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Scales and exercises with Aksak meters in flute education: A study with Turkish and Italian students[iii]

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Musical scale and exercise studies in instrumental education are considered as a fundamental component of music education. During an analysis of methods prepared for instrumental education, it was detected that scale and exercise studies for Aksak meters generally did not exist. This study was conducted to identify the effects of scales and exercises prepared for Aksak meters on performance levels based on opinions from student participants. The "One- Sample Pretest/Posttest" experimental model was used for this research. The sample population used for this study consisted of instrumental (flute) students from Uludağ University, Faculty of Education, Music Education Department in Turkey and flute students from "Alfredo Casella" Conservatory in Italy. From the student evaluations, it was found that the scales and exercises prepared for Aksak meters have a positive impact on performance levels.

Key words: Aksak meter, student views, flute education.

INTRODUCTION

The exercises prepared for an instrument have the utmost importance in increasing technical proficiency and developing musicality in instrumental education. Demirci (2012) states that "practicing scales has important place in piano *(or other instruments)* education to improve students' technique and dexterity, and also to improve timing and help ear training mirroring their success in performing" (Demirci, 2012). This statement shows that the benefits that musician gain from practicing scales and exercises are applicable to all instruments.

George (2007) article "Teaching Flute: Scales and Études", with flute instructor Patricia George divided flute courses into three parts and stated that two of these parts consist of exercises and étude studies. George stated that these exercises and études involve the study of key and time signatures, rhythmic patterns, scales, arpeggios and chords; and that students should be motivated to study exercises for passages that they have difficulty playing (George, 2007). The Trevor Wye flute method, which shares a similar opinion, stated that without scale and arpeggio studies, finger, mouth, and tongue techniques cannot be improved (Wye, 1999).

When irregular meters are defined, different terms are used to describe them including "irregular", "mixed", odd" (Gates, 1962), "asymmetric" or "aksak" (Moelants, 2006; Polak, 2015) meters. This study uses, the "aksak meter"

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term that Constantin Brăiloiu defined in his “Le rythme Aksak” article in 1951. The word “aksak”, used in Turkish music, took its place in music literature on a global basis due to Brailou’s article. “Aksak is a term borrowed from Turkish music theory” (Cler to Moelants, 2006). Aksak meters do frequently occur in Turkish music, but they also occur in music from different cultures such as Bulgaria and the Balkans (Petrov, 2012).

Meters containing units that are played two at a time and three at a time are called aksak meters (Sun, 1997), and time signatures such as 5/8, 7/8 and 8/8 are examples of aksak meters. In addition to having different time signatures, these meters are played using different patterns for the same time signature; in fact the patterns, which contain different rhythmic structures, enrich the rhythm. For instance, the 9/8 aksak meter has 4 different forms (2+2+2+3, 2+2+3+2, 2+3+2+2 and 3+2+2+2).

Moreover, particularly in Turkish Folk Music, one folk song may contain one or multiple forms, and each form may be played with different rhythmic patterns. Aksak meters have different rhythmic specialties in time signatures and rhythmic structures. Taking this situation into consideration, it seems logical that specific technical studies should be created for practicing aksak meters in flute education. However, when the existing flute methods were analysed from this perspective, it was observed that aksak meter technical studies were almost nonexistent.

The effects of practicing scales and exercises in aksak meteres prepared to provide a solution to this problem on musical performances were investigated in this experimental study based on students’ self-evaluations. This study, compares folk song performance levels of Turkish students’ (who encounter folk songs frequently and therefore have some information about aksak meters) with the performance levels of Italian students’ (who do not encounter aksak meters in their daily lives and education). Thus, based on students’ views, traditional Turkish Folk song performance levels are compared between the two groups.

Problem statement

The aim of this study was to find answer to the following question:

“Do aksak meter scales and exercises prepared for flute education have an impact on the folk song performance levels of students?” four research questions were developed based on the problem statement, as follows:

To be investigated using the results of students’ self-evaluations:

1. Is there a difference between Turkish folk song performance levels of Turkish and Italian students based on pretest results?
2. Is there a difference between the Turkish folk song performance levels of Turkish and Italian students based on posttest results?
3. Is there a difference between the students’ Turkish folk song performance levels based on both the pretest and posttest results?
4. What are students’ opinions on the prepared scales and exercises?

