

The Visual Memory-Based Memorization Techniques in Piano Education

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Abstract

Problem Statement: Johann Sebastian Bach is one of the leading composers of the baroque period. In addition to his huge contributions in the artistic dimension, he also served greatly in the field of education. This study has been done for determining the impact of visual memory-based memorization practices in the piano education on the visual student. Problem statement is what is the effect of memorization techniques and visual elements usage in reciting skill?

Methods: This research is an empirical study, which was done with the control group. 12 sophomore students from the Bolu University Division of Musical Education were chosen to form the groups. Their levels were determined, and the experiment and control groups were built up with 6 students in each. Following the preliminary test implemented on the experiment and control groups, the students in experiment group were informed about the memorization techniques for 6 weeks. Then the inventions were practiced by them. The students in the control group were not trained or informed about the memorization techniques. At the end of this period, the measurements applied in the preliminary test were re-implemented to the members of both of the groups. The data extracted out in the preliminary and final tests were statistically analyzed.

Findings and Results: As a result of applying the Mann Whitney U and Wilcoxon signed rank tests to the data obtained from the tests, it was found out that there were no differences between experiment and control groups in the level of preliminary tests. Moreover, it was pointed out that in the final test, a substantial difference of level emerged in favor of the experiment group. As a result of this case, it was concluded that the experiment group that had memorization practices acquired positive development in favor of playing the inventions from their own memory. The proposals around this result were introduced in the study.

Keywords: Piano education, learning styles, memorization, invention.

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Introduction

Johann Sebastian Bach was one of the greatest composers of the baroque era, and he made pieces in all musical genres. Bach, who made the greatest pieces in the artistic dimension, also made significant works in the educational area. Bach's works in education have been used constantly at conservatoires, fine arts faculties and education faculties. The most important of all these educational materials are minuets, little preludes- fugues, inventions and prelude- and fugues. These works, which include the basic techniques of piano education, have supreme counterpoint style. Besides their basic qualities, Bach's works are very important in gaining behaviors for piano education. These works play important roles in improving the concept of baroque style; teaching polyphonic perception, ornaments and theme structure; making students comprehend hand coordination and improving students' dominance in touch (Eskioglu 2003). Reasons such as hardness to perceive besides basic gains, the complexity of the harmonic structure, the differences of the relations between the themes and right-left hands' releasing themes in different tunes make these works difficult to memorize. The difficulty of memorizing these works causes difficulty in playing as a whole, anxiety at concerts, confusion in locating the themes and similar negative effects. In this work, diaphonic inventions have been chosen among the educational works of Bach, and visual memorization techniques for students have been explained.

Piano training is one of the sub-branches of musical instrument training. Piano training as a whole includes applicable and theoretical aspects. To achieve a valid level of teaching and learning, the applicable and theoretical areas must be shown to support each other simultaneously in lessons. The famous pedagogue Ernst(1991)divided the content of piano lessons into primary and secondary learning areas:

Primary learning areas:

- Playing decrypted
- Reciting
- Interpretation
- Playing together
- Improvisation
- Composition

Secondary learning areas:

- Playing technique
- Physical training
- Music theory
- Piece analysis
- Music history
- Audio training

In the primary learning area, applicable training is used, but in the secondary learning area, theoretical knowledge is used (Kahramansoy 2006, p.13). Piano training is a form of musical instrument training that is accepted worldwide. Piano training in our country is provided by fine arts colleges, fine arts faculties' music departments, private and public conservatoires, faculties' fine arts music education departments, special courses and private music classes. Notes reading skills are one

of the first skills that an individual acquires in the early years of education. (Ulu, Akyol, 2016, p.226).

There are reasons that piano training is compulsorily provided in the above-mentioned institutions. These reasons include the following: The people playing the piano find opportunities to improve their understanding of polyphony, decryption, musical hearing and harmony, and they are informed about musical forms. In addition to being a self-contained solo instrument, the piano's role in accompanying the sounds of other instruments or the human voice increases its importance in music education (Kutluk 1996, p.4).

In piano training, not every student should be appealed to by the same method, because each student has a different way of learning. Piano training concludes the role of gestures within teacher-student communicative interaction in one-to-one piano lessons (Simones, Schroeder and Rodger 2015, p.1). According to Alpan et al. (2014: 54), "Practice teaching is an important element in teacher education programs and it plays an active role in student teacher's obtaining and improving their teaching skills." For this reason, three types of students could be identified in piano training: visual students, audio students and kinesthetic students.

