



A Study on Developing Special Teaching Methods Attitude Scale for Pre-service Music Teachers

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Abstract

The objective of the current study is to develop an attitude scale for pre-service music teachers' special teaching methods course. The data of the research was obtained in the spring semester of the 2017-2018 academic year. The study group consists of 388 pre-service music teachers who continue their education at eight universities in Turkey. Before proceeding to further analysis, the missing values and outliers were processed. As a result, mean substitution was performed for the missing data in the dataset and 2 participants with outliers were excluded from the study. The suitability of the data for factor analysis was determined by running the Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity. Result of the Kaiser-Meyer-Olkin (KMO) value was found to be 0.97. The overall internal consistency coefficient (Cronbach's Alpha) of the single-factor and 58 item-scale was determined to be 0.98.

Keywords: Pre-service music teacher, Special teaching methods course, Attitude, Scale development, Special teaching methods.

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1. Introduction

Education is a triangle of knowledge, process and target. Teachers are therefore the most significant agents in the educational process. Because teacher is the one who manages and directs the process. In this respect, teachers need to be equipped with knowledge and skills required for both the teaching profession and their fields to run the process successfully. Instead of preparing teaching competency areas for each field individually, [Ministry of National Education General Directorate of Teacher Training and Education \(2017\)](#) sets forth 3 fields of teaching competency, namely, “vocational knowledge”(field knowledge, field training, regulation knowledge), “vocational skill” (planning education and instruction, creating learning environments, managing learning and teaching process) and “attitude and values” (national, moral and universal values, approach to student, communication and cooperation, personal and vocational development)

As it does in every discipline, it is of vital importance that pre-service music teachers must be equipped with certain competencies in the educational process. In this sense, it would be quite useful to touch upon the music education system in our country. Music education program is offered by universities’ music education departments at the education faculties. Students who pass university entrance exam are entitled to take a special talent examination performed in line with the certain criteria applied by universities’ departments, thereby being eligible for a candidate teacher. In music education departments, students are required to undertake following courses during their four-year program: individual courses (voice training, individual instrument training and piano playing), collective music education courses (chorus, orchestration, school instruments, music history) and courses on teaching profession. Amongst the courses mentioned, special teaching methods course provides a strong bond between what is learned and what is to be taught. Special teaching methods course duration is four hours per week in the second term of the 3th grade and the first term of the senior class. The course includes 2 hours theoretical and 2 hours practical sessions. According to the Council of Higher Education (CoHE), the special teaching methods I course content involves fundamental concepts of the field, the integration of fundamental concepts into field education, the regulations pertaining to the Constitution and Minister of Education, objectives, materials, documents and analysis of documents. When it comes to the content of the special teaching methods course II, it encompasses following subjects: the concepts of music education and training, activity and lesson planning (individual, collective, daily, monthly, yearly) for every phase and process of the education, evaluation of music education activities, assessment and evaluation.

In terms of the course content, special teaching methods course plays a crucial role in raising a qualified music teacher. Pre-service music teachers’ interests, enthusiasm, willingness to attend the course and working eagerly, in other words, their attitudes towards the course will influence their academic success. At this point, it would be useful to explain the concept of the attitude, one of the affective peculiarities influencing academic success, to understand the issue more clearly. [Kagıtcıbası \(2006\)](#) argues that “an attitude is attributed to an individual and it is a tendency that arranges in an orderly manner that individual’s thoughts, feelings, and behaviors in relation with a psychological object (as cited in: [Kagıtcıbası \(2006\)](#)). The concept of attitude is a core topic in social psychology. However, it was found that students’ attitudes towards dynamics of learning in education increases their academic achievements ([Pehlivan, 1994](#)). The relationship between individual-object- stimulus and attitude are of such importance for vocational education since students’ attitudes towards their departments will reveal what kind of teaching behaviors they will adopt in the future. From this perspective, positive attitudes of pre-service teachers towards education are an important detail in terms of their teaching quality in the future ([Ustüner, 2006](#)). To put it differently, “Knowing attitudes towards a specific profession and its activities will certainly contribute to predict the success and satisfaction attained in the profession ([Erkuş et al., 2000](#)).