METHODOLOGY

The “One-Sample Pretest/Posttest” experimental model was used in this study. As previous researchers explain it, “In this design, the effect of the experimental process is tested by studying one group. The measurements of participants based on the dependent variable were detected before application with a pretest and after application with a posttest using the same participants and the same measurement methods” (Büyüköztürk et al., 2014). In the one sample pretest-posttest model consisting of flute students, the dependent variable was applied and students before and after the experiment took the two measurements themselves.

The folk songs used in the study were chosen from the Turkish Radio Television Foundation (TRT) Turkish Folk Music Repertoire based on an analysis of aksak meter folk songs. As a result of this analysis, 12 folk songs with 5/8, 7/8, 8/8, 9/8, 10/8 and 9/16 aksak meters were chosen. Table 1 shows the properties of these folk songs (name, time signature and rhythmic patterns) chosen for the method application.

To collect pretest and posttest results, an observation form was prepared. During the preparation of the observation form, the observation forms used in the Alev Müezzinoğlu’s PhD thesis of (2012) named “The Use of Folk Tunes Adapted for Violin Education” and Afşin Öner's (2011) observation form from his PhD thesis titled “Flute Programme with Turkish Traditional Music Elements” were analysed. In these forms, students were asked to evaluate themselves using a 5 point Likert scale based on the behaviours described below. Based on folk song performances, the behaviours observed were; the notes, nuances, breathing spots, articulations, suitable tempo for the musical character, no unspecified pauses, technical passages performed in rhythm, and rhythmic structures performed correctly. The method application of study consists of practicing the scales and exercises that were prepared by taking the selected folk songs into consideration.

The experimental process of this study consists of scales and exercises prepared by taking the practice folk songs into account. The maqam scales of folk song are used in scales and exercises. When the scales contained “coma” sounds they were combined with the closest tempered sounds such as the technic found in the “Turkish Music Makam Scales” book of Muammer Sun (2007). In addition, during the preparation of the scales and exercises, the flute methods accepted worldwide which are Marcel Moyse’s “Gammes et Arpeges – 480 Exercices” (1933), “Exercices Journaliers” (1923), Georges Lambert’s (1994) “Exercices Journaliers”, Th. W. Stepanow’s (1995) “Scales, Broken Chords and Arpeggios for Flute”, “Practice Books for the Flute” by Trevoy Wye (1999), M. A. Reichert’s (2013) “Seven Daily Exercises”, V. N. Tsıbin’s (1940) “Fundamental Techniques for the Flute Instrument”, Amand Vanderhagen’s (1798) “Nouvelle Methode de Flute”, and the “Turkish Music Scales for the Cello” book of Barış Demirci (2013) published in Turkey were used (Sakin and Öztürk, 2015).

Data collection

The method application process took two months with the Turkish

Table 1. Properties of the chosen folk songs.

Number of the folk song	Name of the folk song	Time signature of the folk song	Rhythmic pattern
1	Şişmanoğli Vurdiler	5/8	2+3
2	Bulutlar Oynar Oynaşır	5/8	2+3
3	Ben Giderim Batuma	7/8	2+2+3
4	Gelin Alma Havası	7/8	3+2+2
5	Bana Kara Diyen Dilber	8/8	3+2+3
6	Ardıçtandır Kuyuların Kovası	9/8	3+2+2+2
7	Atlar Eğerlendi	9/8	2+3+2+2
8	Kırklar Samahı	9/8	2+2+3+2 / 2+3+2+2 / 3+3+3+3
9	Asmalı Mencere	9/8	3+2+2+2 / 2+2+2+3
10	Böyle İkrar İlen	10/8	3+3+2+2
11	Su İçemem Testiden	10/8	3+2+2+3 / 2+3+2+3
12	Dirmilcik'ten Gider Yaylanın Yolu	9/16	2+2+2+3

students and one month with the Italian students. With Turkish students, a pretest of 2 folk songs per week was completed, with Italian students the pretest consisted of 4 folk songs per week. The students evaluated themselves. After students studied the scales and exercises, they completed the posttest and evaluated themselves again. In addition, positive and/or negative views and suggestions about the study were collected from the students.

