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The Effect of Kodaly method on the musical knowledge and skills of preservice teachers

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Abstract. The aim of this study in which quasi-experimental design was used to investigate the effect of Kodaly method on the musical knowledge and skills of preservice classroom teachers. It was carried out with 97 classroom teacher candidates including 54 in the experimental group and 43 in the control group. ''The Musical Hearing Test'' (Gürgen, 2007) and "The Basic Music Knowledge Test" developed by the first author was used. Music lesson plans which were prepared based on Kodaly method were used for eight weeks. As a result of the study, statistically significant difference was found in favor of the experimental group for the melodic success sub-dimension of the Musical Hearing Test. When the changes within the groups were examined, it was seen the melodic and musical pitch success scores of the experimental group increased significantly. When the results of "Basic Music Knowledge Test" were examined, statistically significant difference was observed in favor of the experimental group in terms of all dimensions.

Keywords: Music education, Kodaly method, preservice teachers, music teaching methods

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INTRODUCTION

Music is an art of sound in time that expresses ideas and emotions in significant forms through the elements of rhythm, melody, harmony, and color and is contained in all phases of life. The planned growth and development of these emotions is possible through music education. In the simplest sense, music education can be defined as the process of development of an individual's musical behavior by feeding it on the cultural background coming from family and society. Planned music education is an educational process that starts from pre-school period and lasts until the higher education years. In this process, general music education has an important place for individuals to make positive behavioral changes in their musical development and for the formation of their musical identities. Studies emphasizes that music education plays a significant role at pre-school and primary school periods (Ali, 2017; Nart, 2016; See and Ibbotson, 2018; Uçan, Yıldız and Bayraktar, 1999; Yavuzer, 2012). "Music education given at pre-school period is a very effective way for children to gain concepts and values such as spiritual, cultural, social and intelligence development." (Şen, 2006, p. 338). Yener (2011) argued that the more frequently and earlier the music enters the world of children, the more sensitive, responsive and conscious adults they will be in later life.

In general music education, besides the qualified music education of the students, classroom teachers who will teach music to them should be trained as competent and equipped in music education. Music courses, which have an important place in both musical and emotional development of children, should be included in the teacher training programs for future classroom teachers and be given importance to such training (Mete, 2019). The Council of Higher Education issued a special field competencies document for classroom teaching which includes an item about the competency of "Art and Aesthetics" that contains a sub competency of "having general information about fine arts". Based on this, classroom teachers are expected to be familiar with fine arts including visual arts and music and to employ quality sample of them in various activities. For this reason, it is important to improve the musical knowledge and skills of classroom teachers who will teach music using their knowledge on music education they received in the teacher training programs.

The curriculum of classroom teaching department has been modified several times. It was last modified by the Council of Higher Education on 16 May 2018 and began to be implemented from the academic year of 2018-2019. Within this program the course of music is delivered to pre-service teachers at the first semester of the fourth grade (at the seventh semester). Table 1 shows the class hours of the music courses within the teacher training programs for classroom teachers per year. This study focuses on the classroom teaching program which was implemented between the academic year of 2006-2007 and the academic year of 2017-2018.

Table 1. Hours of the music courses within the teacher training programs for classroom teachers

Year	Course Name	Semester/Grade	Course Hour*
1998-1999	Music I	III. semester – 2. grade 1. term	2 hour
	Music II	IV. semester – 2. grade 2. term	2 hour
	Music Teaching	V. semester – 3. grade 1. term	2 hour
2006-2007	Music	III. semester – 2. grade 1. term	3 hour
	Music Teaching	IV. semester – 2. grade 2. term	3 hour
2018-2019	Music Teaching	VII. semester 4. Grade 1. term	3 hour

*1 course hour is 45 minutes.

The content of the music course included in the teacher training program (2007) is given as follows:

> "Basic components of music, basic music knowledge; musical note knowledge, the concept of interval in music, the concept of rhythm in music, creation of a song repertoire; the types and forms of music in Turkey and the world; transition from traditional music to contemporary music, teaching musical instruments, collective playing and singing, the role of music in education, musical hearing in improving creativity" (p. 32).

Uçan (2005) states that music education has the following contents: "sound training, hearing training, instrument training, musical movement and rhythm training, training on musical knowledge, creativity training, appreciation training, musical personality training, musical sensitivity training, musical communication and interaction training, musical use and training on the use of music." Of them sound training is defined as follows: "It is an interdisciplinary special field education which includes the steps of speaking, singing and singing training in which individuals are taught the behaviors necessary to use their voice correctly, effectively and beautifully in speaking and/or singing." (Töreyin, 2015, p. 82). Training on the use of musical instruments is defined as follows: "this training is basically designed to improve the love of music among students and to increase their knowledge of music by making them play an instrument with a certain level of competency as well as to improve their ability to play the instrument." (Dündar, 2001). Uçan et. al. (1999) point out that training on the use of instruments is delivered mostly simultaneously with song training at primary school level. The training on musical hearing is defined as follows: "it is consisted of methodical studies on the development of the perception, identification, discrimination and analysis of sounds." (Say, 2002, p. 270). Concerning training on musical knowledge teaching focuses on the basic elements of music, music alphabet (basic knowledge on musical note, rhythm, measure, terms and symbols, etc.) and components such as music culture. For classroom teachers to be able to gain competence in these dimensions and in the basic components of music specified in the course content in teacher training programs, including basic musical knowledge, musical note knowledge, rhythm concept, collective playing, collective singing and so on those methods and techniques to be used in the course should be well planned.