Therefore, it is of essential importance to measure attitudes at universities delivering vocational education and accordingly to apply some adjustments in terms of quality of education and efficiency of the process. Numerous attitude scales oriented at various dynamics in education have been developed both in our country and the world. “The Attitude Scale towards Music Theory Course” developed by [Canakay \(2006\)](#) consists of 37 items. Cronbach’s alpha internal coefficients of the scale were calculated as .96. “Piano Course Attitude Scale” developed by [Tufan and Güdek \(2008\)](#) consists of 30 items and Cronbach’s alpha internal coefficients of the scale was calculated as .97. The Scale developed by [Ozevin \(2010\)](#) towards “The Special Teaching Methods Course” in the music education undergraduate program includes 25 items. Cronbach’s coefficients alpha for complete scale was .95. [Tyson \(2006\)](#) RAP scale, measuring Rap-music attitude is a 24-item instrument. The 14 Likert-type attitude scale developed by [Shaw and Tomcala \(1976\)](#) aims to measure primary school students’ attitudes towards music. The objective of the present study is therefore to develop an attitude scale to measure pre-service music teachers’ attitudes towards special teaching methods course.

2. Methodology

Since the present study attempts to develop an Attitude Scale towards Special Teaching Methods Course, it is a descriptive research. The descriptive surveys intend “to explain the interaction among situations by considering their relationships between previous events and conditions” ([Kaptan, 1998](#)).

2.1. Study Group

The research consists of 388 pre-service music teachers enrolled in “Special Teaching Methods” course at the department of music education. The data of the research was obtained in the spring semester of the 2017-2018 academic year. The distribution of the study group is as follows:

30 (7.7%) pre-service music teachers from Bolu Abant İzzet Baysal University, 60(15.5%) pre-service music teachers from Van Yüzüncü Yıl University, 40 (10.3%) pre-service music teachers from Muğla Sıtkı Koçman University, 52 (13.4%) pre-service music teachers from Dokuz Eylül University, 60 (15.5%) pre-service music teachers from Pamukkale University, 53 (13.7%) pre-service music teachers from Balıkesir University, 51 (13.1%) pre-service music teachers from Trakya University and 42 (10.8%) pre-service music teachers from Adnan Menderes University.

2.2. Selecting the Instrument for Data Collection

Before developing attitude scale items for measuring pre-service music teachers' attitudes towards special teaching methods course, 39 pre-service music teachers enrolled in "Special Teaching Methods I" course at Adnan Menderes University, Faculty of Education, Department of Fine Arts and Music Education Program were asked to write a composition entitled "Opinions and Thoughts on Special Teaching Methods Course". After reviewing participants' statements in the compositions and previously developed attitude scales (Berberoğlu, 1990; Kan and Akbaş, 2005; Arslan, 2006; Canakay, 2006; Karaca, 2006; Tufan and Güdek, 2008; Turanlı *et al.*, 2008; Demir and Akengin, 2010; Ozevin, 2010; Turan and Demirel, 2010; Seker, 2011; Arslan, 2012) an initial item pool of 89 statements was formed. 2 experts in music education, 2 experts in educational sciences, 1 expert in Turkish Language and Education and 1 psychologist were consulted to review the item pool. Based on the experts' feedbacks, items was rewritten by using more clear and simple language, and accordingly the scale was reduced to 76 items in total, including 19 negative items in the scale. The measurement tool was prepared by using 5 point Likert-type. Correspondingly, respondents' answers were labelled as follows: "Strongly Agree", "Agree", "Agree Slightly", "Disagree" and "Strongly Disagree".

2.3. Data Collection

Data was obtained from eight universities. Permission was obtained from the universities in advance. Prior to the phase of the data collection, university instructors in the relevant field were informed about the process.

2.4. Data Analysis

In this study, an Attitude Scale for Special Teaching Methods Course was developed and then statistical analyses were performed. Before proceeding to further analysis, the missing values were examined. As a result, mean substitution was performed for the missing data in the dataset. Then outliers were analyzed and 2 participants with outliers were excluded from the study. Statistical analyses were performed using SPSS Version 24. The tables presented in the study were taken form SPSS program. Lastly, the suitability of the sample size and normality assumptions were tested. Explanatory Factor Analysis (EFA) was performed to determine construct validity of the scale. Cronbach's Alpha reliability coefficient was calculated to figure out the reliability of the scale.

3. Findings

3.1. The Suitability of Data for Factor Analysis

Before running analysis on developing an Attitude Scale for Special Teaching Methods Course, the suitability of the data for factor analysis was determined by running the Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity. Results of the Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity are shown in Table 1.

Table-1. KMO and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin		0.970
Bartlett's Test of Sphericity	Chi-Square	23076.326
	sd	2850
	p	0.000

As can be seen in Table 1, the Kaiser-Meyer-Olkin (KMO) value was found to be 0.97. The result of the Bartlett's Test of Sphericity was found statistically significant. Thus, we could contend that the sample size is appropriate for factor analysis.

