

Impact of Walking Game Activity on Teaching of Asymmetrical Rhythms in Piano Education

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Abstract

This study aimed at examining to what extent the walking game activity is effective in teaching of asymmetrical (aksak) rhythm patterns in piano education. The study used the experimental method by setting up control and experiment groups each of which was composed of 11 people. In this practice that was conducted with students receiving the piano class in a private course whose ages ranged between 8 and 9, walking game activity was used to teach asymmetrical rhythm patterns. The practice was based on cards on which the rhythm patterns were written and repetition of the rhythm patterns formulated according to these cards with a walking game, and the final performances were measured with a given piano piece. A pre-test was also given to the students to measure the levels of students before the practice. All students were studied individually during the implementation process. Each student was studied for approximately 30 minutes, and student performances were measured with a rubric containing 6 evaluation steps. A classical study was carried out with the control group, and a limping walking practice was carried out with the experimental group. Digital data obtained through the practice were statistically analysed. In pre-test and post-test measurements, the Man Whitney U test was used. Since the total number of students was small, non-parametric tests were used directly. It was concluded as a result of the measurements that, in the post-test process, the students in the experiment group who studied with the walking game activity performed better in understanding and vocalizing the asymmetrical rhythm patterns compared to the students in control group.

Keywords: Piano education, games, asymmetrical rhythms, experimental.



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INTRODUCTION

Game can be defined as physical, mental and emotional activities performed individually or together to have a good time (Toprakçı, 2017). Play creates the opportunity for children to learn by doing and contributes to their development (Jones, 2001: Cited by Gunduz et al., 2017). According to Yavuzer (1998), game; The child learns the subjects that cannot be easily taught to the child through their own experiences, and they are activities that are done just for fun without planning the method or result (Cited by Bağcı, 2011). Games are a whole of joyful occupations and most sincere learning environment that the children, to play together around a given purpose and contribute in development of their social skills and children develop their senses/emotions and their talents are manifested as they play. (Yıldırım, 2015; Genç, 2014).

Considering together all these definitions about games; one can suggest that games can ensure entertainment of students and teachers throughout the class by making the classes effective and enjoyable. They can also be defined as activities that ensure active participation of students in the process in physical, mental and affective terms and help them achieve learning outcomes in an enjoyable fashion. Games are important tools that can function as a bridge in ensuring that students gain significant experience, think independently, solve problems, develop different thinking skills, express their feelings and develop their creativity and imaginations (Aykaç & Köğçe, 2020).

Games as called in field of education are one of the most enjoyable types of teaching and giving knowledge. This enjoyable approach can be critical for teaching the subjects that may sometimes get boring or some others that may be too abstract. At this point, it comes to the musical teaching process where games merge with abstract concepts. Many musical teaching activity and knowledge can be conveyed to students in a more practical and permanent way thanks to games. So, what are the reasons for the need for games in the musical education and piano education process? In this regard, issues such as the attention focus and interests of young children come across.

The importance of piano education is prominent in increasing the learning skills, attention, mental development and interest of young students (Çiftçi, Özelma, 2017). As a result of their study, Özerdem & Yıldız (2018) determined the main issues such as focusing attention and limited attention periods for the most common problems in the piano education process. Similarly, Işıkdemir (2019) shared expert opinions that young children may experience distraction and loss of motivation in piano education.

It is a known situation that children who receive piano education have problems controlling or supervising their attention (Hüseynova, 2019). At this point, attention gains importance in successful piano training, and the contribution of games at young ages is very important for success in this regard (Demirova, 2008). In the light of this information, when we examine the necessity and benefits of the concept of play in the process of music education and piano education, we encounter important findings.

Teaching the activities with games during musical education will ensure that especially children at early ages enjoy these activities and join them willfully (Pamukçu & Özer, 2015). Therefore, in today's piano education processes, it is important to ensure focusing of students with creative games and activities (Lindsay, 2006). The benefits of games (team skills, enjoyment, learning level, communication and social skill development, new learning ways, problem solving, critical thinking) in the music education process are also effective in the process of spreading theoretical concepts to the whole (Lunde, 2018; Viviers et al. 2016). In addition to this information, the benefits of game activities have been reported in some studies (Borges and Tome 2014; Tunçer and Doğrusöz 2013; Lindsay 2006; Avcı 2018; Eğilmez 2009; Ersoy-Güleç 2010; Bekan 2019) in the literature.

Impact of games on teaching some concepts and notions in musical education in general and piano education in particular finds a place in literature. At this point, learning of the asymmetric rhythm, which is a rhythm pattern in Turkish music and is sometimes played during the piano education gains importance. It also requires special attention to teach in the piano asymmetric rhythm patterns that are different from standard rhythm patterns.

In Turkish music, asymmetric rhythms are the rhythm patterns that are composed by combining the beats that are grouped in dual or triple format without changing the pace that represents the difference between these beats (Saygun, 1966; cited by Duran, 2018). If a measure contains both a dual time (two eight notes) and triple time (three eight notes) and if these measures are combined in various sequences, such a measure structure is called as asymmetric rhythm (Sağır, 2022; Yöndem, 2016). Asymmetric rhythm patterns (such as 9/8, 7/8, 5/8) have a different distribution and playing feature compared to other standard rhythm structures (such as 3/4, 4/4, 2/4). Therefore, it required a different focus compared to the standard rhythm patterns. As seen in the example given below, eighth notes are grouped in two eight notes and three eight notes. The speed does not change while these rhythms are played. But the location of the three eighth note patterns can change.