"The teaching methods used in music education showed great development especially in the late 19th and 20th centuries, and have continued to improve today." (Türkmen, 2019, p. 76). Although the tools these methods employ and the elements these methods focus on differ from each other, the common feature of these methods is that they are student-centered in line with

the needs of the age. The other common points of these programs are as follows: these methods have a balanced content which consists of the dimensions of the music education given above and adopt an understanding of producing individuals who learn music doing and experiencing. Gürgen (2016) gives the following points as the common elements of these methods: making students gain the desired behaviors by making the elements of music play without emphasizing these musical elements, aiming at producing individuals who like music, besides improving musical skills, developing mental skills such as attention, memory, imagination, self-confidence, making active participation in music, and improving social communication skills and creativity.

The teacher guides for the primary school music course textbooks published by the Ministry of National Education in 2017 stated that classroom teachers or music teachers should employ the methods of Dalcroze, Kodaly and Orff in the courses of music which are designed based on the constructivist and multiple intelligence approaches. The Dalcroze teaching method was developed by Swiss music educator Emile Jaques-Dalcroze who was born in Vienna and began to be introduced from 1906 (Türkmen and Pancar, 2018). "Active listening and physical response are the basis of this method." (Kürklü, 2010). Dündar (2003) citing Gehrkens and Randel states that the method is also called Dalcroze eurythmics method which refered to "the development of rhythmic understanding" and that Eurythmics is the expression of music through movements. Türkmen and Pancar (2018) stated that although the Dalcroze method is the oldest method in music teaching, there is limited number of study on this method.

The foundations of Orff Schulwerk were established in a music school developed by German composer and music educator Carl Orff and Dorothea Günther and during the 1920s it was developed by Carl Orff (1895-1982) and his colleague Gunild Keetman. The basic characteristics of this method include the followings: Student-centered, active music making and learning by doing and experiencing music. Melodic percussion instruments and rhythm instruments (Orff instruments) are an important part of this method. 'Orff's approach has been recognized and used in Germany since the 1930s and Orff-based activities was initiated for the first time in Turkey by Muzaffer Arkan from Ankara College of the Turkish Education Association in the 1950s. (Kalyoncu, 2006; Öztürk, 2005). In Turkey the first official institution specifically for the Orff method was established in Istanbul in 2002 in cooperation with the Carl Orff Institute (Salzburg), Carl Orff Foundation (Diessen), Austria Cultural Office and Austrian High School Foundation (for more infomation, see http://www.orffmerkezi.org/). The method became widespread in Turkey through the Anatolian Orff Music Education Project developed piano artists Güher and Süher Pekinel. With this project, education opportunities are offered to teachers who want to improve themselves in abroad. Orff method is the most widely recognized teaching method in Turkey compared to other music teaching methods (see Aycan, 2018; Aydemir, 2018; Kale, 2018). Since this study focuses on the Kodaly method, the method is discussed in more detail below.

The Kodaly Method

See and Ibbotson (2018) state that the Kodaly method was developed by Hungarian educator Zoltan Kodaly his colleagues and pupils as a comprehensive music education system at Hungarian schools. Following his visit to the United Kingdom where he became familiar with the work by Sarah Glover and John Curwen. They add that this method is an approach which aims to teach basic musical skills through voice and body of learners without using other tools and that it depends on teaching, learning and understanding of music through singing songs and musical games. Göğüş (2009) argues that the goals, philosophy and principles of the method belong to Kodaly, but the method has no peculiar teaching tools which are specifically developed for it. Instead, these tools are taken from different methods and approaches. As stated earlier the Kodaly method is student-centered and adopts the approach on developmental process of children. This method emphasizes that the most basic and natural instrument of human is his own voice. It employs singing songs in each activity. Therefore, through this method, it is aimed to produce individuals with the music literacy through collective singing and choirs by focusing on voice education. Ear training, sight reading and movement have an important place in music

literacy. Choksy (1981), Kirk (2000), and Kodaly (1974) emphasized the significance of singing songs and improved musical ear. However, they also pointed out that that singing should not be a stand-alone activity and that young children need more action to learn music (Ratcliffe, 2018, p. 1). In this method, a repertoire initially includes folk songs (nursery rhymes, children's songs, lullabies, etc.) and then it gradually increases to the outstanding examples of international art music.

In this study, the Kodaly method was used as a teaching method. The reasons for choosing this specific method are as follows: Its tools are eligible for general music education –for instance, a more concrete perception of sonority with hand signals -; the method emphasizes voice training without an assistance of a music instrument; this method is suitable for collective singing and collective playing instruments and this method performs music teaching based on folk culture. Researches indicates that in-service and pre-service teachers are not familiar with the Kodaly method and therefore, teachers do not employ it in music education (Çelik, 2001; Ercan, 2006). In Turkey an activity entitled I. International Kodaly Training Days was organized by the cooperation of Marmara University Atatürk Education Faculty, Hungary Culture Center and Kodaly Institute (Kecskemet) in 2017 to make this method much more familiar. The activity was again carried out in September 2019. The goals of these activities are to have better understanding about the implementation of the method, the philosophy of practices through training.

