

## VALIDITY AND RELIABILITY STUDY ON THE TEACHER'S ATTITUDE SCALE ABOUT THE PLACE BASED EDUCATION APPROACH APPLIED DURING THE SOCIAL STUDIES<sup>1</sup>

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### ABSTRACT

This research has been aiming on making the study of validity and safety of the "The Teacher's Attitude Scale About The Place Based Education Approach Applied During The Social Studies" which was developed for determining the social studies teachers' attitudes through the place based education approach. During the preparation of the scale, primarily an item pool was formed scanning the literature and expert opinions are addressed. The working team of the research, is formed of totally 228 teachers who are situated in the Konya city center and giving social studies courses and determined through the simple random sampling method. Exploratory factor analysis was made for the purpose of examining the construct validity of "The Teacher's Attitude Scale About The Place Based Education Approach Applied During The Social Studies". Total item correlation (item distinction values) which gives the scale on consistency of the items with each other and all the test for examining the reliability and Cronbach internal consistency factor have been calculated. As a result of the research it was precipitated with the items (17 items) excluded from the scale that it was valid and reliable. The scale consists of 28 items and 3 sub-dimensions.

**Keywords:** Place based education, social studies, attitude.

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## INTRODUCTION

From past to present, we have seen that the children are not enough who are raised only with the theoretical information and far from the real life. Such approaches are needed to get students active; not to imprison them to the class, inside four walls; to get them have strong connections with the places they live and to help them finding solutions to the local problems. The place based education, is one of these approaches. Place Based Education (Yer Temelli Eğitim) is listed as "Place Based Education" in foreign literature. David Sobel is one of the pioneers of this approach and gives important information about the approach.

According to Sobel (2004), place based education; is the process of using local society and the environment as a starting point for teaching concepts in language arts, mathematics, social studies, science and other fields.

This approach, which emphasizes the experiences gained by doing, the experiences of learning the real world, increases academic achievement in education; helps students to develop stronger ties to society; increases students' gratitude towards natural life and creates responsibilities for them to serve as active, helping citizens. Community spirit and environmental quality are developed through the active involvement of local citizens, community organizations and environmental resources in school life. According to Yıldız Yılmaz and Tabaru (2017); Even place based education is a new approach as a name, it is not an approach that has not been implemented in educational institutions before. The place-based education approach, which enables learners to learn in-situ and by living and provides permanent and meaningful learning on this path, constitutes the framework of many approaches that are also applied in the constructivist approach.

Smith and Sobel (2010) suggest place and community based education. And they consider rural, urban and sub-urban societies as an approach to teach academic disciplines and an approach that allows them to think about the role of the school as a starting place for the environment in society.

It is known that place based education is widely used in the United States. The PEEC-Place Based Education Evaluation Collaborative has an important role in the implementation of place-based education and the development of its programs in the United States. Examples of PEEC programs are following (PEEC, 2018): Sustainable Schools Project, Litzsinger Road Ecology Center, A Forest For Every Classroom/FFEC, Thompson Island Outward Bound Education Center.

Examples of Place Based Education activities given by Roberts (2013) are:

- 1-Students go to a theater and write an assessment of the show.
- 2-Go to the beach and write a poem or a creative writing about their living.
- 3-Go to the art gallery and discuss or write their thoughts about why their favorite pictures are better than others as a couple or as a group.
- 4-Go to the state library and benefit from resources to do homework.
- 5-Go to a university and attend a course of interest (guided by an instructor).

6-Work on a topic of war, peace, migration, racism or religion and go to a Christian church or a Muslim mosque to learn about similarities and differences.

It was determined that there were very few studies on the Place Based Education approach when literature review is carried out (Mentiş Taş and Özkara, 2015; Köşker, 2012; Köşker and Karabağ, 2012; Yıldız and Mentiş Taş, 2015; Yıldız Yılmaz and Tabaru, 2017). Determining behaviors of social studied teachers related to Place Based Education which could be applied to the courses such as Language arts, math, science, and to fill an important gap in Place Based Education is the most important side of the research.

In this research, it was aimed to study the validity and reliability of the "Teacher Attitude Scale Related to the Place Based Educational Approach Applied in the Social Studies" which was developed to determine the attitudes of the social studies teachers to the place based education approach.