In the visual student type, the student only cares about what he sees, and he perceives notes as figures. This kind of student is a good note reader. However, he may not be able to repeat a melody when asked. He cannot memorize while listening. He repeats all the details of the notes without mistakes. However, the memorization stage creates problems for this kind of student. This problem could be handled by supporting visual elements (Gokbudak 2003).

In piano training, for the simple memorization of pieces by students, pieces should be determined on the basis of the type of student, and the facilitating techniques should be formed according to their learning attitudes. Piano training's most important aspect is to select student pieces in an accurate manner that is compatible with the targets. Kasap's research (2004, p.6), conducted with 38 professors in seven education faculties, aimed to determine the most used resources in institutions. Resources which have been come up with research are stated with frequencies and percentages of usage. J. S. Bach's pieces are also among these resources. Out of 38 professors, 37 claimed they use Bach's *Der Erste Bach* album, and seven of them claimed they use his inventions in piano training. As a result, it emerged that these pieces play a significant role in piano training. This research about Bach's educational pieces has been restrained only with his diaphonic inventions. So finally, it would be suitable to mention about invention and these pieces' importance in piano training.

The word "invention" began to circulate in 1689 with G. B. Vitali naming one of his pieces, and it gained continuity after Bonporti's violin parties were named as inventions in 1712. The name invention was chosen because it brought innovations to techniques for pieces written for clavier instruments (Eskioglu 2003). J. S. Bach also composed these pieces for the education of his son Friedemann and gathered the inventions and symphonies that he composed into one volume, which includes the

headline a sincere guide for those who like clavichord and especially for those who like to concentrate on learning this instrument; an open and written method for playing two voice cleanly and after furthering a little three voice plainly, flawless and proper; this guide, will not only give nice inventions but also will teach a style for playing good these pieces, especially will provide a harmonious play and finally will give a prior pleasure about art of composing" (Cicekoglu 1958). These pieces that were composed with a contrapuntal style were afterwards called inventions by Forkel. Today, these pieces are used for educational purposes and are called diaphonic and triphonic inventions. As a result, these pieces' authentic names are not inventions (Eskioglu 2003).

Bach composed all of his pieces in forms used by the composers before him; however, he did not stick to this rule for his dual and triphonic inventions. In 1723, he summed these pieces under the title of "Aufrichtige anleitung" (right channeling) for solely educational purposes without any effort to gain sympathy from the public, and these pieces are still serving this need (Buke 2005). The word invention has been written in these pieces because they provide some hints for playing techniques in a short piece. The great genius who composed 15 diaphonic and 15 triphonic inventions used the same tone arrangements for both groups: Do Major, Do minor, Re Major, Re minor, Mi bemol Major, Mi bemol minor, Fa Major, Fa minor, Sol Major, Sol minor, La Major, La minor, Si bemol major and Si bemol minor.

The inventions that usually take place in piano training are not for concert music but are known as etudes for clavier. These pieces are composed for education area in the music world, and the gathered educational qualities in themselves. These pieces' taking place in auditions depends on the preferences of the instructors working at the education faculties or this kind of institution. However, after the researchers conducted in this field general jurisdiction as follows: "Inventions are not concert music, they are much likely educational pieces, technical and institutional difficulties generally arising in the process of teaching/learning of inventions and these pieces difficulty of memorization for concerts" (Eskioglu 2003, p.2).

As we look into inventions, although they are written with replicate letters, each of them has a different structure. In every piece of fiction established by themes, the intermedius and tonal relations are different. The word invention is not limited to inventions in playing techniques as if it were hidden in each piece's structural features. At a certain level, after playing Bach's little preludes, students start with the do major diaphonic invention, because among these pieces, they are both capable of illustrating the main ideas and are enriched with melodic understanding (Buke and Altinel 2006).

The pieces composed for educational purposes have always retained their importance in music education. There could be some difficulties in learning and teaching these pieces. First among these difficulties is following the contrapuntal writing style that is characteristic of the baroque era. For this reason, it is important to study J. S. Bach's life well, to comprehend how he composed these pieces and to apply the contrapuntal writing style well. J. S. Bach systematically put his works

written for the purposes of education in line such as *Das Wohltemperierte*, Little Organ Book and Art of Fugue (Oransay 1986).

As a result of the examination of these Bach's pieces chronologically it is possible to observe that these pieces show a progress within a disciplined and systematic compositional approach. Bach also stated that these pieces are written for education, and when he was writing the first he considered was systematic way of studying. Thus, Bach's pieces, treated with imitation, contrapuntal, two-handed coordination and systematic thinking, have an important place in today's piano training (Eskioglu 2003).