Çevik (2011) emphasized the necessity of the music education that the pre-service classroom teachers received in order to educate primary school children in music courses in their future teaching profession. Çevik (2011) also pointed out that it is important that pre-service teachers should gain musical knowledge and skills, the skills to employ the theoretical knowledge they learned and that their training in this subject should be a quality one. The aim of this study is to investigate the effect of the Kodaly method on the musical knowledge and musical hearing skills of preservice classroom teachers who are at the second year of a teacher training program.

METHODS

Research Design

In this study, a semi-experimental design part of the quantitative research methods was used to reveal the effect of the Kodaly method on the musical knowledge and musical hearing skills of preservice classroom teachers. A semi-experimental design is often used when a true experimental design is not feasible (Leedy and Ormrod, 2005) and in such designs the causality between an implementation and the results is revealed. In short, the study was designed as a semi-experimental research which includes control and experiment groups with pre-tests and post-tests which Cohen, Manion and Morrison (2007) consider as one of the most widespread semi-experimental designs employed in educational research.

Participants

The participants of the study are the second-grade pre-service teachers attending a teacher training program at a public university during the academic year of 2015-2016, and they attended the classroom teaching branch. An ethical permission was obtained from the related university before the implementation process was started, and then written consents were obtained from the participants. The participants were chosen from those who were registered to the course of music. Participants were divided into two groups by random sampling method. The number of participants in the experiment group is forty-three and that in the control group is fifty-four.

Data collection tools

Musical hearing test

The Test on Musical Hearing developed by Gürgen (2007) which has been administered to primary school students was administered to the experimental and control groups as a pre-test and a post-test. Gürgen developed this test by examining the goals and target behaviors stated in the Primary School Music Lesson Program issued by the Ministry of National Education. The test consists of four sub-dimensions and thirty-two items. These sub-dimensions and the number of items for per sub-dimensions are given as follows: sonority (8 items), melodic success (9 items), rhythmic success (11 items) and sound success (4 items). The items in the sub-dimension of sonority require the participants to make a distinction between sounds they listen to base on being high pitch or bass. The items in the sub-dimension of melodic success requires the participants to state the melody they listen to in terms of being high or low, to indicate whether the musical sentences are complete and to report the song which the melody is part of. Items contained in the sub-dimension of rhythmic success are about the recognition of a familiar melody using the rhythmic beats or about the changes in melody speed. Concerning the dimension of timbre achievement, the participants listened to the melodies that were played through various instruments. The items within this dimension were about the recognition of different musical instruments. The reliability coefficient of the 32-item test was found to be .78.

Basic musical knowledge test

Basic Musical Knowledge Test was developed by author 1 was administered to the participants before and after the implementation as a pre-test and a post-test. During the development of the test the topics covered in the music courses in the teacher training program for classroom teaching (2007) and the teacher guides for the primary school music courses issued by the Ministry of National Education. Attention was paid to the fact that the items included in the test should cover the subjects taught, they should overlap with the objectives in the lesson plans, and they should be relevant. The 36-item test, which questions basic musical knowledge, was reviewed by three instructors who were experts in music education. Based on the feedback taken from them a total of thirteen items were excluded from the test. More specifically, eight items were omitted due to the fact they were all about the same musical knowledge and five items were deleted because of their irrelevance to the aims of the study. The final version of the test consists of twenty-three items. Basic Musical Knowledge Test was administered to 50 pre-service teachers in a pilot study. The views of these preservice teachers were taken about the intelligibility of the test in terms of its language and expression, the appearance of the test and the difficulty level of the items. This test consists of four sub-dimensions and a total of twenty-three items. These sub-dimensions and the number of items per sub-dimension are given as follows: rhythm and note knowledge (5 items), number of meters (4 items), musical terms and symbols (7 items) and music culture (7 items). The items in the sub-dimension of rhythm and musical note knowledge are about basic musical notes. The items in the sub-dimension of the number of meters are concerned with simple meters and compound meter patterns and matching the musical notes with meters. The items in the sub-dimension of musical terms and symbols are concerned with sign language and musical grammar in musical notes. The items in the sub-dimension of the music culture are about the national and international music types and composers.

Implementation

The study was carried out in the music classroom (see Figure 1). The implementation was carried out by one of the authors during one afternoon per week in the music classroom. Therefore, two sessions per day were performed one of which was to the experimental group and the other one to the control group. The sessions lasted an average of 120 minutes with 15 minutes breaks. First author was trained in using the Kodaly method abroad therefore, first

author collected the data and implemented the courses. She is also the music teacher of the experimental and control groups.

In order to employ the Kodaly method in the courses taught in the experimental group, eight weeks' lesson outlines were developed by the authors using the materials included in the Kodaly method (hand signs, rhythm syllables, folk melodies, rhymes, etc.) (For the details about all course outlines and flow charts see Mete, 2019). The same content (same songs, topics, etc.) for the courses taught in both the experimental and control groups is the same. The selected rhymes, songs and folk songs are chosen from folk melodies as Kodaly emphasizes.