Figure 1. A sample division for 7/8 and 9/8 asymmetric rhythms.

At this point, İlkay and Sarı (2020) suggested that throughout the piano learning process simple, combined and asymmetric rhythm patterns should be taught in intermediate and advance levels and students should get prepared for such variations in rhythm. Sönmezöz (2014) and Özer (2019) argued that the asymmetric rhythm practices had a significant role in the content of many piano classes they examined in musical education. Aydınöğlü (2014) expressed that practicing asymmetric rhythms in the piano from the beginning would be helpful in solving more complex rhythmic structures at later stages. Şahin and Yadigaroglu (2018) suggested that it is partly difficult to play the asymmetric rhythms and recommended to conduct additional practices before playing such rhythms. Ertürk (2018) explained that having prior practices for asymmetric rhythms (in another time or class) would have an impact on playing them in the piano. Aydiner (2010) pointed to the fact that asymmetric rhythm patterns often created trouble for piano students when playing Turkish musical pieces in the piano.

From the perspective of both games and asymmetric rhythms, there are some common critical aspects noted by Pausch (2019), Barsamyan (2019), Zhang (2018), Li (2018), Ercan (2008) and Maydwell (2007). All these authors highlighted careful practice and difficult parts along with a piano education that is well planned in content and woven with different activities when necessary.

In the literature reviewed above, the benefits of the games (enjoyment of students, increased interest, helping focus attention, etc.) are expressed in various ways. Similarly, the subject discussed in this study focuses on an enjoyable activity plan to affect students' interest and learning. It is planned that the subject, which is thought to have problems in attention and focus when taught theoretically, will be presented with a game that will attract students' attention and make them enjoy the subject. It was considered, in the light of all the references above, that it would be appropriate to use the games to teach a different rhythm pattern in piano education. A practice was made about a subject that was considered as difficult to teach by explaining, and the benefit of the games was examined.

This study aimed at examining to what extent the walking game activity is effective in teaching of asymmetrical (Aksak) rhythm patterns in piano education. To this aim, we have reviewed the literature on games and asymmetrical rhythms as well as similar practices in piano education and created a design for the study.

METHOD

1-Model

In this study, we planned to conduct an experimental practice. In tandem with the plan, we preferred the experimental design with pre-test post-test control group. We identified the subject students, prepared the conditions and conducted the practice accordingly.

The experimental design can be defined as having an independent variable affect a dependent variable, in other words, manipulation of at least one independent variable by the researcher and association of the change that takes place in the dependent variable with the independent variable, or identification of impacts of this change on the dependent variable (İslamoğlu, 2009; Altunışık et al., 2010). The pre-test post-test control group design is defined by Howitt (1997) as an associated design in which participants are measured before and after the experiment according to a dependent variable. In this measurement, same persons are measured twice on the dependent variable (cited by Büyüköztürk, 2014). On the other hand, Kerlinger (1973) defined it as a design in which the subjects assigned to groups were measured before and after manipulating the variable (cited by Büyüköztürk, 2014).

2- Study Group

The study group was composed of 22 students aged at between 8 and 9 who were also being taught by one of the researchers in a private musical course. The students take a private music course for 1 hour per week as a routine. Throughout the process of this study, each and every student kept on taking his/her private music course individually. Students were given a pre-test by their teacher, and control and experiment groups were formed considering the development and performance of students in the course. Groups were planned to have 11 students per each group. Among all students taking the private piano course, the teacher firstly identified the students at similar ages, taking the piano course for the same period of time and vocalizing similar work pieces according to the books followed. In doing so, 23 students showed the above-mentioned common attributes, and students were assigned to the experiment and control groups (12 students to experiment, 11 students to control group). Students were also given a pre-test to check whether this assignment was healthy or not. Throughout this process, 1 student dropped out as he/she could not attend one of the courses due to his/her sickness, by which each group automatically had 11 students. After determining the common characteristics of the students (students of the same age or very close, students with equal duration of the course, and students playing piano at equal levels in the course), a pre-test was conducted. In the pre-test application, after it was determined that the student levels were equal as in the pre-determination criteria, the distribution was made to the experimental group. The random distribution was used in the assignment process to the experimental group. All the information regarding this process is given below. In addition, volunteerism was taken into account for the subjects participating in the study.

3- Data Collection

Pre-test Process

In the data collection process, firstly, practices and comparisons were made in order to determine equivalence of students in the study group in terms of their skills and development levels. Observations of the practitioner teacher throughout the private course process were also decisive in selection of students (the above-listed selection criteria). The teacher conducted a pre-selection according to some criteria such as age and piano-playing level as well as duration of course-taking. In the pre-selection, attention was paid to issues such as the close age of the students, the equivalent of the piano pieces in the routine program they played in the course, and the same time they attended the course. Students, whose number reduced to 22 from 23 as a result of the pre-selection process, were administered a pre-test (in other words, the equivalence test) in order to ensure homogeneity of experiment and control groups. In the pre-test process, the researchers wrote down and implemented a new piano piece which reflected the characteristics of the piano piece in the piano book of students that was studied by students most recently according to their levels. Performances were video-recorded after studying the piece for 30 minutes per student including the sight-reading. The piece was studied throughout the 30-minute studying period. In this process, the work was divided into sections (movement, phrase, etc.) and it was studied by making simple repetitions with both groups. In the pre-test process, the students in both groups were studied in the same way (first phrase, second phrase and combining them). After studying one phrase, another phrase was studied and these sections were combined and repeated. Students were warned during the study when they played with a wrong rhythm or sound. Performances that were video-recorded were examined and scored by three people while the remaining ones were external experts in this field. The data obtained revealed that the original assignments of the groups were good at the first instance according to the score balance of groups.