Data analysis

The quantitative data obtained from the observation forms after the students completed the method applications were tested using the SPSS-22 statistical package with t-tests and Mann- Whitney U Tests. The test were intended to discover whether there was a significant difference between Turkish and Italian students concerning the research questions presented earlier. The qualitative data that contained the positive and/or negative views and suggestions of the participants were analysed using the descriptive analysis method.

Participants

The participants in this study were instrumental (flute) students from Uludağ University, Faculty of Education, Department of Music Education in Turkey and flute students from the Alfredo Casella Conservatory in L'Aquila city in Italy. The sample size was 18 Turkish students (TS) and 8 Italian students (IS) (N = 26). In this study, students were asked to complete a form to collect their educational levels and determine whether they had studied Turkish Folk Music for the flute prior to the study. The results showed that none of the students had any formal educational experience with Turkish Folk Music for the flute, and only 2 Turkish students practiced exercises based on Turkish Folk Music in their daily flute practice routines. These exercises were not rhythmically focused; instead, they were generally modal.

FINDINGS

This study investigated differences between Turkish and Italian students' aksak meter folk song performance levels based on self-evaluation results. The determination between-group differences on the pretest and posttest results were made using a Mann-Whitney U Test. The contributions of the scales and exercises to later performance levels were evaluated by taking the pretest and posttest point differences into consideration using t-tests. Table 2 shows the pretest score averages based on the Turkish and Italian students' self-evaluations and the Mann-Whitney U Test results.

Table 2. The Pretest and Mann Whitney U Test Scores of Turkish and Italian Students.

Students	N	Median	U	z	p	r
Turkish	18	175.5	122	2.778	0.004	0.53
Italian	8	252	-	-	-	-

Table 3. The posttest and Mann Whitney U test scores of Turkish and Italian students.

Students	N	Median	U	z	p	r
Turkish	18	290	121	2.723	0.005	0.53
Italian	8	339	-	-	-	-

When the pretest results were analysed a significant difference can be observed in the students' self-evaluations in favour of the Italian students ($U=122$, $p<0.05$). When the averages are taken into consideration, Italian students' pretest scores are higher than Turkish students'. Table 3 shows the posttest averages of Turkish and Italian students based on their own evaluations and the Mann Whitney U Test results.

The posttest results showed a significant difference in the scores in favour of Italian students ($U=121$, $p<0.05$). When the averages of the posttest scores were taken into consideration, Italian students' posttest scores were higher than those of the Turkish students. Tables 4 and 5 shows the pretest and posttest results for the participants

Table 4. Pretest/posttest and "t-test" scores.

Variable	N	Mean	SD	SE
Pretest	26	212.6	43.33	8.497
Final test	26	306.8	57.68	11.313

Table 5. "T-test" scores of the pretest/posttest results.

Variable	t	p	Mean difference	SE difference	Cohen's d
Final test - pretest	16.23	< .001	94.19	5.804	3.183