Lesson plans developed using the Kodaly method

In the development of the lesson plans, the sample plans contained in national and international studies were examined. In addition, the description of music courses in the classroom teaching training program (See, CHE, 2007) and the current education program for primary school music courses (MONE, 2012) were taken into consideration. On the other hand, in the development of the course plans course outline templates developed by Özeke (2007) which also follow the Kodaly method and other templates included in the studies by Feucht (1998), Gerling (2003), Sullivan (2014) and Vinnard (2014) were reviewed. Based on all these materials the outlines for the music courses were developed following the principles of the Kodaly method. An example of a weekly lesson plan (3 class hours) used in the implementation process is presented below.

In order to determine the musical levels of the experimental and control groups before the implementation the Test on Musical Hearing developed by Gürgen (2007) was administered to these groups. Following the implementation, it was administered to the participants as a post-test, and the difference between pre-test scores and post-test scores was calculated and analyzed. In addition, the Basic Musical Knowledge Test was administered to the participants in the experiment group as a pre-test before the lessons started. It was also used as a post-test at the end of the process. Then the differences between pre-test scores and post-test scores were analyzed.

Data analysis

In the study, the pre-test and post-test scores of the participants obtained from the Musical Hearing Test and Basic Musical Knowledge Test were analyzed. Before the analyses, the assumption of normality was examined using the Kolmogorov-Smirnov and Shapiro Wilk tests, and it was found that the data were not distributed normally. Therefore, the non-parametric statistical techniques were used in the comparisons. Since non-parametric techniques are used in the statistical analysis of the data, the median and mean rank values are given in addition to the mean and standard deviation values in tables. The Wilcoxon test was used for pre-test and post-test comparisons. The Mann-Whitney U test was employed for the comparison of the experimental and control groups. Comparison of experimental and control groups was performed based on their pre-test scores, post-test scores and difference scores. Difference scores indicate the difference between the scores of the participants taken from the tests in the pre-test and the post-test. The data were analyzed using the SPSS 22.0 and significance levels were set at 0.05 and 0.01.

FINDINGS

In this section, the findings obtained by comparing the pre and post test scores of the participants obtained from the Musical Hearing Test and Basic Musical Knowledge Test administered to the experimental and control group students are discussed.

Findings obtained from the Musical Hearing Test

The findings obtained from the Musical Hearing Test are given below based on its four sub-dimensions, namely sonority, melodic success, rhythmic success and sound success.

1. Comparison of the scores related to the sonority

Table 1. *Comparison of the scores related to the sonority*

			Score			Wilcoxon	
			Pretest	**Posttest**	**Difference**	**Z**	**p**
Group	Control (n=43)	$\bar{X}$	4.74	4.62	-0.12	-0.84	0.403
		SD	0.82	1.11	0.98		
		R	53.09	45.23	41.83		
		M	5.00	5.00	0.00		
	Experimental (n=54)	$\bar{X}$	4.44	4.90	0.46	-2.50*	0.013
		SD	1.04	1.01	1.25		
		R	45.74	52.00	54.71		
		M	5.00	5.00	0.00		
Mann-Whitney U	Z		-1.35	-1.23	-2.36*		
	p		0.177	0.218	0.018		

** p<0.05; $\bar{X}$: Mean; SD: Standart Deviation; R: Mean Rank; M:Median*

When Table 1 is examined, it is seen that the pre-test and post-test scores related to the sonority do not show a statistically significant difference based on the groups (p>0.05). On the other hand, a statistically significant difference is found between the control and experimental groups in terms of the difference scores of (p<0.05). When the average values are examined, it is seen that the increase in the achievement scores regarding sonority in the experimental group is significantly higher than that of the control group. The mean decrease in the achievement score on sonority of the control group by 0.12 points is not significant. However, the mean increase of 0.46 points in the achievement score about sonority of the experimental group is significant. (p<0.05).

2. Comparison of the scores concerning the melodic success

Table 2. *Comparison of the scores concerning the melodic success*

			Score			Wilcoxon	
			Pretest	**Posttest**	**Difference**	**Z**	**p**
Group	Control (n=43)	$\bar{X}$	5.12	5.12	0.00	-0.12	0.904
		SD	0.98	0.91	1.11		
		R	46.17	39.10	42.93		
		M	5.00	5.00	0.00		
	Experimental (n=54)	$\bar{X}$	5.20	5.70	0.50	-2.96**	0.003
		SD	1.16	0.63	1.11		
		R	51.25	56.88	53.83		
		M	6.00	6.00	0.00		
Mann-Whitney U	Z		-0.96	-3.62**	-2.03*		
	p		0.338	0.000	0.042		

** p<0.05; ** p<0.01; $\bar{X}$: Mean; SD: Standart Deviation; R: Mean Rank; M:Median*

Table 2 shows that there is no statistically significant difference between the groups in terms of their pre-test scores concerning the melodic success (p>0.05). On the other hand, when the comparison of the groups in terms of their post-test scores is examined, it is seen that there is a significant difference between the two groups in terms of their achievement score (p<0.01). When the average scores are examined, it is observed that the post-test achievement score of the experimental group is higher than that of the control group. Similarly, a statistically significant difference is found between the difference scores of the control and experimental groups (p<0.05). When the average values about the differences are examined, it is found that the increase in the melodic success scores of the experimental group is significantly higher than those of the control group, whereas the success score in the control group do not show any increase. According to the Wilcoxon test results, although there is no change in the achievement score of the control group, in the achievement score of the experimental group there is an average increase of 0.50 points which is considered to be significant (p<0.01).