Post-test Process

Once the groups were formed, the second step of the experimental practice started with the asymmetrical rhythms. The given piece was studied with the students in the control group for 40 minutes and performances were recorded afterwards. The control group once again studied with the same method as was the case in the pre-test process. The teacher explained the students in the control group what the asymmetrical rhythm was and how it should be played in mathematical terms and a piano piece was played as an example accordingly based on the explanation. Students were warned in this process when they made a mistake in notes or in weights, and the process was continued with simple repetitions. The piano piece studied with the control group was divided into sections as in the pre-test process, and while simple repetitions were applied, the asymmetrical rhythms were tried to be explained with the eighth notes. In the beginning, a rhythm consisting of 4 beats was written, these rhythms were divided into eighth notes and it was explained with the example that an eighth was added to the last eighth cluster to create an asymmetrical rhythm. The subject of the asymmetrical rhythm was taught to the students in the control group by explaining both the sample playing and the notes on the board. In this 40-minute period, the asymmetrical rhythms were explained and the work was studied with the approach expressed above. The explanation about asymmetrical rhythms was also used in the experimental group.

In the study conducted with the experiment group, note clusters forming asymmetrical rhythms were explained; a walking game was played for these note clusters and a practice was conducted to vocalize the melody. Some cards (Shown in Figure 2) with notes on them were prepared for the game played with the experiment group. Three of these cards had two pictures of eighth note clusters while one card had three pictures of eighth note clusters. Students were asked to pick up a card randomly and rhythm patterns appeared according to the cards selected. If the triple cluster was picked up at the beginning, the trio of the asymmetrical rhythm would come first; if not, it would come in the middle or in the end. The rhythm clusters that are formed accordingly were written on the board and studied by hand-clapping. In addition, the clusters were also imitated by walking and the game went so on. In the walking game, the feet were moved as if they were limping when it comes to the triple cluster and the game went so on. The walking game was ended with limping foot-steps according to whether the triple cluster is at the beginning, in the middle or in the end, and students proceeded with studying the piece. With these steps, the student understands how to play lame rhythms without changing the rhythm or speed. In the walking game, students first play the rhythms by hand-clapping according to the notes listed. Then, they play a walking game with the teacher in the room where the lesson is held, as if a foot is limping. The walking game is the steps that repeat the pattern created for the rhythm of the work to be studied. A total of four measures of walking were performed in each application. The teacher studied with the experiment group for 40 minutes, 10-15 minutes of which were saved for the game. In the study conducted with the experimental group, the study approach applied with the control group was also used. Aspects such as the study of the piano piece, the introduction of asymmetrical rhythms were applied exactly the same. In contrast, only the game activity has been implemented.



Figure2. A Sample Rhythm with Note Cards Used by the Students.

Figure 1. Subtext: There are 4 different cards in the figure that contain eighth note clusters. Three of these cards have two eighth note clusters and one has three eighth note cluster. These cards can be arranged in different ways during the game. In the asymmetrical rhythm structure, three eighth note cluster can be displaced. In this picture, three eighth note cluster is placed at the end of the measure.

The very same piece was given to the students in both control and experiment groups, and the process ran without any interaction between the two groups as students studied individually in different days and/or at different hours. The piece used in the post-test process was planned as a piece that was different from the one in the pre-test. In this piece, simple chords were used for the left hand while the emphasis was given primarily to the melody and the asymmetrical rhythm clusters in the melody. The piece was planned in 9/8 as the time signature, consisting of 16 times in total. Convenient chords were

preferred for the left hand while a melody was chosen in line with the level of students in the piece. In the post-test process, playing of students was video-recorded and scored by relevant experts. The piece in the post-test was also composed by the researchers. Just as the first one, the second piece was also composed by considering the melodic and technical structures in the pieces in their books in line with their levels. The researchers also paid attention to whether the students were willing and their parents gave consent for the study. It is emphasized in the literature section that while teaching some subjects in piano education, games make learning enjoyable and this is especially important for young children. In this context, whether the experimental group in the study enjoyed the practice was determined by an additional observation made by the experts watching the videos.