## METHOD

### Research Model

The working team of the research, is formed of totally 228 teachers who are situated in the Konya city center and giving social studies courses and determined through the simple random sampling method.

**Table 1.** Study Group

Gender	F	Branch	f
Female	124	Class teachers	124
Male	104	Social studies teachers	104
<b>Total</b>	<b>228</b>	<b>Total</b>	<b>228</b>
Educational Background	F	Service Years	f
Associate	9	1-5 year	88
Undergraduate	181	6-10 year	56
Master	37	11-15 year	35
Doctorate	1	16-20 year	21
		21 year and over	28
<b>Total</b>	<b>228</b>	<b>Total</b>	<b>228</b>
Receive in-service training			f
Yes			39
No			189
<b>Total</b>			<b>228</b>

According to Table 1, 124 participants in the study group were female, 104 were male and 124 were class, and 104 were social studies teachers. 9 of the participants are associate, 181 are undergraduate, 37 are masters

and 1 is a doctorate degree. 88 of the participants have 1-5 years of experience, 56 of them have 6-10 years of experience, 35 of them have 11-15 years of experience, 21 of them have 16-20 years of experience. 28 of them have an experience of 21 years and over. 39 of the participants received in-service training in this regard, 189 of them did not receive.

### Data Collection Tool

The first part of the scale, which is developed as a data collection tool, consists of the directive. The second part consists of personal information and the third part consists of expressions and response options. The directive includes information about the purpose of the scale, the total number of expressions, the format of the response, and the Place Based training approach. In the Personal Information form, information such as gender, branch, education status, occupational experience (year), and in-service training on the Place Based education approach are included. In the section on phrases and responses, there are statements that will enable teachers who teach social science classes to determine their attitudes towards the Place Based education approach and the corresponding response options. Before the scale was created, the literature was searched and a item pool consisting of 30 items was created within the boundaries of the subject.

### Analysis of Data

Within the scope of validity and reliability studies of "Teacher Attitude Scale Related to Place Based Education Approach Applied in Social Studies Course".Expert opinion were taken from 5 lecturers in Niğde Ömer Halisdemir University, Ahi Evran University, Nevşehir University, Adıyaman University Faculty of Education. 4 of the experts, are subject area experts and 1 is a measurement and evaluation specialist. In the view of expert opinion, it has been found that some items express two conditions. For this reason, these items were divided into two and the number of items have been 45.

Explanatory Factor Analysis (AFA) was used to provide evidence of the validity of the scale's construction. In order to test the reliability, the item-total correlation (item discriminant values) and the Cronbach alpha internal consistency coefficient, which measure the coherence of the items to each other and the test, are calculated.

### FINDINGS

In this section, findings obtained about the validity and reliability of "Teacher Attitude Scale Related to Place Based Educational Approach in Social Studies Lesson" developed within the scope of the research are presented.

The item-total correlations were examined before revealing the factor structure of the scale. And negative correlation items such as 9,10,18,22,23,32, and 39 were not included in the analysis. The Explicit Factor Analysis was conducted on 38 items to reveal the factor structure of the scale.

AFA was used to provide evidence of the validity of the structure of the scale. The purpose of this study was to investigate the factor structure of the Teacher Attitude Scale related to the Place Based Educational Approach applied in the Social Studies lesson. In AFA, Basic Component Analysis was used as a factorization technique. Before the interpretation of findings obtained as a result of the Principal Component Analysis the results of the Kaiser-Meyer-Olkin (KMO) Test and the Barlett Test were taken into consideration and whether the sample size was adequate and whether the normality assumption was met. The KMO value is a measure of the suitability of the data structure for factor analysis in terms of sample size. The KMO value is interpreted as follows: "If the sample size is between 0.50-0.60, the size is poor [bad]" "between 0.60-0.70 weak", "between 0.70-0.80 Medium", Between 0.80-0.90 good", "Excellent if it is over 0.90" (Leech, Barrett and Morgan, 2005, act: Çokluk, Şekercioğlu and Büyüköztürk, 2010). The findings are presented in Table 2.