Besides, it is really hard to memorize an invention. However, teaching techniques should be improved to overcome this difficulty. Initially, students' learning domains should be determined very well. In this study, inventions contain memorization techniques that are directed to the visual student type. There are several ways to show about inventions' learning and memorization according to visual learning type. However, a piano teacher could evaluate these ways and methods according to his or her experiences in guiding students. The most central feature of memorization is the structural analysis of the piece. Structural analysis includes formal structure analysis, harmonic structure analysis, melodic structure analysis, hand-position analysis and dynamic structure analysis (Gordon 1995).

According to Matthey (1979), to memorize anything, connotation bonds should be established via analytic transactions. Each part of the passage that is played should stimulate the next melodic, harmonic and emotional structure, and even the next note should be in mind. To provide this, a piece's rhythmic, harmonic, melodic, formal and emotional progression should be analyzed (Eroglu 2010).

It is very important for visual students to examine inventions with formal and harmonical perspectives. A memorization activity could be facilitated by formally expressing the place of themes, interval themes and reverse themes with colored pens. Harmonically, to see themes progress with functions and writing degrees under these functions plays a significant role in students' memories. Besides, it is important to examine the piece completely. While examining a piece completely, the quality we should be careful are themes, because the most difficult thing in memorizing inventions is to locate the themes and their conditions. As there are a lot of themes in the piece, they should be emphasized in line with visually. For this reason, we could color, name or put shapes into themes. Grouping these themes is important for memorization. In this study, while works have been conducted with the experimental group, the below instruments were used. These elements were shaped by the influence of research conducted by Aydin Buke and İpek Mine Altinel (Buke and Altinel 2006).



Fig. 1. Bach BWV 772, Diaphonic invention's General Scheme

Figure 1. Bach BWV 772, Diaphonic invention's general scheme

According to Figure 1, the Do major invention has been completely examined above; the frequent themes, counter themes and other elements are removed from the piece and are grouped with different colors and visual shapes. These kinds of elements have been placed on the note cards to be given to students, and the tonalities have been written under the elements; thus, the memorization of the piece has been facilitated.



Fig. 2. BWV 772, Do major Diaphonic invention's 18 bar General Scheme

Figure 2. BWV 772, Do major diaphonic invention's 18-bar general scheme

According to Figure 2, the scheme's main themes are red, the counter themes are green, the frequent theme comprising four quavers is yellow and the long voices are shown in purple. With these shapes, not only the themes are seen but also the harmonic and formal elements.

Method

Research Design

Since the aim of the research is to understand visual students' memory-based memorization techniques in inventions, a case study is used as the main research approach. This study can be qualified as an experimental research study, and a pre-test/post-test research model with a control group is used in the execution process.

Research Sample

Students participating in this research as part of experimental and control groups have been selected with a learning-styles measure prepared by the Ministry of National Education; thus, a new dimension is prepared for this study. The learning-styles questionnaire was applied to 30 classmates, and as a result 13 students who had a strong visual memory were selected. However, to equate the experimental and control groups, 12 students were included and one student was not included in the research process. For analyzing the questionnaire results, the central distribution measures, frequency and percent measures were used. The results of the applied questionnaire showed that the weighted visual weighted learning style was 43.3percent of students (13), the weighted audio learning style was 30 percent of students(9) and the weighted kinesthetical learning style was 26.7percent of students (8).

Research Instrument and Procedure

The behaviors that need to be gained for reciting in the experimental process have been determined with the help of literature or by the views of experts to establish a surveillance form. The pieces played by experimental and control groups in the research were selected according to the "invention playing order" from Eskioglu's (2003) master's thesis about inventions. Students were made to play the do major and re minor inventions in line with this result. While selecting the experimental and control groups on the basis of learning styles, the levels of piano playing were taken into consideration, attention is shown to have different levels student in both groups. The test group received explanations about the methods of memorizing the works for six weeks.

According to the specific form determined in the pre-testing phase, inventions were applied to all of the students in the experimental and control groups without teaching any methods, and the resulting data were recorded. In the experimental process before and during the process of playing inventions, the memorization

techniques were described, information about the visual elements was given and inventions were played on a regular basis for six weeks. In the post-testing phase, the experimental group that learned the methods of memorization and the control group that did not learn them were given the same pieces to play, and the data were recorded. The data obtained as a result of the pre-test and post-test applications were evaluated and compared. The pre-and post-test records, using the existing observation form, were observed by a researcher and two specialists.