3.2. Determining the Number of Factors

To determine the number of factors, the contribution of each variable to total variance and scree plot were analyzed. Scree plot for the analysis shown in Figure 1.

Figure 1 Scree plot for the analysis shown in.

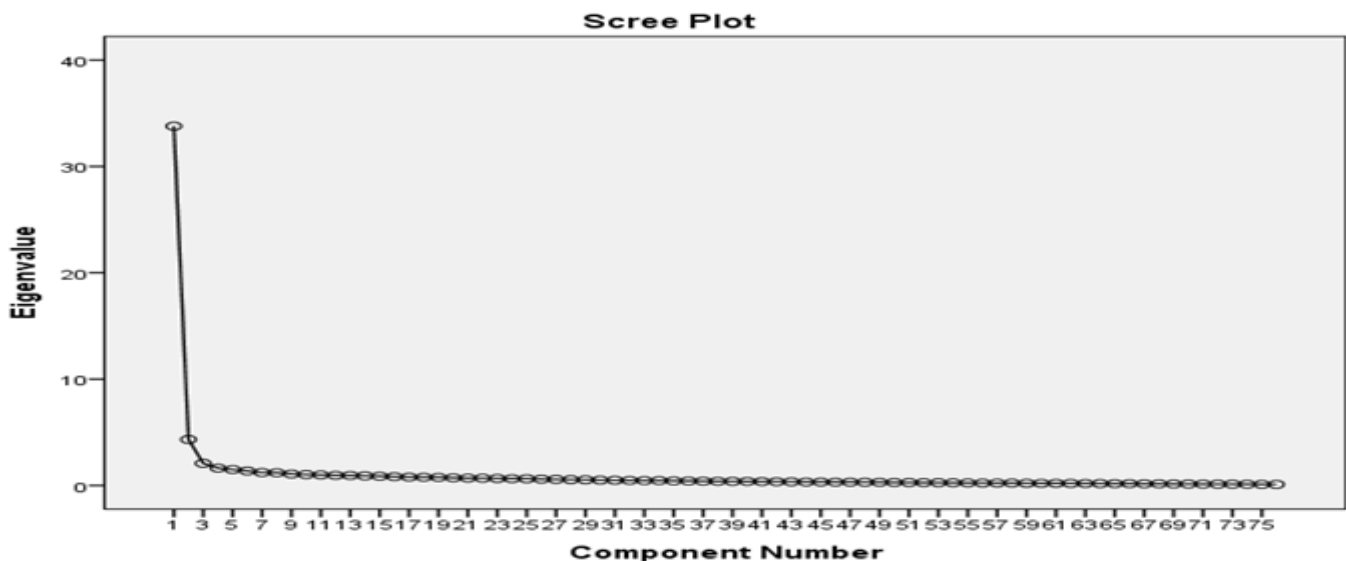


Figure-1. Scree plot

After evaluating the contribution of each variable to total variance and scree plot, it was determined that the scale consisted of a single factor. As an extraction method, Principal Components Analysis was performed to determine the factor design of the scale.

3.3. Findings Regarding the Construct Validity of the Scale

Explanatory Factor Analysis (EFA) was conducted to determine construct validity of the Attitude Scale for Special Teaching Methods Course. Accordingly, 18 items (numbered 3, 5, 6, 11, 13, 20, 25, 27, 30, 32, 37, 47, 49, 53, 54, 62, 65, 66) whose loadings are less than 0.40 for every factor were excluded from the analysis and the analyses on the remaining 58 items were rerun.

As a result of the analyses performed, a table of communalities indicating the percentage of explained common variance for each item is presented in Table 2.

Table-2. Communalities

Item Number	Common Variance	Item Number	Common Variance	Item Number	Common Variance	Item Number	Common Variance
t1	,546	t22	,505	t42	,490	t61	,515
t2	,355	t23	,465	t43	,488	t63	,480
t4	,583	t24	,374	t44	,407	t64	,368
t7	,463	t26	,535	t45	,468	t67	,395
t8	,452	t28	,499	t46	,574	t68	,397
t9	,354	t29	,512	t48	,547	t69	,363
t10	,413	t31	,483	t50	,383	t70	,503
t12	,396	t33	,619	t51	,431	t71	,580
t14	,532	t34	,602	t52	,372	t72	,634
t15	,611	t35	,562	t55	,348	t73	,541
t16	,561	t36	,570	t56	,604	t74	,600
t17	,511	t38	,605	t57	,503	t75	,433
t18	,444	t39	,641	t58	,554	t76	,479
t19	,390	t40	,569	t59	,634		
t21	,523	t41	,606	t60	,655		

According to Table 2, common factor variance of the factors on each variable was found to range from 0.348 to 0.655. As a result of the analysis performed, all potential factors and eigenvalues for the number of factors identified and the percentages of variance explained are tabulated in Table 3.