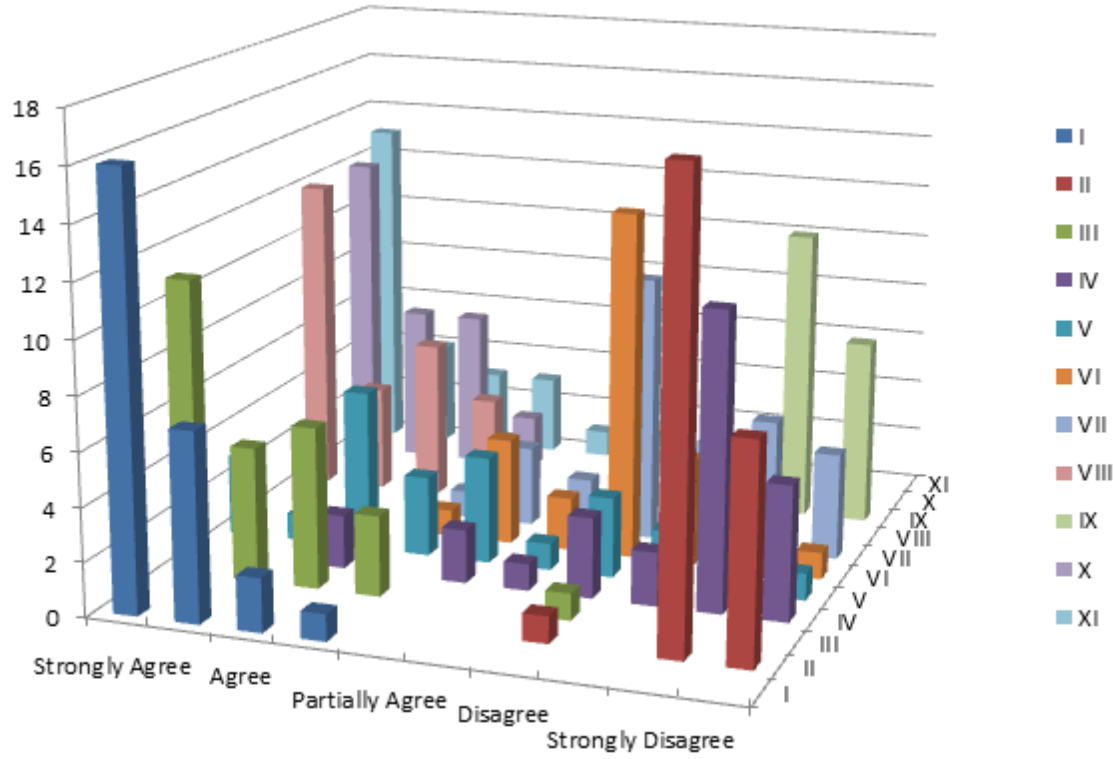

Figure 1. Student opinions after the study.

according to their self-evaluations and the t-test results.

From Tables 4 and 5 it can be observed that the aksak meter scales and exercises prepared for flute education based on t-tests of the posttest results (performed after the method application) had a positive impact on the performance levels of the folk songs (pretest=212.6, posttest=306.8). In addition, there is a significant difference between the pretest and posttest scores ($p < .001$). A form was presented to the students after the study to obtain their opinions concerning the method application and rating for the process.

Figure 1 and Table 6 illustrate and list the student views taken after the study, respectively, which showed that 16 Turkish and 7 Italian students strongly agreed with Statement I, "I found this study useful." Two Turkish and 1 Italian student agreed and 1 Turkish student disagreed with Statement II "I found this study unnecessary." Seventeen Turkish and 8 Italian students strongly disagreed and 11 Turkish and 5 Italian students strongly agreed with Statement III "I found the chosen folk songs suitable for this study." Six Turkish and 3 Italian students agreed, 1 Turkish student disagreed, and 11 Turkish and 5 Italian students strongly disagreed with Statement IV "Choosing different folk songs for the study would have been better." Three Turkish and 2 Italian students disagreed, 2 Turkish and 1 Italian student partially agreed, 2 Turkish students agreed, and 6 Turkish and 3 Italian students agreed with Statement V "The

Table 6. Student opinions after the study.