3. Comparison of rhythmic success scores

Table 3. *Comparison of rhythmic success scores*

			Score			Wilcoxon	
			Pretest	**Posttest**	**Difference**	**Z**	**p**
Group	Control (n=43)	$\bar{X}$	7.72	7.63	-0.09	-0.33	0.743
		SD	1.24	1.29	1.43		
		R	49.64	43.84	45.92		
		M	8.00	8.00	0.00		
	Experimental (n=54)	$\bar{X}$	7.69	8.02	0.33	-1.70	0.090
		SD	1.23	1.06	1.27		
		R	48.49	53.11	51.45		
		M	8.00	8.00	0.00		
Mann-Whitney U	Z		-0.21	-1.69	-1.00		
	p		0.835	0.092	0.319		

** p<0.05; ** p<0.01; $\bar{X}$: Mean; SD: Standart Deviation; R: Mean Rank; M:Median*

As can be observed in Table 3 there was no statistically significant difference between the two groups in terms of their rhythmic success scores in the pre-test scores, post-test scores and difference scores (p>0.05). As seen in the Wilcoxon test, the increases in the pre-test and post-test scores were not significant for both groups.

4. Comparison of timbre success scores

As can be seen in Table 4 the pre-test mean scores of the participants for the timbre success significant vary between two groups (p<0.01). More specifically, the pre-test timbre achievement score of the experimental group is much higher than that of the control group. Similarly, there is a statistically significant difference between the post-test scores of the control and experimental groups (p <0.05), and this difference is in favor of the students in the experimental group. However, it is not wise to state that the method implemented is more successful in the experimental group. Because the success in the pre-test achievement scores is also higher for the experimental group. For this, the difference between the scores of the participants from the success test in the pre-test and in the post-test must be compared. As a result of the comparison, no significant difference was found between the two groups in terms of the differences in their scores. As seen from the Wilcoxon test, the increases were not significant for both groups.

Table 4. *Comparison of timbre success scores*

			Score			Wilcoxon	
			Pretest	**Posttest**	**Difference**	**Z**	**p**
Group	Control (n=43)	$\bar{X}$	3.40	3.53	0.13	-1.33	0.185
		SD	0.70	0.78	0.83		
		R	40.92	43.47	51.34		
		M	4.00	4.00	0.00		
	Experimental (n=54)	$\bar{X}$	3.78	3.83	0.05	-1.00	0.317
		SD	0.46	0.42	0.41		
		R	55.44	53.41	47.14		
		M	4.00	4.00	0.00		
Mann-Whitney U	Z		-3.61**	-2.33*	-0.95		
	p		0.002	0.020	0.341		

** p<0.05; ** p<0.01; $\bar{X}$: Mean; SD: Standart Deviation; R: Mean Rank; M:Median*

Findings from the Basic Musical Knowledge Test

The findings of the Basic Musical Knowledge Test that was administered to the experimental group are shown in Table 5 in the context of the dimensions of rhythm and musical note knowledge, measure numbers, musical terms and symbols and music culture, which are the four sub-dimensions of the test.

Table 5. Comparison of the pre-test and post-test mean scores of the experimental group concerning the Basic Musical Knowledge

As can be seen in Table 5 the difference between the mean scores in pre-test and post-test of the participants concerning the basic musical knowledge is statistically significant ($p<0.01$). The post-test scores of the participants in regard to the rhythm and musical note knowledge, number of measures, musical terms and symbols and music culture dimensions were found to be significantly higher than those in the pre-test scores.

DISCUSSION and CONCLUSION

The aim of this study is to investigate the effect of the Kodaly method employed in a music lesson on musical knowledge and musical hearing skills of pre-service classroom teachers. Bowyer (2010) analyzed the effect of the Kodaly method on the participants' musical skills and suggested that traditionally viewed as suitable primarily for the elementary general music classroom the Kodaly concept offers an exemplary framework for teaching musical skills and concepts to adult learners. In addition, Fritz (2015) found in the study on sample of high school students that the Kodaly Concept provided a sequential process to aid student in enhancing their musical literacy skills. In the present study at the end of the 8-week music lessons which were developed in line with the Kodaly method, it is found out that the pre-service classroom teachers improved in terms of their musical hearing and basic music knowledge.

The pre-test findings obtained from the Musical Hearing test which is one of the data collection tools used in the study suggest that the scores of the participants in relation to the sonority, melodic success and rhythmic success do not statistically significantly vary for the experimental and control groups (see Tables 1, 2, 3) their scores for the timbre success do significantly vary between the groups and this significant difference is in favor of those in the experimental group indicating that the experiment subjects have higher scores for the timbre success (see Table 4). This result shows that the experimental and control groups were similar in terms of sonority, melodic success and rhythmic success at the beginning of the study.