4-Data Analysis and Evaluation

Data Analysis

The data analysis process included categorization of data obtained from the experiment and control groups according to the pre-test and post-test processes, listing of them according to groups and computerization of numerical performance results. Firstly, right after the organization and preparation work, statistical processes were conducted to make comparisons between the two groups. Because the population of the study group was less than 30, non-parametric comparative measurements were preferred. Within this scope, the Mann Whitney U test was used to make an intergroup comparison of the pre-test and post-test processes in itself. In U test measurements, significance level was accepted as $p < .05$. In the design of the study, the pre-test aimed at seeing the difference of students who were divided into groups according to various equivalence parameters (similar ages, duration of education, and level of the piece they play). The pre-test was planned as the equivalence test with the help of numeric values obtained from the first performances. Therefore, main results were obtained by comparing the post-test performances between the two groups after the practice. As the pre-test scores represented equivalence, the differentiation in the post-test scores gave us the real results. However, the difference between the pre-test and post-test results was also analyzed to see the improvement particularly in the experiment group. In this context, the intergroup comparison was made in terms of the differentiation between the pre-test and post-test results. The U test was used for this comparison as well.

[Tabachnick & Fidell \(2013\)](#) stated that the distribution deviated from normality less in larger group samples in regular distribution assumptions of data sets and normality could be ensured in larger groups even though raw data are not available. [Pallant \(2020\)](#) suggested that these types of tests were susceptible to larger samples. Ravid (1994) argued that deviations from normality could occur if the sample was $n < 30$ for various measurements (cited by [Büyüköztürk, et al., 2017](#)). Similarly, [Can \(2017\)](#) pointed to 30 as the base limit and suggested that possibility of normal distribution was lower in groups having less than this number of subjects. Having suggested a lower base limit for this, [Bursal \(2019\)](#) argued that the test used would not yield results that are strong enough if the number is less than 15, and recommended to use non-parametrical test in such circumstances. Based on all these knowledge and data, we preferred the non-parametrical type of analysis as mentioned above because the study group of the study was composed of 22 students. [Pallant \(2015\)](#) suggested that the U test was used to test the existing differences between two different groups on a continuous variable. As distinct from the t test, U test compares the median value of the groups rather than comparing the average of the two groups and checks whether these scores differ in the two groups.

Evaluation of the Performances

The piano performance scoring key developed by [Kurtuldu \(2010\)](#) was used to score performances of students in the study group in pre-test and post-test. The measurement tool was used by those who did the scoring to form numeric values. During the scoring process, field experts (piano teachers) worked by watching the video recordings of each student. The scoring key includes basic assessment steps such as correct note playing, correct rhythm patterns, two-hand synchronization, tempo continuity, nuances and technical skills. The evaluation key used has a structure that includes 6 evaluation steps as above. The distribution of scores in the assessment includes one for correct note playing (20 points), correct rhythm patterns (15 points), two-hand synchronization (10 points), tempo continuity (20 points), nuances (15 points) and technical skills (20 points) there is dispersion. In the study in which the key was

developed, the correlation relationship between the field experts who scored was examined and a high-level and positive relationship was found. In the evaluation process, the average of the grades given by the experts to each student was taken. These averages have been the success scores of the students in the pre-test and post-test process. In the statistical process, these scores were added to the statistics line and the U test was performed using the median values. After scoring the video recordings, the experts also noted the behavior of the students with a different observation form. In the observation form, there are observation items such as "he/she actively participated in the walking game", " he/she was cheerful and pleasant while playing the walking game", " he/she participated in the walking game with enthusiasm", " he/she combined the steps in the walking game with the rhythm patterns", " he/she was happy when he made the right application thanks to the game". In the form, "yes, partially and no" options are marked for the questions. The form was created by the researchers and opinions were taken from 7 experts (a language expert, a measurement expert and 5 music education experts) for content validity. Frequency determination was made for the observation data and results were obtained about the observation.

FINDINGS

In the study, findings of pre-test and post-test were evaluated in relation with each other but separately in terms of their results. Therefore, for the U test, separate tables were formed and interpreted in both measurement steps, and numerical data regarding performance measurements were presented in a separated table as well.

Table 1. Performance Scores of Groups

Group	Student	Pre-test	Post-test
Experiment Group	Student 1	65	80
	Student 2	70	80
	Student 3	70	85
	Student 4	75	80
	Student 5	60	90
	Student 6	77	85
	Student 7	70	80
	Student 8	65	78
	Student 9	60	80
	Student 10	78	85
	Student 11	75	85
Control Group	Student 1	65	70
	Student 2	75	75
	Student 3	70	75
	Student 4	70	75
	Student 5	75	80
	Student 6	70	77
	Student 7	60	60
	Student 8	60	65
	Student 9	65	65
	Student 10	70	70
	Student 11	72	75

The table contains performance scores obtained from the groups in the pre-test and post-test processes. According to these scores, we observed that the scores of both groups were close to each other in the pre-test. On the other hand, scores were different in the post-test, showing an increase in the experiment group while the control group kept their scores partly stable.

Table 2. The U Test Results in the Pre-Test

Groups	N	Mean Rank	Sum of Ranks	SD	U	p
Experiment	9	4,70	23,50	4,97	8,50	,381
Control	9	6,30	31,50			

When we analyzed the U test result for the pre-test process, we could not find and significant difference between the groups according to $p < ,05$ level [$U=8,50$, $p < ,05$]. We figured out no significant

difference when we analyzed the mean rank and sum of ranks between the two groups in the pre-test process. Accordingly, we can suggest that data of both groups are mainly equivalent to each other.