The survey data were obtained by using the SPSS13.0 statistical package program. The difference between the experimental group that was aware of both the memorization and visual elements and the control group that was not aware of them were examined by applying a Mann-Whitney U test. The Mann-Whitney U test is a non-parametric test, which is the non-parametric equivalent of a "t" test (Yazicioglu2011, p.227). Besides, a Wilcoxon sign test was used to differentiate the control and experimental groups in the pre-test and final test. A Wilcoxon test is the non-parametric equivalent of a "t" test (Yazicioglu2011, p.231).

The Problem of the Case Study

In the case study, data were collected by using the following problem: "What are the effects of memorization techniques and visual elements usage in reciting skill?"

In the case study, data were collected first by using the following sub-problem: "What is the effect of memorization techniques in 'gaining reciting behavior, 'rhythm patterns reciting behavior' and 'tonality reciting behavior' for visual students playing invention themes?" In addition, the second sub-problem asked "What is the effect of memorization techniques in 'gaining perception in a right manner of the invention themes, 'remembering the location of invention themes' and 'seeing the piece holistically behavior of the recited invention themes 'that visual students play by reciting behavior?"

Validity and Reliability

To ensure reliability, the data obtained as a result of observation were revised again by two experts; and re-scoring was conducted according to the scale. A Spearman's rank correlation analysis was applied to measure this reliability. According to Yazicioglu (2011, p.261), a "Spearman's correlation is applied at the level of ranking." The pre-test and post-test scores are indicated below.

Table 1.*Correlation between Pre-Test and Final Test Scores Given By the Researchers*

<i>Pre-Test</i>	<i>ResearcherI</i>	<i>ResearcherII</i>	<i>Expert</i>
Researcher I	1	.898*	.788*
Researcher II	.898*	1	.775*
Expert	.788*	.775*	1
<i>Final-Test</i>	<i>ResearcherI</i>	<i>ResearcherII</i>	<i>Expert</i>
Researcher I	1	.750*	.889*
Researcher II	.750*	1	.889*
Expert	.889*	.889*	1

*Correlation meaningful at 0.01 levels

As seen in Table 1, a significant correlation in the positive direction exists between the pre-test scores given by the researcher and two experts participating in the evaluation. In addition, Table 1 shows that a significant correlation in the positive direction exists between the final test scores given by the researcher and two experts participating in the evaluation. According to these results, the performance assessment made by the researcher and two experts can be said to have a high level of reliability.

Data Analysis

Concerning the research, the written reports of multiple case studies were used. The visual students' knowledge-construction processes were investigated with recognizing, building with, and constructing in Bach invention. The patterns which were noticed from the case study are determined and interpreted.

Results

This section includes the research findings on the sub-problems and comments based on these findings. Each sub-problem of the study is given in a separate title. The pre-test and post-test analysis of each sub-problem is shown in the same table and, finally, a separate table for ranking the test findings is given.

Findings and Comments about Status of Winning Methods of Memorization of Themes' Behaviors

Table 2.

Results of the Mann-Whitney U Test of Pre-Test And Post-Test Scores for the Experimental And Control Groups On Gaining "Reciting Notes Themes," "Reciting the Rhythm Patterns Truly" and "Reciting Themes Tonalties Truly" Behaviors

<i>Test</i>	<i>Group</i>	<i>n</i>	<i>Mean rank</i>	<i>Sum of ranks</i>	<i>U</i>	<i>p</i>
Pre test	Experiment	6	6.50	39	18	1
	Control	6	6.50	39		
Post test	Experiment	6	9.42	56.50	.500	.004
	Control	6	3.58	21.50		
Pre test	Experiment	6	6.17	37.00	16	.733
	Control	6	6.83	41.00		
Post test	Experiment	6	9.50	57.00	.000	.003
	Control	6	3.50	21.00		
Pre- test	Experiment	6	6.08	36..50	15.5	.652
	Control	6	6.92	41.50		
Post test	Experiment	6	9.50	57.00	.000	.002
	Control	6	3.50	21.00		

As seen in Table 2, the results of the analysis of the experimental and control groups were different for the pre-test ($U=18$; $p=1$). According to this situation, the experimental and control group students were not aware of the behavior of reciting the notes truly. The result of the analysis between the experimental and control groups for the post-test showed a significant difference in favor of the experimental group ($U =.500$; $p =.004$). This situation could be interpreted as the students in the experimental group improving their reciting after learning memorization techniques; on the contrary, the control group students who did not learn memorization techniques did not gain this behavior.