Following the course plans developed and implemented based on the Kodaly method, the data collection tools were re-administered as post-tests. After this application, a statistically significant difference was observed in favor of the preservice teachers in the experiment group in the pre-test and post-test findings concerning the melodic success sub-dimension of the musical hearing test (see Table 2). Concerning intragroup changes it is found that the experiment group students' melodic success scores (see Table 2) and sonority success scores (see Table 1) statistically significantly increased following the music course in which the Kodaly method was employed. This finding is consistent with the findings of other studies carried out on sonority and melodic success. Göncü and Türkmen (2018) employed the Kodaly method for amateur choral students and conclude that the sonority activities implemented in consistent with this method (sound exercises can also be evaluated within the scope of these studies.) are both informative and fun. In study by Ryman (2019) which deals with the significance of hand signs in teaching sonority on a sample of high school students it is found that the Kodaly method, when combined with the use of Curwen-Glover, hand signs can be especially effective in improving the singing skills of choral students at the secondary school level.

There was no statistically significant difference between the pre-test and post-test scores from the rhythmic success sub-dimension of the Musical Hearing Test for the pre-service teachers in both the control group and the experimental group and also, there was no statistically significant difference between the pre-test and post-test scores from the same sub-dimension for the participants in the experimental and control groups (see Table 3). The pre-test and post-test findings obtained from the sub-dimension of musical success in the Musical Hearing Test suggest that the control and experiment significantly vary before and after the music course in which the Kodaly method was employed (see Table 4). This shows that the reason for the fact that the scores obtained following the implementation were in favor of the experimental group is not only the use of the Kodaly method, but may be other factors.

Another data collection tool employed in the study is the Basic Musical Knowledge Test which was administered to the experimental group who was taught through the Kodaly method. The findings from this test which was used both as a pre-test and a post-test (see Table 5) show that the participants' mean scores from the dimensions of Knowledge Rhythm and Musical Note, Number of Measures, Musical Terms and Symbols and Music Culture significantly increased. Wolf (2019) citing Lane who emphasizes the significance of music literacy argues that "the Kodaly approach defines music literacy as the ability to look at a musical score and think the sounds just as easily as one thinks the words on a page of writing." Similar to the previous findings the findings of the study indicate that the Kodaly method significantly improves basic knowledge of the pre-service teachers on music (Bowyer, 2015; Göncü and Türkmen, 2018; Luen, Ayob, Wong and Augustine, 2017; See and Ibbotson, 2018). These researchers showed that the musical activities implemented based on the Kodaly method could contribute to the developmental processes of the participants. They also found that by using hand signs, students could improve their voice development, sound heights and rhythm skills. This clearly demonstrates the effect of this method on musical knowledge and hearing.

Studies carried on a sample of teachers (classroom teachers and music teachers) and on a sample of pre-service teachers (preservice classroom teachers and preservice music teachers) (Andırıcı, 2006; Aydemir, 2018; Çelik, 2001; Ercan, 2006; Koç, 2006; Yazıcı, 2015) conclude that the Kodaly music teaching method is not well known in Turkey and that both in-service teachers and pre-service teachers do not find themselves sufficient about using this method in classrooms. The first thing that needs to be done for the recognition of the Kodaly method and making it more widespread is the restructuring of teacher training programs. The scope of the music courses given in the teacher training programs should be expanded, and other methods and techniques of music teaching including the Kodaly method should be introduced and taught in depth to preservice teachers. It is expected that classroom teachers who deliver or will deliver music courses at elementary schools should have a good background in music and music education and will be individuals who recognize, promote and understand other cultures in the teaching the course.

Pre-service teachers and teachers may be given several opportunities to talk, discuss and exchange information with other educators, academicians and experts in music education invited from abroad by organizing scientific activities such as seminars, summer schools, conferences, symposiums hosted by universities. At the same time teachers should be encouraged to participate in seminars, summer schools, conferences and symposiums organized abroad to gain the necessary knowledge and experience, make observations and exchange ideas with colleagues in other countries, especially in regard to the Kodaly method.

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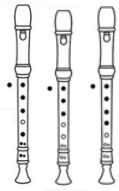
Appendix

1st Week Lesson Plan

Lesson plans contain three lesson hours. In this lesson plan, there are some activities which are based on Kodaly method. Some parts of lesson plan such as warm-up, breathing exercise etc. are not included in this sample.

Musical Activities	Aims	Learning Outcomes
1. Listening √ 2. Singing √ 3. Playing √ 4. Musical hearing 5. Rhythm √ 6. Solfege √ 7. Hand signs √ 8. Musical writing 9. Movement √ 10. Creativity √ 11. Inner hearing √ 12. Music culture	At the end of the lesson students; 1. Will sing their names by rhythmically, 2. Will demonstrate the difference between talking and singing, 3. Will sing s-m patterns, using hand signs. 4. Will show to pitch with hand or arm movement. 5. Will keep a steady beat while they are singing in tune. 6. Will sing chosen nursery rhyme and song between mi-la interval. 7. Will learn and understand musical terms: Piano-Forte.	At the end of the lesson student should be able to: 1. Keep a steady beat. 2. Tap a rhythm 3. Clap their own name with rhythmically 4. Clap the song's lyrics according to its rhythm. 5. Sing in unison in a group. 6. Play in a group. 7. Understand musical writing. 8. Improve music memory.

