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Relationship Between Piano Performance Self-efficacy Perceptions and Exam Anxieties of Music Teacher Candidates

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Abstract

Self-efficacy perception and exam anxiety which are evaluated within scope of affective dimensions of piano performance affect the quality of performance. It is expected for music teacher candidates to be raised as teachers having high level of self-efficacy perception and having control over their level of anxiety with respect to their piano performance successes. This study has aimed to determine piano performance self-efficacy perceptions and exam anxiety levels of music teacher candidates and the relationship between these two variables. Relational scanning model has been used in the research and the sampling was constituted of total number of 718 music teacher candidates. Data have been gathered with personal information form, piano performance self-efficacy scale, and exam anxiety inventory. The data being obtained have been analyzed with Pearson Correlation Coefficient, One Way Variance Analysis (ANOVA) Welch test, Scheffe test, and Games Howell test. Research results have shown that piano performance self-efficacy perceptions and exam anxieties of music teacher candidates were at medium level. It has been determined that there was a negative directional meaningful and medium level of relationship between piano performance self-efficacy perceptions and exam anxieties of music teacher candidates. Within context of research results, program development studies can be made to improve piano performance self-efficacy perception and to reduce exam anxiety level and with teacher assessments and peer evaluation studies, the impact of constructive criticisms can be examined.

Keywords: Music teacher training, piano performance, self-efficacy, exam anxiety, affective dimensions in relation to piano performance.

Müzik Öğretmeni Adaylarının Piyano Performansı Özyeterlik Algıları İle Sınav Kaygıları Arasındaki İlişki

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Öz

Piyano performansının duyuşsal boyutları kapsamında ele alınan öz yeterlik algısı ve sınav kaygısı, performansın niteliğini etkilemektedir. Müzik öğretmeni adaylarının, piyano performans başarıları bakımından özyeterlik algısı yüksek, kaygı düzeyini kontrol altında tutabilen öğretmenler olarak yetiştirilmesi beklenmektedir. Bu çalışma müzik öğretmeni adaylarının piyano performansı öz yeterlik algılarının ve sınav kaygılarının düzeyini ve bu iki değişken arasındaki ilişkiyi belirlemeyi amaçlamıştır. Araştırmada ilişkisel tarama modeli kullanılmış, örnekleme toplam 718 müzik öğretmeni adayı oluşturmuştur. Veriler kişisel bilgi formu, piyano performansı öz yeterlik ölçeği ve sınav kaygısı envanteri ile toplanmıştır. Elde edilen veriler Pearson Korelasyon Katsayısı, tek yönlü varyans analizi (ANOVA) Welch testi, Scheffe testi ve Games Howell testi ile analiz edilmiştir. Araştırma sonuçları, müzik öğretmeni adaylarının piyano performansı öz yeterlik algılarının ve sınav kaygılarının orta düzeyde olduğunu göstermiştir. Piyano performansı öz yeterlik algısı, piyano eğitimine erken yaşta başlayan, günlük piyano çalışma süresi 2 saatten fazla olan, piyano başarı notu yüksek olan ve bireysel çalgısı piyano olan müzik öğretmeni adayları lehine anlamlı bir fark göstermiştir. Müzik öğretmeni adaylarının piyano performansı öz yeterlik algısı ile sınav kaygıları arasında negatif yönde anlamlı ve orta düzeyde bir ilişki olduğu tespit edilmiştir. Araştırma sonuçları bağlamında, piyano performansı öz yeterlik algısını arttırmaya ve sınav kaygı düzeyini azaltmaya yönelik program geliştirme çalışmaları yapılabilir, öğretmen değerlendirme, akran değerlendirme çalışmaları ile yapıcı eleştirilerin etkisi incelenebilir. Piyano performans sürecine ilişkin çalışma alışkanlıkları ve öz düzenleme ile ilgili programların düzenlenmesine ve bu programlarının sinanmasına yönelik deneysel araştırmalar yapılabilir.

Anahtar Kelimeler: Müzik öğretmeni eğitimi, piyano performansı, öz yeterlik, sınav kaygısı, piyano performansında duyuşsal boyutlar.

Introduction

Performance is related with an instant situation and this moment develops within responsibility scope of a long process and very different dimensions, constituted of pre-performance time, performance moment, and post-performance time. Self-efficacy and exam anxiety, being among the dimensions significantly emphasized in relation to piano performance during music education, bear importance during professional preparation process of students having education in the area of music teaching (Nacakcı and Dalkıran, 2011). It is expected for music teacher candidates to be raised as teachers having high level of self-efficacy perception and being able to control their anxiety level (Kurtuldu, 2009; Sarıkaya, 2019).

Music can only exist during the moment of performance and it is not possible for this moment to be perfect due to its nature. Hence, there can even be important differences between performances relating with the same work (Juslin & Timmers, 2010). When this instant process depending on determinant dimensions such as personality traits, self-efficacy perception, self-esteem, motivation, performance anxiety, perfectionism level, self-regulation skills, emotionality, performance evaluation, work strategies, success target orientation (Sinden, 1999; McCormick and McPherson, 2003; McPherson and McCormick, 2006; Özmenteş, 2008; Çırakoğlu, 2013; Özmenteş, 2013; Burak, 2014; Hewitt, 2015; Aydın Uygun, 2016; Baydağ and Alpagut, 2016; Orejudo et al., 2016; Özmenteş, 2016; Stokes, 2016; Yağışan and Özmenteş, 2016; Girgin, 2017; Gonzalez et al., 2017; Topcan and Gürşen Otacıoğlu, 2018; Sarıkaya, 2019) is well managed, it becomes possible to attain performance success. In this process, variety and severity of dimensions affecting instrument performance in general and the piano performance in a specific way, affects the quality of performance.