Table-3. Eigenvalues Associated With Factors and Percentages of Variance Explained

Component	Values for All Potential Factors			Values for the Number of Factors Determined		
	Eigenvalue	Percentages of Variance Explained	Percentage of Total Variance Explained	Eigenvalue	Percentages of Variance Explained	Percentage of Total Variance Explained
1	29,024	50,041	50,041	29,024	50,041	50,041
2	2,512	4,331	54,372			
3	1,595	2,749	57,122			
4	1,407	2,425	59,547			
5	1,169	2,015	61,562			
6	1,109	1,912	63,474			
7	1,019	1,756	65,230			
8	,998	1,721	66,951			
9	,866	1,494	68,445			
10	,819	1,411	69,856			
11	,787	1,357	71,213			
12	,746	1,286	72,499			
13	,734	1,266	73,765			
14	,684	1,180	74,945			
15	,651	1,122	76,066			
16	,642	1,106	77,173			
17	,616	1,062	78,235			
18	,590	1,017	79,252			
19	,570	,983	80,235			
20	,547	,944	81,179			
21	,530	,913	82,093			
22	,507	,874	82,966			
23	,491	,847	83,813			
24	,479	,826	84,639			
25	,471	,813	85,452			
26	,424	,731	86,182			
27	,410	,707	86,889			
28	,401	,691	87,581			
29	,390	,673	88,254			
30	,363	,627	88,880			
31	,360	,621	89,501			
32	,350	,604	90,105			
33	,343	,591	90,696			
34	,321	,554	91,250			

35	,307	,529	91,779			
36	,306	,527	92,306			
37	,297	,511	92,817			
38	,291	,501	93,318			
39	,279	,481	93,799			
40	,270	,466	94,265			
41	,254	,439	94,703			
42	,246	,425	95,128			
43	,244	,420	95,548			
44	,221	,381	95,928			
45	,219	,378	96,307			
46	,219	,377	96,684			
47	,209	,359	97,043			
48	,199	,343	97,387			
49	,194	,335	97,721			
50	,179	,308	98,029			
51	,170	,293	98,322			
52	,161	,278	98,600			
53	,156	,268	98,869			
54	,145	,251	99,119			
55	,137	,236	99,355			
56	,132	,228	99,583			
57	,125	,216	99,799			
58	,116	,201	100,000			

As can be seen in Table 3, eigenvalue of the first factor is 29.024 and the contribution of the factor to the total variance is 50.041%. This means that the items in the scale explain 50% of the variance in the attitude scale towards special teaching methods course.

Factor loadings regarding the factor design of the scale are set forth in Table 4

Table-4. Factor Design of the Special Teaching Methods Course Attitude Scale

Item	Factor Loading	Item	Factor Loading	Item	Factor Loading	Item	Factor Loading
t60	,809	t40	,754	t57	,709	t44	,638
t39	,800	t35	,750	t28	,706	t68	,630
t72	,797	t16	,749	t42	,700	t12	,629
t59	,796	t58	,744	t43	,698	t67	,628
t33	,787	t48	,739	t31	,695	t19	,625
t15	,782	t1	,739	t63	,693	t50	,619
t41	,778	t73	,736	t76	,692	t24	,612
t38	,778	t26	,731	t45	,684	t52	,610
t56	,777	t14	,729	t23	,682	t64	,607
t34	,776	t21	,723	t7	,680	t69	,602
t74	,775	t61	,717	t8	,672	t2	,596
t4	,764	t29	,716	t18	,666	t9	,595
t71	,761	t17	,715	t75	,658	t55	,589
t46	,757	t22	,710	t51	,657		
t36	,755	t70	,710	t10	,643		

Considering the data in Table 4, it is seen that factor loadings for all the items in the scale vary between 0.589-0.809.

3.4. Findings Regarding the Reliability

Cronbach's coefficient alpha, a measure of the internal consistency, and item-total correlation coefficients were used to calculate the reliability of the scores obtained from the scale. Cronbach's alpha internal coefficients of the scale was calculated as 0.983 (58 items) which shows that the reliability of the obtained scores are at the high level (Ozdamar, 2004). Item-total correlation coefficients of the items in the scale are presented in Table 5.