Table 3. *The U Test Results in the Post-Test*

Groups	N	Mean Rank	Sum of Ranks	SD	U	p
Experiment	9	8,00	40,00	5,79	,000	,006
Control	9	3,00	15,00			

In Table 2 which contains the U test results for the post-test process, we found out a significant correlation between two groups according to $p < ,05$ level [$U = ,000 - p < ,05$]. When we analyzed the mean rank and sum of ranks values, we observed that the results were in favor of the experiment group. Accordingly, we can safely suggest that the game implemented in the post-test process led to a significant advantage for the experiment group.

Table 4. *U Test Results regarding the differences between Post-Test and Pre-Test Measurements*

Groups	N	Mean Rank	Sum of Ranks	SD	U	p
Experiment	9	7,70	38,50	9,06	1,50	,016
Control	9	3,30	16,50			

Table 4 compares post-test scores and pre-test scores. According to the comparison results, we found significant difference [$U = 1,50 - p < ,05$]. When we analyzed the mean rank and sum of ranks values, we observed that the significant difference was in favor of the experiment group. As was the case in the post-test process, the difference in scores was in favor of the experiment group.

Table 5. *Observation Results for the Experiment Group*

Items	f		
	Yes	Partly	No
He/She actively participated in the walking game	9	-	-
He/She was cheerful and pleasant while playing the walking game	8	1	-
He/She participated in the walking game with enthusiasm	8	1	-
He/She combined the steps in the walking game with the rhythm patterns	7	2	-
He/She was happy when he made the right application thanks to the game	8	1	-

When the table was examined, it was observed that the experimental group students actively participated in the game. Except for one of the students, it was observed that the others were pleasant and enthusiastic. It was observed that 7 of the students were successful in combining steps and rhythms and were happy when they succeeded.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

The study has been successful with the game method that was implemented experimentally. The successful result is considered at the level of the experiment group that constituted the study group. Students in the experiment group comprehended the subject better than those in the control group. It is associated with the interesting situation created by playing games and the educational games concept. Since the control group kept on studying by classical repetition method in the post-test process, their post-test scores were close to their pre-test scores. However, the difference between pre-test and post-test results of the experiment group is considered to be owing to the method applied. The significant difference between pre-test and post-test results of the two groups is also in favor of the experiment group.

Researchers who had conducted similar practices in the literature achieved close or similar results, too. Eçilmez (2009) used some educational games containing working sheets in young children aged between 6 and 8. He reported that the performance of the student group who played educational games was better than the other group. This result is similar to the performance of experiment group in our study. Lindsay (2006) conducted a total of 76 activities and games under group piano education. She received positive feedbacks from the students at the end of her study. Her study, which was similar to

ours in that both studies contained positive results, was somehow different from ours in study design and data collection method. In another study conducted by [Avcı \(2018\)](#), games were played with computer-supported animations. This study design is different from that of ours. However, the achievements of students regarding learning and recalling are similar.

[Hazar and Altun \(2018\)](#) stated that educational games improve individuals' physical and mental skills, as well as their artistic and aesthetic qualities. [Gündüz et al. \(2017\)](#) similarly stated that educational games contribute to the physical and psychological development of individuals. [Pamukçu and Özer \(2015\)](#) suggested that educational games, especially in the field of music education, can be effective in teaching information and concepts in music. [Özel \(2017\)](#) also emphasized that game activities in music education are effective in teaching musical information and especially rhythm patterns. [Ünal \(2006\)](#), in a study he conducted within the scope of piano education, gave suggestions about teaching technical and theoretical knowledge with piano games. With the same point of view, [Halvaşı \(2017\)](#) stated that during the piano education process, especially in children, educational games are effective in matters of interest in piano, learning technical subjects and recognizing rhythmic elements.

The aforementioned general benefits of the educational game and its effects on piano and music education issues may explain the successful results of our study. The direct effect of educational games, especially on the comprehension of the issues in the piano education process, explains the situation in this study in general. The students in the experimental group learned the subject because they perceived the subject more happily when it came to the game.

Games should be an important part of piano education process particularly in young children. The positive achievement observed in the experiment group in this study points to the impact of game practices in children of early age group. This study is an experimental study with a small group. Conducting similar studies with different experiment groups and repeating them in larger study groups will be critical for overall interpretation of results. Furthermore, extension of game practices to other realms of musical education and trying different learning strategies other than games will contribute in this field.

Piyano Eğitiminde Yürüme Oyunu Etkinliğinin Aksak Ritimlerin Öğretilmesindeki Etkisi