Prepare	Present	Practice
1. High and low 2. Rhythm syllables pattern qsdQ ta, ti-ti, rest qsdQ  Sol-Mi-La / (Fa-Sol-La/*Do-Re-Mi)* 3. Piano / Forte ***p*** ***f***	1. Rhythm, tempo, beat, melody 2. Musical writing: measure, bar lines, final bar lines, musical dynamics, forte-piano 3. qsd Q ta ta-te rest 4. Hand signs [(p) o (i) 5. Stick notation sdqQ 6. fa-sol-la notes at the recorder 	1. Keep steady beat 2.Hand signs 3. Teaching nursery rhyme and song 4. Playing by the recorder

1. Greetings: 15 minutes

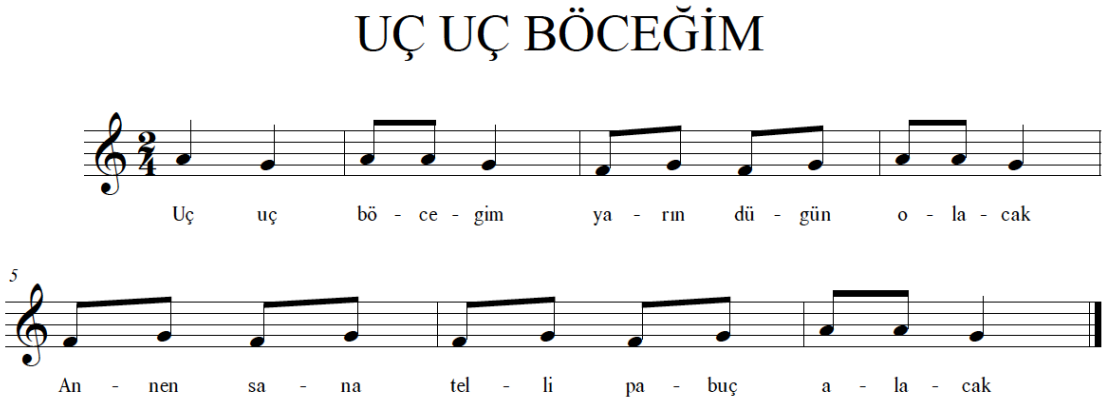
Teacher:  Mer-ha-ba he-pi-ni-ze

Students:  Mer-ha-ba öğ-ret-me-nim

Teacher:  Be-nim a-dım Me-ral

Students:  Be-nim a-dım Ya-se-min

4. Nursery rhyme: Uç Uç Böceğim 25 minutes



a. Students are asked about rhymes they have already learned/known. “Uç Uç Böceğim” The rhyme is recalled by class reminding. Musical writing: bar lines, final bar line.

Rhythm Pattern: qsd qsd

ta ta-te ta ta-te

b. Finger signs for notes values:

Aim: To ensure the perception of note values for visually and mathematically.

c. Choir sings with steady beat.

2$qq\qq\qq\qq\ Uç uç
böce –ğim yarın düğün ola - cak

\qq\qq\qq| Annen sana
telli pabuç ala - cak

d. Then, each syllable is applauded, and the harmony between the note values and the reading of the syllables is shown.

2$qq\sdq\sdsd\sdq\ Uç
uç bö-ce-ğim ya-rın dü-ğün o-la-cak

\sdsd\sdsd\sdq| An-
nen sa-na tel-li pa-buç a - la-cak

e. Using rhythm syllables q ta, sd ta-te are made to rhythmic reading.

Eight notes : tap the knee Quarter notes : clap

Solfege is performed to distinguish/differentiate the loudness in terms of music.: First with rhythm syllables, (ta, ta-te), then note name.

2$qq\sdq\sdsd\sdq\

ta ta ta-te ta ta-te ta-te ta-te ta

\sdsd\sdsd\sdq|

ta-te ta-te ta-te ta-te ta-te ta-te ta

f. Other tonality with hand signs:

2$qq\sdq\sdsd\sdq\sdsd\sdsd\sdq| l

s l l s f s f s l l s f s f s f s f s l l s

2$qq\sdq\sdsd\sdq\sdsd\sdsd\sdq| m

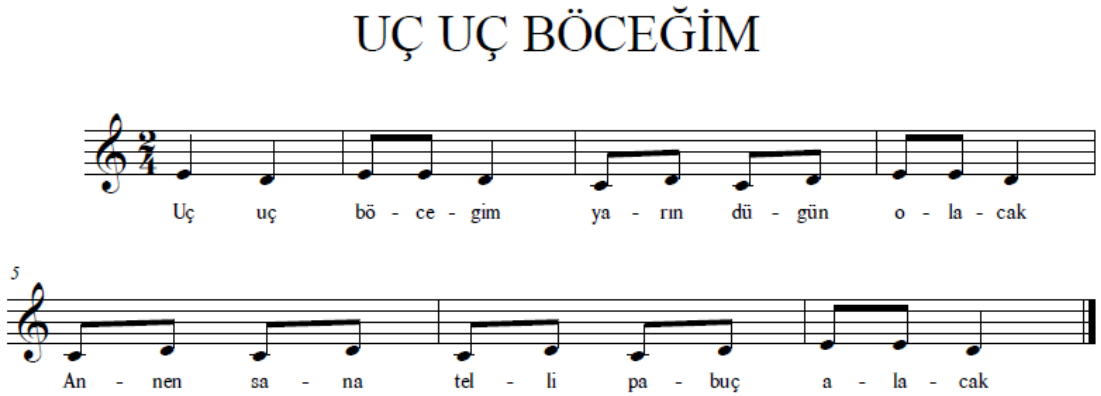
r m m r d r d r m m r d r d r d r d r m m r

2$qq\sdq\sdsd\sdq\sdsd\sdsd\sdq| t

l t t l s l s l t t l s l s l s l s l t t l

(si)

The rhyme is shown in C major tone:



5. Vocal adding game: 15 minutes

Aim: Interval training; minor 3rd, perfect 4th and major 2nd; singing the pitch correctly in the sol-mi-la interval/stay in tone, improving the musical memory.

a. First teacher practices sol-mi-la notes by singing. Then uses Curwen hand sign to show pitch distance.