Variable		I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Strongly agree	TS	16	-	11	-	3	-	-	12	-	12	13
	IS	7	-	5	-	1	-	-	4	-	6	4
Agree	TS	2	-	6	2	6	-	-	6	-	6	3
	IS	1	-	3	-	3	1	1	4	-	2	3
Partially agree	TS	-	-	-	2	4	4	3	-	-	-	1
	IS	-	-	-	1	1	2	2	-	-	-	1
Disagree	TS	-	1	1	3	3	13	10	-	7	-	1
	IS	-	-	-	2	2	4	1	-	1	-	-
Strongly disagree	TS	-	17	-	11	2	1	5	-	11	-	-
	IS		8	-	5	1	1	4	-	7	-	-
Total	-	26	26	26	26	26	26	26	26	26	26	26

pretest phase of the study was hard." Four Turkish and 1 Italian student partially agreed, 3 Turkish and 1 Italian student strongly agreed, 3 Turkish and 2 Italian students disagreed, 2 Turkish and 1 Italian student strongly disagreed and 13 Turkish and 4 Italian students disagreed with Statement VI "The Final Test phase of the study was hard." Four Turkish and 2 Italian students partially agreed, 1 Turkish and 1 Italian student strongly disagreed, 1 Italian student agreed, and 10 Turkish and 1 Italian student disagreed with Statement VII "The performance exercise period of the study was hard." Five Turkish and 4 Italian students strongly disagreed and 3 Turkish and 2 Italian students partially agreed, 1 Italian student agreed, and 12 Turkish and 4 Italian students strongly agreed with Statement VIII "This study was fun and made me happy." Six Turkish and 4 Italian students agreed, and 11 Turkish and 7 Italian students strongly disagreed with Statement IX "This study was boring." Seven Turkish and 1 Italian student disagreed and 12 Turkish and 6 Italian students strongly agreed with Statement X "This study is useful for other courses as well." Finnaly, 6 Turkish and 2 Italian students agreed, 12 Turkish and 4 Italian students strongly agreed, 3 Turkish and 3 Italian students agreed, 1 Turkish and 1 Italian student partially agreed and 1 Turkish student disagreed with statement "Turkish Folk Music exercises should take place more often in flute education."

Figure 2 and Table 7 presents the response of students when asked about their favourite time signatures, 7 Turkish and 1 Italian student answered 5/8, 5 Turkish and 1 Italian students answered 7/8, 4 Turkish and 2 Italian students answered 9/8 and 2 Turkish and 3 Italian students answered 10/8. Finally, 1 Italian student answered 9/16. Moreover, when asked about the most challenging time signatures, 1 Italian student answered 7/8, 7 Turkish students answered 8/8, 6 Turkish and 1 Italian students answered 9/8, 4 Turkish students answered 10/8 and 1 Turkish and 6 Italian students answered 9/16.

As shown in Figure 3 and Table 8, 8 Turkish students chose the "Ben Giderim Batuma" folk song, 3 Turkish students chose the "Dirmilcik'ten Gider Yaylanın Yolu" folk song, and 2 Italian students chose the "Su İçemem Testiden" folk song as their study favourites. The other students chose different folk songs as their favourites. In addition, among the folk songs considered most difficult to play, 8 Turkish students chose "Asmalı Mencere", 3 chose "Böyle İkrar İlen", 2 chose "Atlar Eğerlendi", 2 chose "Bana Kara Diyen Dilber", 1 Turkish and 1 Italian student chose "Gelin Alma Havası" and "Ardıçtandır Kuyuların Kovası", and 1 Turkish and 6 Italian students chose "Dirmilcik'ten Gider Yaylanın Yolu" as their favourite and challenging folk songs.

RESULTS AND DISCUSSION

This study investigated both the effects of aksak meter scales and exercises on students' folk song performance levels and differences in the success levels of Turkish and Italian students based on self-evaluations. According to the test results, the Italian students achieved higher scores on both the pretest and the posttest than the Turkish students. The Italian students have better rhythmic resolution and showed a better ability to decipher written music when practicing performance skills despite the fact that they do not typically experience aksak meters in their daily lives. However, because these results were self-evaluation, it is possible that the Turkish students may have been more timid when completing the