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Özet

Bu araştırmada piyano eğitiminde aksak ritim kalıplarının kavratılmasında yürüme oyunu etkinliğinin ne düzeyde etkili olduğunun incelenmesi amaçlanmıştır. Çalışmada deneysel yöntemden faydalanılmış ve 11'er kişiden oluşan deney ve kontrol grupları oluşturulmuştur. Yaşları 8 ile 9 arasında değişen ve özel bir kursta piyano dersi alan öğrenciler ile yürütülen uygulamada, aksak ritim kalıplarının kavranması için yürüme oyunu etkinliğinden yararlanılmıştır. Ritim kalıplarının yazılı olduğu kartlara ve bu kartlara göre oluşan ritim kalıpların yürüyüş oyunu ile tekrarlanmasına odaklı bir uygulama yürütülmüş, belirlenen piyano eseri kapsamında son performanslar ölçülmüştür. Çalışma öncesinde öğrencilerin seviyelerini anlamak için bir ön test uygulaması da yapılmıştır. Uygulama sürecinde tüm öğrencilerle bireysel olarak çalışılmıştır. Her bir öğrenci ile yaklaşık 30 dakika çalışılmış, öğrenci performansları 6 değerlendirme basamağı içeren bir puanlama anahtarı ile ölçülmüştür. Kontrol grubu ile klasik çalışma yapılmış, deney grubu ile aksak bir yürüme uygulaması yapılmıştır. Uygulamada elde edilen sayısal veriler tablolaştırılmış ve aynı zamanda istatistiksel anlamda analiz de edilmiştir. Ön test ve son test ölçümlerinde Man Whitney U testinden yararlanılmıştır. Kişi sayısı az olduğu için doğrudan parametrik olmayan testler kullanılmıştır. Ölçümler sonucunda son test sürecinde eğitsel oyun yöntemi ile çalışma yapılan deney grubu öğrencilerinin, aksak ritim kalıplarını anlama ve seslendirmede kontrol grubuna göre daha iyi olduğu neticesine varılmıştır.

Anahtar Kelimeler: Müzik eğitimi, Piyano eğitimi, Oyun, Aksak ritimler.



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Genişletilmiş Özet

Problem: Oyun hoş vakit geçirmek üzere bireysel veya birlikte gerçekleştirilen bedensel, zihinsel ve duyuşsal faaliyetler olarak tanımlanabilir (Toprakçı, 2017). Oyun, çocuklara yaparak yaşayarak öğrenme imkânı yaratır ve onların gelişimlerine katkı sağlar. (Jones, 2001: Akt; Gündüz, vd. 2017). Yavuzer'e (1998) göre oyun; çocuğa kolayca öğretilmeyecek konuları çocuğun kendi deneyimleriyle öğrenmesi, yöntemi veya sonucu planlanmadan, yalnızca eğlenmek amacıyla yapılan aktivitelerdir (Akt: Bağcı 2011). Oyunlar çocukları bir amaç doğrultusunda bir arada oynatan ve sosyal becerilerin gelişmesine katkı sağlayan, eğlenceli uğraşlar bütünü ve çocuk için en samimi öğrenme ortamıdır ve çocuklar oynadıkça duyuları/duyguları gelişir ve yetenekleri kendini gösterir. (Yıldırım, 2015; Genç, 2014).

Yukarıda incelenen literatürde, oyunların faydaları (öğrencilerin eğlenmesi, artan ilgi, dikkat çekilmesine yardımcı olma vb.) çeşitli şekillerde ifade edilmektedir. Benzer şekilde, bu çalışmada tartışılan konu, öğrencilerin ilgisini ve öğrenmesini etkileyecek eğlenceli bir aktivite planına odaklanmaktadır. Teorik olarak öğretildiğinde dikkat ve odaklanma sorunları olduğu düşünülen konunun, öğrencilerin ilgisini çekecek ve konudan keyif almalarını sağlayacak bir oyun ile sunulması planlanmaktadır. Pausch (2019), Barsamyán (2019), Zhang (2018), Li (2018), Ercan (2008), Maydwell (2007) dikkatli çalışma, zor bölümler ve tüm bunlar için içeriği iyi planlanmış ama yerine göre farklı aktiviteler ile örgülü piyano eğitiminden söz ederler. Bu bilgiler ışığında piyano eğitimi kapsamında oyun uygulamasının farklı bir ritim kalıbının öğretilmesinde kullanılmasının uygun olduğu düşünülmüştür. Anlatım yolu ile kavratılmasının daha zor olduğu düşünülen konu ile ilgili uygulama yapılmış ve yürüme oyununun bu konu kapsamındaki faydası incelenmiştir.

Bu araştırmada piyano eğitiminde aksak ritim kalıplarının kavratılmasında eğitsel oyun yöntemin ne düzeyde etkili olduğunun incelenmesi amaçlanmıştır. Amaç kapsamında eğitsel oyun literatürü ve piyano eğitimindeki örnek uygulamalar incelenmiş ve çalışma deseni oluşturulmuştur. Bu amaç kapsamında temel olarak aşağıdaki iki soruya yanıt aranmıştır;

- Uygulama öncesinde oluşturulan gruplar, yapılacak çalışma için yeterli denklige sahip midir?
- Senkoplu ritim öğretimi için oyun temelli bir ders sunumu, gruplardaki öğrencilerin başarıları arasında bir fark yaratır mı?

Yöntem: Çalışmada deneysel bir uygulama yapılması planlanmış, plana uygun olarak ön test son test kontrol gruplu deneysel desen tercih edilmiş, uygun çalışma için öğrenciler belirlenerek koşullar oluşturulmuş ve uygulama yapılmıştır.

Çalışma grubunu oluşturan toplam 22 öğrenci yaşları 8 ile 9 arasında değişen ve özel bir müzik kursunda araştırmacılarından biri tarafından ders verilen öğrencilerdir. Öğrenciler rutin olarak haftada 1 saat özel piyano dersi almaktadırlar. Çalışma sürecinde de yine her öğrenci ile normal özel ders saatinde ve bireysel olarak çalışma yapılmıştır. Öğrencilere öğretmenleri tarafından ön test yapılarak ve dersteki gelişimleri ve başarıları da göz önünde tutularak deney ve kontrol grupları oluşturulmuştur.