[

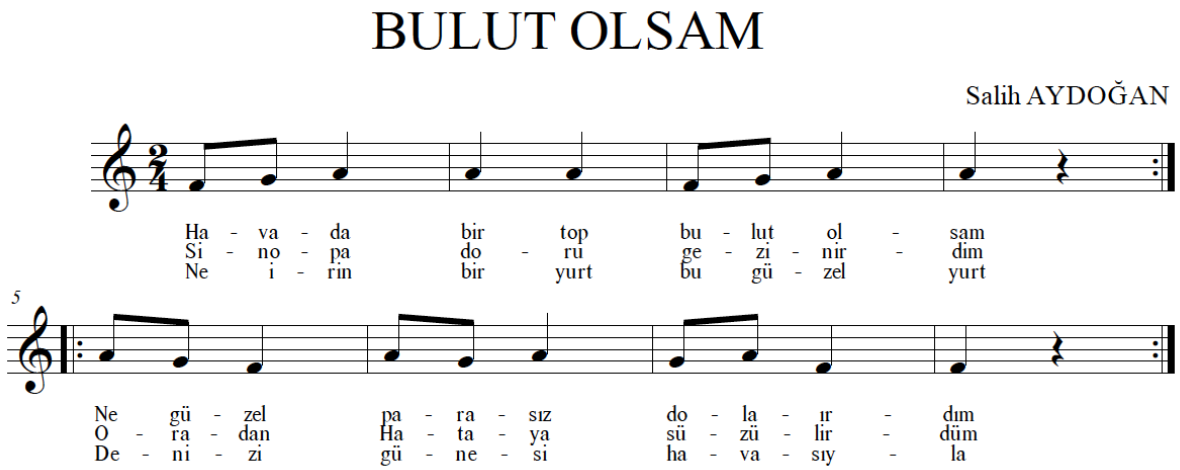
p l

s i

m

b. In the second stage, teacher informs about the game and creates a melody (using up to four sounds) using one or more notes. The next student repeats the melody created by the teacher and adds the notes he/she chooses to this melody, again using one of the notes of sol-mi-la. The queue passes to the other student and this student repeats the previous tunes and adds the new note of his/her choice. The game continues in this way up to six to eight students. It is important to note that the new sounds are added, keeping the previous sounds in memory.

6. Song: Bulut Olsam: (Aydoğan, 2007, s. 52). 25 minutes



c. Echo: The first repetition of the song is sing by the teacher, and the second repeat by the students. Then with lyrics:

Teacher:	Havada bir top bulut olsam.
Students:	Havada bir top bulut olsam.
Teacher:	Ne güzel parasız dolaşırdım.
Students:	Ne güzel parasız dolaşırdım.

d. Inner hearing

Aim: Developing inner hearing

When the song is sung for a second time, by complying with the sign again, students are allowed to envision the music in mind (inner hearing), to sing it from the mind. In this way, students are asked to silence and say from inner hearing some predetermined places. Rhythm sticks are used to keep in steady beat

Students : Havada bir top bulut olsam

Inner Hearing : *Havada bir top bulut olsam*

Students : Ne güzel parasız dolaşırdım

Inner Hearing *: Ne güzel parasız dolaşırdım*

Students : Sinop'a doğru gezinirdim

Inner Hearing : *Sinop'a doğru gezinirdim*

Students : Oradan Hatay'a süzüldüm.

Inner Hearing : *Oradan Hatay'a süzüldüm.*

Students : Ne şirin bir yurt bu güzel yurt.

Inner Hearing : *Ne şirin bir yurt bu güzel yurt*

Students : Denizi, güneşi, havasıyla

Inner Hearing : *Denizi, güneşi, havasıyla*

e. Solfege: Firstly, with rhythm syllables; reading is done by clapping each rhythm syllable.

sd tap left knee right knee

q clap

Q tap shoulders

2$sdq\qq\sdq\qQ>

ta te ta ta ta ta te ta ta rest

.sdq\sdq\sdq\qQ>

ta te ta ta te ta ta te ta ta rest

f. Then solfege syllables:

2$sdq\qq\sdq\qQ>

f s l l l f s l l rest

.sdq\sdq\sdq\qQ>

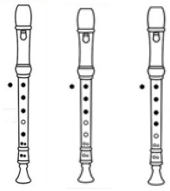
l s f l s l s l f f rest

g. Curwen hand signs:

2$op{{[P\[P{{P[PP\op {[PP{\[PPQ>

[pPPo \[pP[PP\p[{Po{P \oPPPQ>

h. Play with the recorder:



[[

p p p p

o o o o o

7. Listening and moving: Four Season/Autumn A. Vivaldi 10 minutes
(https://www.youtube.com/watch?v=8x4GC0-Z0ZI).

Aim: Listening education, forte/piano concept, steady beat.

Evaluation