The results of the analysis of the experimental and control groups were not significantly different for the pre-test ($U=16$; $p=.733$). According to this situation, the experimental and control group students were not aware of the behavior of reciting the rhythms patterns truly. The results of the analysis between the experimental and control groups for the post-test showed a significant difference in favor of the

experimental group ($U=.000$; $p=.003$). This situation could be interpreted as the students in the experimental group improving their reciting of rhythm patterns after learning memorization techniques; on the contrary, the control group students who did not learn memorization techniques did not gain this behavior.

The results of the analysis of the experimental and control groups were not significantly different for the pre-test ($U=15.5$; $p=.652$). According to this situation, the experimental and control group students were not aware of the behavior of reciting themes' tonalities truly. The results of the analysis between the experimental and control groups for the post-test showed a significant difference in favor of the experimental group ($U=.000$; $p=.002$). This situation could be interpreted as students in the experimental group improving their reciting of rhythm patterns after learning memorization techniques; on the contrary, the control group students who did not learn memorization techniques did not gain this behavior.

Table 3.

Results of the Mann-Whitney U Test of Pre-Test And Post-Test Scores for the Experimental and Control Groups On Gaining "Comprehending the Structure of The Themes Accurately," "Remembering the Location of Invention Themes In the Piece" and "Understanding the Themes Holistically" Behaviors

Test	Group	n	Mean rank	Sum of ranks	U	p
Pre test	Experiment	6	6.17	37.00	16	.733
	Control	6	6.83	41.00		
Post test	Experiment	6	9.42	56.50	.500	.004
	Control	6	3.58	21.50		
Pre test	Experiment	6	6.50	39	18	1
	Control	6	6.50	39		
Post test	Experiment	6	9.50	57.00	.000	.003
	Control	6	3.50	21.00		
Pre- test	Experiment	6	6.17	37.00	16	.733
	Control	6	6.83	41.00		
Post test	Experiment	6	9.50	57.00	.000	.003
	Control	6	3.50	21.00		

As seen in Table 3, the results of the analysis of the experimental and control groups were not significantly different for the pre-test ($U=16$; $p=.733$). According to this situation, the experimental and control group students were not aware of the behavior of comprehending the structure of the themes accurately. The results of the

analysis between the experimental and control groups for the post-test showed a significant difference in favor of the experimental group ($U=.500$; $p=.004$). This situation could be interpreted as students in the experimental group improving their accurate comprehension of the structure of the themes after learning memorization techniques; on the contrary, the control group students who did not learn memorization techniques did not gain this behavior.

The results of the analysis of the experimental and control groups were not significantly different for the pre-test ($U=18$; $p=1$). According to this situation, the experimental and control group students were not aware of the behavior of remembering the location of invention themes in the piece. The results of the analysis between the experimental and control groups for the post-test showed a significant difference in favor of the experimental group ($U=.000$; $p=.003$). This situation could be interpreted as students in the experimental group having improved about remembering the location of invention themes in the piece after learning memorization techniques; on the contrary, control group students who did not learn memorization techniques did not gain this behavior.

The results of the analysis of the experimental and control groups were not significantly different for the pre-test ($U=16$; $p=.733$). According to this situation, the experimental and control group students were not aware of the behavior of understanding the themes holistically. The results of the analysis between the experimental and control groups for the post-test showed a significant difference in favor of the experimental group ($U=.000$; $p=.003$). This situation could be interpreted as students in the experimental group improving their holistic understanding of the themes after learning memorization techniques; on the contrary, control group students who did not learn memorization techniques did not gain this behavior.

Findings and Interpretations on the Effect of Memorization Methods for Gaining Theme-Memorization Skills

Table 4.

Wilcoxon Test Results on the Effect of the Control and Experimental Group's Work on the Invention Pieces for Gaining Memorization Skill

Group	Pre-post test	n	Mean rank	Sum of ranks	z	p
	Negative rank	2	2.00	4.00		
Control	Positive rank	3	3.67	11.00	.942	.366
Group	Equal	1				
	Negative rank	0	.00	.00		
Experimental	Positive rank	6	3.50	21.00	2.251	.024
Group	Equal	0				

As seen in Table 4, the result of the observations made in the control group indicate that there is no difference between the pre-test and post-test ($z=.962$;

$p=.336$). Researchers who looked at the results of statistics found that the control group students who did not study the memorization techniques while working with inventions did not gain memorization skills at the end of the research.