Ön test sürecinde öğrencilerin takip ettiği piyano kitaplarında yer alan ve düzeylerine göre en son çalıştıkları eserlerdeki özellikleri yansıtan yeni bir eser araştırmacılar tarafından yazılarak uygulanmıştır. Her bir öğrenci ile deşifresi de dâhil toplam 30 dakika çalışılan eser sonunda performanslar kamera kayıt altına alınmıştır. 30 dakikalık çalışma sürecinde herhangi bir farklı yöntem ya da yaklaşım kullanılmadan eser çalışılmıştır. Son test sürecinde Kontrol grubundaki öğrencilere aksak ritmin ne olduğu ve nasıl seslendirilmesi gerektiği sayarak matematiksel anlamda anlatılmış ve anlatıma dayalı örnek bir seslendirme de yapılmıştır. Bu süreçte nota hatası ya da tartım hatası yapıldığında öğrenci uyarılmış, süreç basit tekrarlar ile sürdürülmüştür. Deney grubu ile yapılan çalışmada ise aksak ritimleri oluşturan nota kümeleri, bu kümelere yönelik yürüme oyunu ve bu melodinin seslendirilmesi odaklı uygulama yapılmıştır. Deney grubu ile oynanan oyun sürecinde üzerinde notalar olan kartlar hazırlanmıştır. Bunlardan üç tanesinde üzerinde iki adet sekizlik nota kümesi resmi, bir tanesinde ise üç adet sekizlik nota kümesi resmi yer almaktadır. Öğrencilerden rastgele kartlar seçmesi istenmiş ve seçilen kartlara göre ritim kalıpları ortaya çıkmıştır. Üçlü küme başta seçildiyse aksak ritmin üçlüsü başta, değilse ortada ya da sonra yer almıştır. Buna göre oluşan ritim kümeleri tahtaya yazılmış ve el ile vurularak çalışılmıştır.

Bunların yanında oluşturulan kümeler yürüyüş ile de taklit edilerek oyun devam ettirilmiştir. Yürüyüş oyununda üçlü kümenin olduğu yerde ayaklar aksıyormuş gibi hareket ettirilmiş ve oyun sürdürülmüştür.

Deney ve kontrol grubundaki öğrencilere aynı eser verilmiş, bireysel olarak farkı gün ve/veya saatlerde çalışıldığı için birbirleri ile etkileşim olmadan süreç tamamlanmıştır. Son test sürecinde kullanılan eser ön test sürecindeki farklı bir eser olarak planlanmıştır. Bu eserde sol elde basit akorlar kullanılmış, sağ eldeki melodi ve o melodideki aksak ritim kümelerinin önemi dikkate alınmıştır. Eser toplam 16 ölçüden oluşan, 9/8'lik ölçü sayısı ile yazılmış bir eser olarak planlanmıştır. Eserde sol elde uygun akorlar, sağ elde öğrencilerin seviyesine uygun bir melodi tercih edilmiştir. Son test sürecinde de öğrencilerin seslendirmeleri kamera ile kayıt altına alınmış ve ilgili uzmanlarca puanlanmıştır. Son test uygulamasındaki eser de araştırmacılar tarafından oluşturulmuştur. İkinci eser de ilk eser gibi öğrencilerin kullandığı piyano kitaplarında seviyelerine uygun eserlerdeki melodik ve teknik yapılar dikkate alınarak oluşturulmuştur. Çalışma için öğrencilerin istekli olup olmadıkları ile öğrenci verilerinden izin alınmış olmasına da dikkat edilmiştir.

Veri çözümleme sürecinde deney ve kontrol grubundan elde edilen verilerin ön test ve son test sürecine göre sınıflandırılması, gruplara göre listelenmesi ve rakamsal performans sonuçlarının bilgisayar ortamına aktarılması işlemleri yapılmıştır. Çalışma grubu sayısının 30'un altında olması sebebiyle parametrik olmayan karşılaştırmalı ölçümler tercih edilmiştir. Bu kapsamda ön test ve son test süreçlerini kendi içinde gruplar arası karşılaştırmak için Mann Whitney U testi tercih edilmiştir. U testi ölçümlerinde manidarlık düzeyi için $p < ,05$ seviyesi kabul edilmiştir. Veri setlerinin normal dağılım varsayımlarında büyük gruplu örneklerde dağılımın normallikten daha az saptığı ve ham veriler olmasa da normalliğin büyük sayılı gruplarda sağlanabileceği [Tabachnik ve Fidell \(2013, s80,81,204\)](#) tarafından belirtilmiştir. [Pallant \(2020, s.69\)](#) ise bu tip testlerin büyük örneklemelere karşı duyarlı olduğunu belirtmiştir. Ravid (1994) ise çeşitli ölçümler için örneklem $n < 30$ olması durumunda normallikten sapmalar olabileceğini öne sürmüştür ([Akt: Büyüköztürk, vd. 2017](#)).