**Table 2.** KMO ve Barlett Test

KMO Test		.888
Barlett Test	Ki-kare ( $\chi^2$ )	6551.915
	sd	703
	P	.000

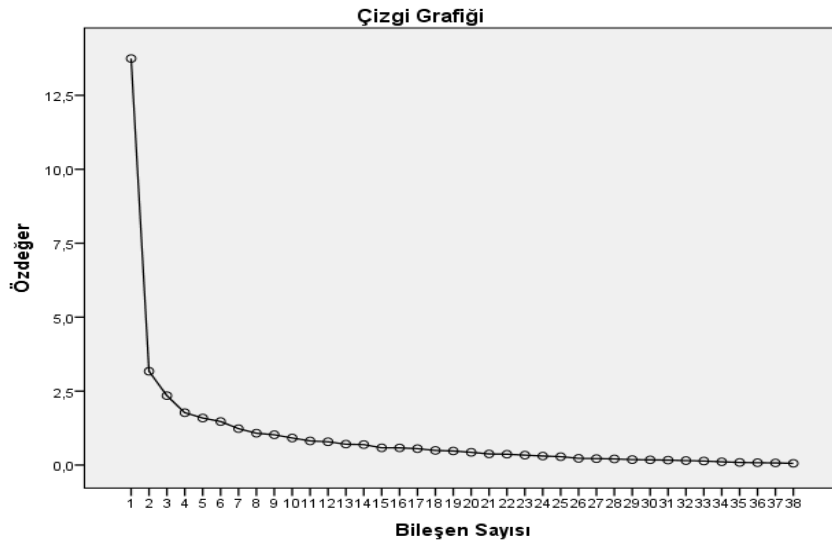
As a result of the factor analysis, the KMO value was 0.888. The value close to 1 indicates that the data structure is perfectly suitable for factor analysis in terms of sample size. Moreover, according to Barlett's sphericity test result, the x-square ( $\chi^2$ ) value was found to be 0.01 level significant ( $\chi^2 = 6551.915$ ,  $p < .01$ ). These findings indicate that the data come from the highly variable normal distribution (Çokluk et al., 2010). According to these findings, it can be said that the items in the scale are suitable for factor analysis in terms of the feature to be measured.

**Table 3.** Findings Related to Factors as a Result of Basic Component Analysis

Factors	Eigenvalue	Percentages of Variance	Percentages of the Total Variance
1	13,745	36,170	36,170
2	3,171	8,344	44,514
3	2,346	6,173	50,687
4	1,770	4,657	55,344
5	1,590	4,185	59,530
6	1,471	3,871	63,400
7	1,230	3,237	66,637
8	1,076	2,832	69,469
9	1,025	2,696	72,165

When Table 3, which shows the percentages of variance pertaining to the factors included in the scale is evaluated, there are nine factors with an eigenvalue greater than 1.00. The first factor accounts for 36.170% of the total variance, the second factor accounts for 8.344% of the total variance, the third factor accounts for 6.173% of the total variance, and the fourth factor accounts for 4.657% of the total variance. After the fourth

factor, the contribution of other factors to the total variance decreases. This is also seen in the line chart showing the eigenvalue components (Figure 1).



**Figure 1.** Eigenvalues Component Line Chart

The varimax (maximum variability) method has been used as the perpendicular rotation method to determine to which dimension the material is better positioned. The items with a factor load of at least 0.32 were selected for the original scale (Tabachnick and Fidel, 2001). Ten items with high load values in more than one factor were removed from the scale.

The factor load values obtained for the AFA results are given in Table 4.

**Table 4.** Factor Load Values Related to the items

Item Numbers	Factors Loads		
	1	2	3
S35	,763		
S38	,756		
S37	,745		
S31	,726		
S30	,712		
S28	,677	,417	
S36	,640	,436	
S25	,615	,421	
S40	,612	,430	
S45	,610	,424	
S13	,608		
S44	,590	,414	
S21	,580		
S2		,827	
S7		,812	
S6		,782	
S1		,759	
S8		,755	
S5		,734	
S3		,696	
S4		,679	
S11*			,655
S12*			,651
S15*			,627
S43*			,625
S14*			,618
S42*			,599
S19*			,534

\* Inverse scored items

When Table 4 is examined, it is seen that materials are gathered under three factors sufficiently separated from each other. The items in the first dimension were named as "Place Based Education Benefits" because they are the items expressing the positive aspects of the extracurricular activities. Since the items in the second dimension are the items that indicate the necessity of Place Based Education, the name "Necessity of Place Based Education" was given to this dimension. Because the items in the third dimension are the items expressing the difficulties of the non-class activities, the name "Challenges of Place Based Education" was given to this dimension.