According to the observations made in the experimental group, there is a significant difference between the pre-test and post-test ($z= 2.251$; $p=.024$). Researchers who looked at the results of statistics found that the experimental group students who studied the memorization techniques while working with inventions gained memorization skills at the end of the research.

Discussion and Conclusion

The purpose of this study on visual memory-based learning techniques is to determine the effectiveness of the baroque heart play artifacts used in piano education. Students with high learning the power of the visual memory, visual materials to be supported by lectures had no trouble in memorizing the works and the works have been observed as a result be able to play in integrity. Duru (2013), playing the violin and training in memorization-method-based curriculum, has made an experiment based on the performance effectiveness of students. As a result of these experiments, memorization students revealed that increased levels of success play progresses. Students who have a visual memory said that a factor in accelerating their learning methods was keeping in mind various colors and shapes. Luck and Vogel (1997) say that the most effective learning styles for visual memory are realized with a variety of colors and shapes. In line with these views, using certain colors and shapes on the piano sheet music teachers in training, memorization is important in terms of ease of learning and will give students direction. Although a lot of positive opinions for memorization techniques memorization techniques used in training for is available in a negative opinion. Ayvaci and Devecioglu (2002), memorizing and learning due to a mistaken concept of learning through imitation say the future be carried out quickly forgotten cause. These views can be true of course. But students on strong visual memory, use the memorization method, it is also an undeniable fact that students permanently information on.

Memorization techniques based on visual learning significantly enhance students' behaviors including the playing invention themes by heart, reciting the rhythm patterns truly, reciting themes' tonalities truly, comprehending the structure of the themes accurately remembering the location the structure of the invention themes in the piece accurately and understanding the themes holistically.

Inventions are important pieces for piano training. Students often struggle to play these pieces that provide instruction for playing counterpoint style perfectly. Although these works are difficult, they provide people with skills such as technique, musicality and interpretive power, and it adds features such as. For this reason, piano educators think that having inventions in the repertoire will improve a

student's skill level significantly. The learning styles in the field of education have an important place. Each person could have his own learning sphere. Determining the learning sphere of piano students will increase success by changing the shape of the course operation. Visual students should use visual memorization for improving accurate playing behavior in the inventions they recite. The items used in this study are solely researched for visual students. However, educational staff should shape these elements with reference to their own background or other resources. New research studies should be conducted for students having a different learning sphere than visual students.

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Piyano Eğitiminde Görsel Hafızaya Dayalı Ezberleme Teknikleri

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Özet

Problem Durumu: Johann Sebastian Bach, neredeyse her türde eserler veren barok dönemin en büyük bestecilerinden biridir. Sanatsal boyutta çok büyük eserlere imza

atan Bach, eğitim alanında da önemli yapıtlar vermiş, bu alanda büyük hizmetlerde bulunmuştur. Gerek konservatuarlarda, gerek güzel sanatlar fakültelerinde, gerekse eğitim fakültelerinin müzik bölümlerinde Bach'ın eğitim amaçlı bestelemiş olduğu eserler sıklıkla kullanılmaktadır. Eğitim amaçlı yazılan eserlerinin arasında envansiyonlar, barok stil kavramının geliştirilmesinde, polifoni anlayışının öğretilmesinde, süslemelerin öğretilmesinde, tema yapısının öğretiminde, iki el koordinasyonunun kavratılmasında ve tuşe hâkimiyetinin geliştirilmesinde önemli rol oynadığı için önemli olduğu düşünülmektedir. Yapılan bu çalışmada Bach'ın eğitimsel yapıtları arasından iki sesli envansiyonlar seçilmiş, eserlerin görsel öğrenciye yönelik ezberleme tekniklerinden bahsedilmiştir. Böylelikle bu çalışma, piyano eğitiminde önemli yere sahip olan envansiyonların öğrenciler tarafından daha kolay kavranabilmesi, algılanabilmesi, zihinde tutabilmesi ve ezberlenebilmesi açısından önemli olduğu düşünülmektedir. Bu çalışmada, envansiyonları çalışırken görsel hafızaya yönelik ezberleme tekniklerinin kullanılması bu eserlerin kolay öğrenilmesi açısından önemli olduğu vurgulanmıştır. Bu amaç doğrultusunda "piyano eğitiminde ezberleme tekniklerinin ve görsel öğeler kullanılmasıyla ezber çalma becerisi üzerindeki etkisi nedir?" problem durumundan yola çıkılarak alt problemler geliştirilmiş ve sonuçlara ulaşılmıştır.