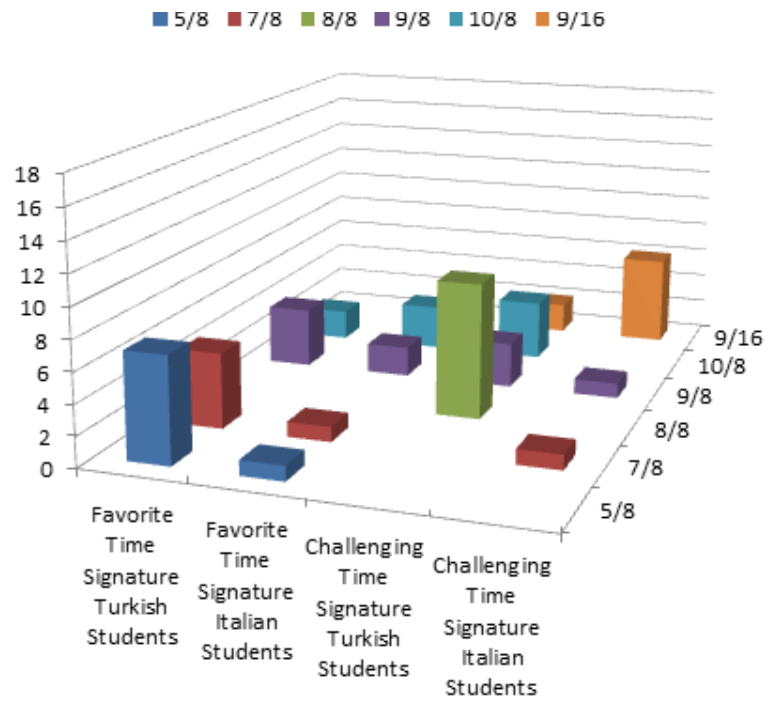

Figure 2. The students' favorite and challenging time signatures for studying.

Table 7. The students' favorite and challenging time signatures for studying.

Variable		5/8	7/8	8/8	9/8	10/8	9/16
Favorite time signature	TS	7	5	-	4	2	-
	IS	1	1	-	2	3	1
Challenging time signature	TS	-	-	9	3	4	2
	IS	-	1	-	1	-	6

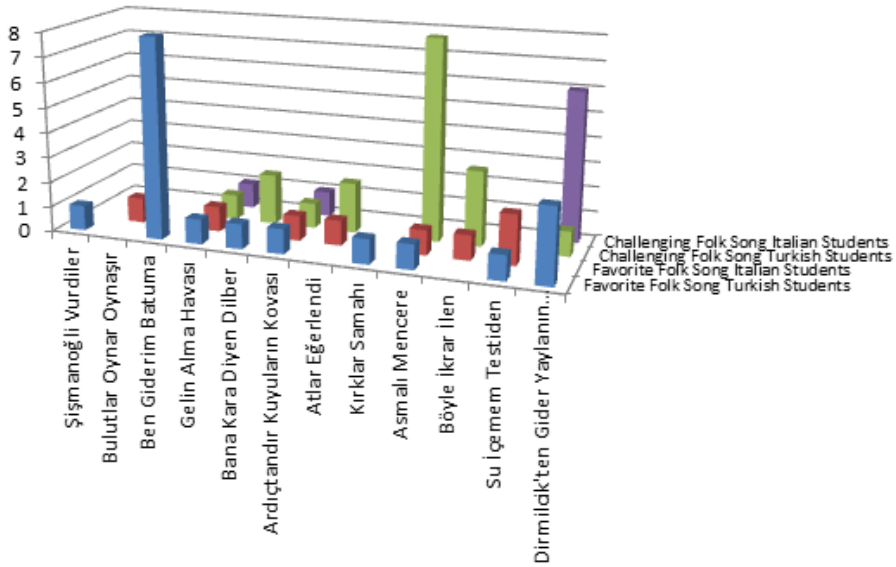

Figure 3. The folk songs students consider as their favourites and challenging to play.

Table 8. The folk songs students consider as their favourites and challenging to play.