As a result of the trial application, an attitude scale consisting of 28 items and three sub-dimensions was obtained. 21 of the items on the attitude scale are positive and 7 are negative. Factor load values of the items in the first dimension range between 0.580-0.763, factor load values of the items in the second dimension

range between 0.679-0.827, and factor loadings of the items in the third dimension range between 0.534-0.655. The first dimension describes 36,620% of the variance, the second 10,660% and the third dimension 6,246%. The three dimensions explains for 53.706% of the total variance.

Item-total correlations have been calculated as evidence for substance validity. The positive and high item-total correlation indicates that the materials exemplify similar behaviors and the internal consistency is high. The minus sign of the item-total correlation is zero or close to zero, indicating that the substance is insufficient to measure the attitude to be measured by other items. (Büyüköztürk, 2009; Tezbaşaran, 2008). Because of Item-total correlations of 0.30 and higher were included to the test because they distinguished individuals well. If items between 0.20-0.30 are considered compulsory, they are not expected to be tested or corrected. Items lower than 0.20 are not expected to be included into the test (Büyüköztürk, 2009; Tavşancıl, 2010).

**Table 5.** Item-Total Correlations of the Items in the Scale

Item Numbers	Item-Total Correlations		
	Benefits	Necessity	Challenges
S13	,556		
S21	,558		
S25	,701		
S28	,762		
S30	,642		
S31	,633		
S35	,760		
S36	,704		
S37	,730		
S38	,751		
S40	,693		
S44	,659		
S45	,679		
S1		,736	
S2		,769	
S3		,707	
S4		,679	
S5		,708	
S6		,771	
S7		,772	
S8		,729	
S19			,333
S11			,513
S12			,526
S14			,565
S15			,637
S42			,416
S43			,429



The item-total correlations (item discriminant values) describing the relationship between the scores from the scale items and the total score of the scale have values between 0.556 and 0.648 in the first dimension. Item-total correlations have values between 0.679 and 0.772 in the second dimension, item-total correlations have values between 0.333 and 0.637 in the third dimension. All of these calculated item-total correlation values are significant at 0.01 level. These results can be interpreted as the fact that the validity of the items in the scale is sufficient, they distinguish the teachers in terms of their attitudes and are the items to measure the same behaviors.

The Cronbach Alfa reliability coefficient was calculated to determine the reliability of the "Teacher Attitude Scale on the Place Based Educational Approach in Social Studies Lesson". As a result of the reliability analysis, the reliability of the first sub dimension was 0.925, the second sub dimension was 0.919, and the third sub dimension was 0.758. The reliability coefficient for the complete scale was founded 0.910. According to Büyüköztürk (2009), if the reliability coefficient calculated for psychological tests is 0.70 or higher, it is sufficient for the reliability of the test scores. The calculated reliability coefficients show that each sub-dimension and scale have high reliability. Therefore, it reveals that the items measured in a way that is consistent with each other.

## CONCLUSION AND DISCUSSION

This study was carried out to test the validity and reliability of the "Teacher Attitude Scale on Place Based Educational Approach in Social Studies". As a result of the statistical analysis, "Teacher Attitude Scale Related to Place Based Educational Approach in Social Studies Course" was accepted as valid and reliable.

The scale consists of 28 items and 3 sub-dimensions. considering the items, the sub-dimensions are named as follows:

- 1- Benefits of Place Based Training (13 items)
- 2- Necessity of Place Based Training (8 items)
- 3- Challenges of Place Based Training (7 items)

## RECOMMENDATIONS

In the direction of these results the following suggestions have been made that can guide future studies and shed light on the researchers:

- 1- Developed "Teacher Attitude Scale on Place Based Educational Approach in Social Studies Course" can be used as data collection tool for the teachers who provide social studies course.
- 2- The validity and reliability study of scale was limited to the schools in Konya province center. It can be applied in different places and the results can be evaluated by comparing.

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