	5. Öğretmenlerim, beni derslerde ilgi çekici etkinliklere dâhil eder.					
	6. Dersler, ilgi alanlarımı keşfetmeme yardımcı olur.					
Seçme	7. Derslerde ortak çalışmalar yaptığımızda, çalışma arkadaşlarımı seçebilirim.					
	8. Derslerde yapacağım proje konularını seçebilirim.					
	9. Derslerde fazla sayıda görev olduğunda, bana uygun olanı seçebilirim.					
	10. Derslerde kullanacağım materyalleri seçebilirim.					
	11. Derslerde geliştirdiğim ürünleri sunacağım kişileri seçebilirim.					
Eğlenme	12. Derslere gireceğim zamanı dört gözle beklerim.					
	13. Derslerde eğlenceli vakit geçiririm.					
	14. Öğretmenlerim öğrenmeyi eğlenceli bir hale getirir.					
	15. Derslerde yaptığım etkinlikleri severim.					
	16. Derslerde çalışmalar yapmayı severim.					
	17. Derslerde yaptığım etkinlikler eğlencelidir.					
	18. Derslerde, üzerinde çalıştığım projeleri severim.					