Table-5. Item- Total correlation test

Item	Correlation	Item	Correlation	Item	Correlation	Item	Correlation
t1	,726	t22	,697	t42	,685	t61	,705
t2	,582	t23	,668	t43	,685	t63	,681
t4	,752	t24	,606	t44	,633	t64	,600
t7	,673	t26	,718	t45	,670	t67	,623
t8	,658	t28	,693	t46	,746	t68	,616
t9	,588	t29	,702	t48	,727	t69	,597
t10	,628	t31	,681	t50	,603	t70	,696
t12	,621	t33	,774	t51	,649	t71	,747
t14	,715	t34	,760	t52	,597	t72	,785
t15	,769	t35	,734	t55	,574	t73	,719
t16	,733	t36	,741	t56	,762	t74	,762
t17	,699	t38	,764	t57	,694	t75	,641
t18	,653	t39	,786	t58	,728	t76	,685
t19	,608	t40	,740	t59	,786		
t21	,710	t41	,764	t60	,796		

Further analysis of the [Table 5](#) shows that item-total correlation coefficients of the items in the scale range between 0.574-0.796.

Overall findings demonstrated that this scale had high validity and reliability scores and that it may be used as a valid and reliable instrument for further studies. Furthermore, the scale can be administrated to different groups, and after then additional validity and reliability evidences can be collected.

4. Result

In the present study, a valid and reliable measurement tool was developed to identify pre-service music teachers' attitudes towards special teaching methods course. 39 pre-service music teachers enrolled in "Special Teaching Methods Course I" at Adnan Menderes University, Faculty of Education, Department of Fine Arts and Music Education Program during the spring semester of the 2017-2018 academic year were asked to write a composition entitled "Opinions and Thoughts on Special Teaching Methods Course". After students' statements in the compositions as well as previously developed attitude scales in the literature were taken into account, 89-item pool was formed. 2 experts in music education, 2 experts in educational sciences, 1 expert in Turkish Language and Education and 1 psychologist were consulted to review the item pool. Experts submitted their views to the researcher as regards to whether each item measures one behavior, written in a clear and open way and measures attitude components appropriately. Based on the expert opinions, necessary additions, omissions and revisions were made and scale pool was reduced to 76 items. The final measurement tool was administrated to 388 students (3th grade and senior class) enrolled in "Special Teaching Methods Course" at the department of music education of eight universities (Bolu Abant İzzet Baysal University, Van Yüzüncü Yıl University, Muğla Sıtkı Koçman University, Dokuz Eylül University, Pamukkale University, Balıkesir University, Trakya University and Adnan Menderes University).

Before proceeding to further analysis, the missing values were examined. As a result, mean substitution was performed for the missing data in the dataset. Then outliers were analyzed and 2 participants with outliers were excluded from the study. Lastly, the suitability of the sample size and normality assumptions were tested. Before running analysis on developing an Attitude Scale for Special Teaching Methods Course, the suitability of the data for factor analysis was determined by running the Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity. The Kaiser-Meyer-Olkin (KMO) value was found to be 0.97. The result of the Bartlett's Test of Sphericity was statistically significant.

As well as determining the number of factors in the scale, the contribution of each component to total variance was analyzed through scree plot. After further analysis of the scree plot, it was determined that the scale consisted of a single factor. As an extraction method, Principal Components Analysis was performed to determine the factor design of the scale.

As a result of the Explanatory Factor Analysis (EFA) performed to figure out construct validity of the scale, 18 items (numbered 3, 5, 6, 11, 13, 20, 25, 27, 30, 32, 37, 47, 49, 53, 54, 62, 65, 66) whose loadings are less than 0.40 for every factor were excluded from the analysis and the analyses were repeated for the remaining 58 items. Accordingly, eigenvalue of the first factor is 29.024 and the contribution of the factor to the total variance is 50.041%.

Cronbach's coefficient alpha, a measure of the internal consistency, and item-total correlation coefficients were used to calculate the reliability of the scale. Cronbach's alpha internal coefficients of the scale were calculated as 0.983. It was found that item-total correlation coefficients regarding the scale items varied between 0.57 and 0.79. The results show that the Pre-service Music Teachers' 58-item Attitude Scale towards Special Teaching Methods Course meets the validity and reliability criteria, and consequently can be utilized as a measurement scale for further studies.

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