Araştırmanın Amacı: Bu araştırmanın amacı, Bach'ın eğitim amaçlı bestelediği envansiyonların piyano eğitiminde görsel hafızaya dayalı ezberleme çalışmalarının görsel öğrenci üzerindeki etkisini tespit etmektir. Görsel hafızası yüksek ve düşük olan öğrencilerin ezberleme teknikleri hakkında bilgi oluşturma süreçleri birbirleriyle karşılaştırılmakta ve öğrencilerin görsel hafızasını güçlü yapan yöntemler tartışılmaktadır.

Araştırmanın Yöntemi: Bu çalışma deneysel araştırma niteliğindedir ve araştırmanın yürütülmesinde kontrol gruplu ön test-son test araştırma modeli kullanılmıştır. Çalışmaya katılan deney ve kontrol grubu öğrencileri, Milli Eğitim Bakanlığı tarafından hazırlanan "öğrenme stilleri" ölçeği kullanılarak seçilmiş ve böylece çalışmaya yeni bir boyut kazandırılmıştır. Aynı sınıfta okuyan 30 öğrenciye "öğrenme stilleri" anketi uygulanmış ve sonucunda görsel hafızası güçlü olan 13 öğrenci seçilmiştir. Ancak deney ve kontrol gruplarının eşitlenmesi bakımından 12 öğrenci araştırmaya alınmış, 1 öğrenci ise bu araştırma dışında bırakılmıştır. Yapılan anket sonuçlarının çözümlenmesinde merkezi dağılım ölçülerinden frekans ve yüzdelik ölçmelerden yararlanılmıştır. Deneysel süreçte ezber ile ilgili kazandırılması gereken davranışlar gerek literatür yardımıyla gerekse uzman kişilerin görüşleriyle belirlenerek gözlem formu oluşturulmuştur. Araştırmada deney ve kontrol grubunun kullandıkları eserler, Eskioğlu'nun envansiyonlar üzerine yapmış olduğu yüksek lisans tezinde "envansiyonların kaldırılma sırası" bulgularına göre seçilmiştir. Bu sonuç doğrultusunda öğrencilere do majör ve re minör envansiyonlar kaldırılmıştır. Öğrenme stillerine göre seçilen deney ve kontrol grupları oluşturulurken piyano çalma seviyeleri göz önünde bulundurulmuş, her iki grupta da farklı seviyelerde öğrencilerin bulunmasına özen gösterilmiştir. Deney grubuna 6 hafta boyunca eserlerin ezberleme yöntemleri anlatılarak çalıştırılmıştır. Ön test ve son test uygulamaları sonucu elde edilen veriler karşılaştırmalı olarak

değerlendirilmiştir. Ön test ve son test kayıtları, var olan gözlem formu kullanılarak araştırmacı ve iki uzman kişi tarafından gözlemlenmiştir.

Araştırmadaki veriler SPSS 13.0 istatistiksel paket programı kullanılarak elde edilmiştir. Ezberleme ve görsel öğelerden haberdar olan deney grubu ve bunlardan haberdar olmayan kontrol grubu arasındaki fark Mann-Whitney U testi uygulanarak incelenmiştir. Bunun yanında deney grubunun ön test-son test ve kontrol grubunun ön test-son test arasındaki farkı görmek için Wilcoxon işaret testinden yararlanılmıştır. Gözlem sonucu elde edilen veriler, güvenilirlik sağlayabilmek açısından araştırmacı ve iki uzman tarafından tekrar gözden geçirilmiş ve var olan ölçek üzerinden tekrar puanlama yapılmıştır. Bu güvenilirliği ölçmek için ise Spearman Sıra Korelasyonu Analizi uygulanmıştır.

Araştırmanın Bulguları: Araştırmacı ve iki uzmanın geçerlilik ve güvenilirliği ölçmek için yapılan Spearman Sıra Korelasyonu bulgularında ön test ve son test puanları arasında pozitif yönde anlamlı bir korelasyon olduğunu göstermektedir.