Çalışma grubundaki öğrencilerin ön test ve son test sürecine yönelik performanslarının puanlanmasında [Kurtuldu \(2010\)](#) tarafından geliştirilmiş olan piyano performansı puanlama anahtarı tercih edilmiştir. Ölçme aracı puanlamayı yapan kişiler tarafından kullanılarak sayısal veriler oluşturulmuştur. Puanlama sürecinde alan uzmanları (piyano öğretmenleri) her öğrencinin görüntü kayıtlarını izleyerek çalışmışlardır. Puanlama anahtarı, doğru nota çalma, doğru ritim kalıpları, iki el senkronizasyonu, tempo sürekliliği, nüanslar ve teknik beceriler gibi temel değerlendirme adımlarını içermektedir.

Bulgular: Yapılan U testi ölçümlerinde ön test düzeyinde gruplar arasında $p < ,05$ düzeyinde manidar bir ilişki bulunmamıştır. Buna göre gruplar birbirine denktir. Son test sürecinde ise U testi sonuçları deney grubu yönünde manidar bir ilişki vermiştir. Sıra ortalamalarında 5 puanlık, sıralar toplamında ise 25 puanlık fark deney grubunun son testte daha yüksek puanlar aldığını göstermektedir.

Sonuç ve Öneriler: Yapılan çalışmada deneysel olarak çalışılan, konu seçilen oyun yöntemi ile başarılı olmuştur. Elde edilen başarılı sonuç çalışma grubunu oluşturan deney grubu düzeyinde değerlendirilmektedir. Deney grubunu oluşturan öğrenciler konuyu kontrol grubu öğrencilerine göre daha başarılı biçimde kavramışlardır. Bu durum oyun oynamanın ve eğitsel oyun kavramının öğrencilerde yarattığı ilgi çekici durum ile alakalıdır. Kontrol grubu son test sürecinde klasik tekrarlar yaparak çalışmaya devam ettiği için ön test puanlarına yakın puanlar almıştır. Fakat deney grubunda ön test puanları ile son test puanları arasında oluşan fark elde edilen sonuçlara göre kullanılan yöntem ile alakalı olarak düşünülmüştür. Ön test ve son test puanlarının farklarına göre yapılan ölçümlerde de oluşan anlamlı eğilim deney grubu yönündedir.

Eğitsel oyunun yukarıda belirtilen genel faydaları ve piyano ve müzik eğitimi konularına olan etkileri, çalışmamızın başarılı sonuçlarını açıklayabilecek nitelikteki etkenlerdir. Eğitici oyunların özellikle piyano eğitim sürecindeki konuların anlaşılmasına doğrudan etkisi bu çalışmada ortaya çıkan genel durumu da açıklamaktadır. Deney grubundaki öğrencilerin, söz konusu oyun olunca konuyu daha mutlu ve keyifli biçimde algıladıkları için konuyu öğrenmiş olabileceğini söylemek mümkündür.

Oyunlar, özellikle küçük çocuklarla yapılan piyano eğitimi sürecinin önemli bir parçası olmalıdır. Bu çalışmada elde edilen ve deney grubunda gözlenen olumlu başarı, küçük yaş grubu öğrencilerde oyun uygulamalarının etkisine atıf yapmaktadır. Yapılan çalışma küçük gruplu deneysel bir çalışmadır. Bu

gibi çalışmaların farklı deney grupları ile yapılması, hatta daha geniş çalışma grupları ile tekrarlanması, sonuçların genel olarak yorumlanabilmesi için önemlidir. Bunların yanında oyun uygulamalarının müzik eğitiminin farklı alanlarında da artırılması ve oyun haricinde farklı öğrenme stratejilerinin de denenmesi alana katkı sağlayacaktır.

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Appendix Table: Expert Points for the Pre-Test and Post-Test

Groups	Students	Pre-test					Post-test				
		Exp1	Exp2	Exp3	Exp4	Exp5	Exp1	Exp2	Exp3	Exp4	Exp5
Experiment Group	Student 1	65	65	60	70	67	80	80	80	80	80
	Student 2	70	70	70	70	70	80	85	75	80	80
	Student 3	70	72	68	68	72	85	80	85	90	85
	Student 4	75	75	75	75	75	80	80	80	80	80
	Student 5	65	65	60	55	55	85	95	95	85	90
	Student 6	78	75	80	80	75	85	85	88	82	82
	Student 7	70	70	70	70	70	80	80	80	80	80
	Student 8	55	58	65	60	62	75	78	75	80	80
	Student 9	60	60	60	60	60	90	75	75	80	80
	Student 10	80	75	80	75	80	85	85	85	85	85
	Student 11	75	75	75	80	70	85	85	85	85	85
Control Group	Student 1	65	65	65	65	65	75	75	70	68	68
	Student 2	78	70	80	70	80	75	75	75	75	75
	Student 3	70	70	70	72	68	75	75	80	70	70
	Student 4	70	70	70	70	70	75	75	75	75	75
	Student 5	70	75	75	75	80	88	78	80	82	75
	Student 6	70	70	70	70	70	75	80	80	77	75
	Student 7	67	70	65	68	60	60	60	60	60	60
	Student 8	60	60	60	60	60	65	65	65	70	60
	Student 9	65	65	65	65	65	65	65	65	65	65
	Student 10	70	70	70	85	65	75	70	70	65	70
	Student 11	75	70	72	68	70	75	75	75	75	75