Variable	Favorite folk song		Challenging folk song	
	TS	IS	TS	IS
Şişmanoğli Vurdiler	1	-	-	-
Bulutlar Oynar Oynaşır	-	1	-	-
Ben Giderim Batuma	8	-	-	-
Gelin Alma Havası	1	1	1	1
Bana Kara Diyen Dilber	1	-	2	-
Ardıçtandır Kuyuların Kovası	1	1	1	1
Atlar Eğerlendi	-	1	2	-
Kırklar Samahı	1	-	-	-
Asmalı Mencere	1	1	8	-
Böyle İkrar İlen	-	1	3	-
Su İçemem Testiden	1	2	-	-
Dirmilcik'ten Gider Yaylanın Yolu	3	-	1	6

self-evaluations than the Italian students. Moreover, based on the dates from the observation forms, the prepared scales and exercises apparently have a positive impact on the folk song performance levels of both Turkish and Italian students.

Conclusion

After completing the study, students were asked to indicate their positive and/or negative opinions and suggestions about the method application. Students' positive views:

Turkish students:

"I think that the prepared studies have a contribution to make (TS1, TS7, TS17). I found the musical scale studies beneficial for gaining a better understanding of the rhythm (TS2). The studies helped me develop better rhythmic knowledge (TS3, TS13). We saw and applied rhythmic patterns that we do not encounter often (TS4, TS16). This is an activity that every flautist should participate in (TS11). After the exercises I found I played the folk songs with more enjoyment" (TS11). I very much liked this study, which was prepared based on the properties of our own music. I understood that we rarely perform in Turkish folk music time signatures (TS15). The exercises were useful for learning new rhythmic patterns (TS4, TS13, TS18) (Sakin and Öztürk, 2015).

Italian students:

"The aksak rhythm studies were very beneficial and encouraging for me" (IS1, IS5). "It was a very different and important experience for me. We became familiar with different rhythms and melodies in an enjoyable way" (IS2, IS8). "Because of this study I was exposed to Turkish Folk Music" (IS3, IS6). "This experience was very enjoyable and beneficial for me. The exercises and folk songs not only let me become acquainted with Turkish Music but also helped me understand aksak meters and their unique rhythmic patterns. These studies also helped developed my ability to decipher written rhythms" (IS4). "This study was very beneficial for me because it taught me different rhythms" (IS7).

"These studies were not only beneficial for the flute course but also for the solfeggio course" (IS8).
Students' negative views:

Turkish students:

Understanding the exercises would be easier if they were written plainly rather than including examples (TS8). The exercises were hard for me because I just started the flute. I could not spare much time to practice but if I work harder, I can overcome the difficulties (TS2). Studying difficult rhythmic patterns and difficult articulations can be tough for beginner-level students (TS18). The exercises were boring because they were long (TS8). I need more time to practice the exercises (TS6). The exercises were a bit boring because the tempo was slow (TS9). The study was exhausting (TS9) (Sakin&Öztürk, 2015).

Italian students:

"More time should have been given for practice before the pretest. Then I could have performed better performance" (IS3). "I wanted the exercises to be a bit harder" (IS5). "More exercises should have been studied before the posttest" (IS7).

Suggestions of the students about the method application:

Turkish students:

I think that the exercises should be studied longer (TS1). We should practice other pieces using similar study methods (TS5). Different rhythmic changes could be made in the exercises with the sixteenth notes (TS17). Some exercises could be made more effective for both rhythm and finger practice (TS18) (Sakin&Öztürk, 2015).

Italian students:

"We should be exposed more often to help us understand ethnic or unfamiliar music" (IS1). "An ensemble study could have been included that used aksak meter" (IS2). "More time could have been given before the pretest" (IS3). "Easy duets or trios with aksak meters could have been included" (IS4). "The exercises could have been harder and they could have been studied longer" (IS5, IS6). "We could have made more exercises before the posttest" (IS7). "I needed more exercises to grasp the 9/16 time signature better" (IS8).

Overall the students evaluated the prepared scales and exercises as beneficial and enjoyable and, stated that these types of studies should take place in flute education more often and that they should be studied for longer periods of time.

In a future continuation of this study, the students' observation forms will be evaluated by experts and the results will be compared.

Conflict of Interests

The authors have not declared any conflict of interests.

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