Yapılan Mann Whitney U testi analiz sonuçlarında deney-kontrol grupları arasında ön test için anlamlı bir farkın olmadığı ($U=18$; $p=1$) görülmektedir. Bu duruma göre deney ve kontrol grubundaki öğrencilerinin notaları, ezbere doğru çalabilme davranışından haberdar olmadığı görülmektedir. Yapılan Mann Whitney U testi analiz sonuçlarında deney-kontrol grupları arasında son test için deney grubunun lehine anlamlı bir fark olduğu ($U=.500$; $p=.004$) görülmektedir. Bu durum, deney grubundaki öğrencilerin ezberleme tekniklerini öğrendikten sonra notaları ezbere çalabilme davranışı kazanımında olumlu yönde gelişme gösterdiği, ezberleme teknikleri öğretilmeyen kontrol grubunun ise bu davranışı kazanamadığı şeklinde yorumlanabilir.

Yapılan Wilcoxon testi bulgularında kontrol grubu için yapılan gözlem sonucunda ön test ve son test arasında fark yoktur. ($z= .962$, $p=.336$) İstatistiksel sonuçlara bakıldığında envansiyon eserlerini çalışırken ezberleme ile ilgili çalışmaları yapmayı sadece nota çalmaya devam eden kontrol grubunun çalışma sonunda ezberleme becerisinin kazanılmadığı görülmüştür. Deney grubunun yapılan gözlem sonucunda ise ön test ve son test arasındaki gelişim düzeyi anlamlıdır. ($z= 2,251$, $p=.024$) İstatistiksel sonuçlara bakıldığında envansiyon eserlerini çalışırken ezberleme ile ilgili çalışmaları düzenli olarak yapan ve ezberleme tekniklerine göre eseri izleyen deney grubunun çalışma sonunda ezberleme becerisinde başarı sağladıkları görüşmüştür.

Araştırmanın Sonuçları ve Önerileri: Görsel öğrenmeye dayanan ezberleme teknikleri, öğrencilerin, envansiyon temalarındaki notaları ezbere çalabilme davranışını önemli ölçüde geliştirmektedir. Görsel öğrenmeye dayanan ezberleme teknikleri, öğrencilerin, envansiyon temalarının ritim kalıplarını ezbere doğru uygulayabilme davranışını önemli ölçüde geliştirmektedir. Görsel öğrenmeye dayanan ezberleme teknikleri, öğrencilerin, envansiyon temalarının tonalitelerini ezbere doğru çalabilme davranışını olumlu yönde geliştirmektedir. Görsel öğrenmeye dayanan ezberleme teknikleri, öğrencilerin, envansiyon temalarının yapısını doğru kavrayabilme davranışını büyük ölçüde geliştirmektedir. Görsel öğrenmeye dayanan ezberleme

teknikleri, öğrencilerin, envansiyon temalarının eser içerisindeki yerlerini hatırlayabilme davranışını önemli ölçüde geliştirmektedir. Görsel öğrenmeye dayanan ezberleme teknikleri, öğrencilerin, envansiyon temalarını bütün olarak görebilme davranışını büyük ölçüde geliştirmektedir.

Envansiyonlar piyano eğitiminde önemli eserlerdir. Kontrpuan stilini mükemmel bir biçimde sağlayan bu eserleri çalarken öğrenciler zorlanmaktadır. Ancak bu eserler zor olmasına rağmen kişiye teknik, müzikalite, yorum gücü ve bunun gibi özellikleri kazandırmaktadır. Bu yüzden piyano eğitimcileri envansiyonları repertuarlarına alıp öğrenciye çaldırmaları öğrencinin seviyesinde önemli ölçüde artış olabileceği düşünülmektedir. Öğrenme stilleri konusu eğitim alanında önemli bir yere sahiptir. Her kişinin farklı bir öğrenme alanı olabilir. Piyano çalan öğrencilerin öğrenme stilleri belirlenerek o öğrenme şekline göre dersin işleyiş şeklini değiştirerek başarının artacağı düşünülmektedir. Görsel öğrenciler, ezbere çaldıkları envansiyonların içerisindeki bütün öğeleri doğru çalabilme davranışlarını geliştirmeleri açısından, görsel ezberleme yaklaşımını kullanmalıdırlar. Bu araştırmada kullanılan öğeler sadece görsel öğrenciler için çalışılmıştır. Ancak öğretim elemanları bu öğeleri kendi eğitim deneyimlerine veya başka kaynaklara başvurarak şekillendirmelidirler. Görsel öğrenme stiline uygun olan öğrenciler haricinde başka öğrenme alanına sahip öğrenciler için de buna benzer yeni çalışmalar yapılmalıdır.

Anahtar Sözcükler: Piyano eğitimi, öğrenme stilleri, ezber çalma, envansiyon.