Piano performance is composed of a difficult process requiring mental and physical activity together with aesthetical and artistic values. In this structure, the mind realizes these activities by directing the whole body and mainly the pianistic organs extending from the shoulders towards to fingertips in a correct way, after perceiving and grasping the musical image by reading the notes written in two different strings according to the G and F key system (Ömür and Gültek, 2013). In this respect, in order for piano playing people to realize their performances in a successful way, it is required for

them to have a strong anatomical structure and certain physical and mental skills and to overcome musical and technical difficulties systematically through the years (Yağısan, 2002; Gün, 2014).

Besides being a physical action, piano performance is also accepted as being a cognitive action and this action is affected from the person's attitude, confidence and self-efficacy belief (Gün, 2014). Self-efficacy belief is defined as the perception of an individual regarding his own capacities, in relation to his performing the actions required to realize a performance and to organize these actions (Bandura, 1986, p.391). Students having high level of self-efficacy belief can be successful during their piano performances, their anxiety levels get reduced, and their self-confidence levels increase. Students with low level of self-efficacy belief, experience the fear that they will not be able to demonstrate what is given during their piano performance as desired and accordingly, their self-confidence gets reduced and their anxiety levels increase (Gün, 2014).

The anxiety felt by music teacher candidates that they will play wrongly while demonstrating their performances at the exams when their piano performances will be evaluated, can affect their performance success negatively (Kurtuldu, 2009). Exam anxiety is usually expressed as behavioral patterns that affect the effort shown in the school environment (Kirkland and Hollandsworth, 1980). Generally the individuals having high level of exam anxiety, have emotions that their self-existence is under threat under exam conditions. Furthermore, individuals with high level of exam anxiety can take on nervous, aggressive and anxious moods not only under exam or assessment conditions but also when they will make a speech within a group. Due to these reasons, they are easily distracted and consistently impose negative thoughts on themselves (Aysan et al., 2001). These reactions at cognitive level can also create negative impact with respect to performance and this can be at a more extreme level than excitement dimension with respect to affective aspects (Sarason, 1988).

While high level of exam anxiety level causes for situations such as tremor in the hands, sweating, chills, increased pulse, tightness, dry mouth, muscle tension, that can physically interrupt with piano performance to arise, it also brings mental and emotional obstacles such as forgetfulness, inability to transfer, difficulty of attention and focus, negative self-perception, anxiety, and hopelessness (Köknel, 1982; Kuyucu, 2001). These obstacles reduce piano

success of music teacher candidate, by negatively affecting his performance during the exam (Piji Küçük, 2010).

There are various researches relating with piano performance self-efficacy and exam anxiety in music education. McCormick and McPherson (2003) have asserted that self-efficacy was the most important determinant of performance. In another study, the same researchers have compared music performance exam types with two different degrees and they have determined that self-efficacy was the best determinant of success in exams, again (McPherson and McCormick, 2006). In the study conducted by Pirlibeylioğlu (2015), it has been stated that piano performance self-efficacy perceptions of students were at medium level and that they avoided performing in front of a community. Jelen (2017) has determined that as piano performance self-efficacy level increased, level of music performance anxiety got reduced. Babacan and Babacan (2017) have state that students with high level of piano performance self-efficacy level were more conscious about improving their performances. Piji Küçük (2010) has determined that there was a negative directional meaningful relationship between instrument training successes and exam anxiety levels of music teacher candidates. Based on the study conducted by Kurtuldu (2009), exam anxieties of piano students studying in music teaching department were examined and it was reached to a conclusion that piano students did not associate the exam anxiety they experienced only with regular and programmed working but rather with the instant mistakes they made or with the idea that they may get a low grade and their concern for passing the class which thereby affected their exam anxiety. In the researches being made in relation to exam anxiety levels of students getting music education, it was determined that music department students felt medium level (Nacakcı and Dalkıran, 2011; Yücel, Şen and Şen, 2019) and high level (Kurtuldu and Aksu, 2015) of exam anxiety.

The above research results revealed that the piano performance self-efficacy perceptions and exam anxiety of music teacher candidates are quite determinant variables in terms of their vocational education and play a role on their success. In this study, too, the lack of knowledge concerning the music teacher candidates' piano performance self-efficacy perceptions and exam anxiety levels constitute the problematic of the research. As a result of literate review being done, it was seen that number of studies being conducted in

relation to piano performance self-efficacy perception of music teacher candidates was few and that there were no studies investigating the relationship between variables of piano performance self-efficacy performance and exam anxiety. In this regard, it is hoped that the findings obtained from the research can make contribution to piano lesson program at Music Education Head Department Branches and to the music teacher candidates. Determining the strong and weak aspects relating with piano performance self-efficacy performances and exam anxieties of music teacher candidates, can create awareness with regards to new practices and arrangements in relation to the program. By attracting attention to negative feelings experienced by music teacher candidates due to exam anxiety during piano performance evaluation exams, measures can be brought up to reduce exam anxiety and studies can be carried out in relation to the training to be given and the planning works to be done. It is thought that the results of the study will shed light on measures to reduce test anxiety, trainings to be given and plans to be made, by drawing attention to the negative emotions created by exam anxiety that music teacher candidates experience in exams during which piano playing performance is evaluated.

This research has aimed at revealing which level music teacher candidates' piano performance self-efficacy perceptions and exam anxieties are at and whether there is a meaningful relationship between these two variables or not. Furthermore, it was worked to determine whether piano performance self-efficacy perceptions created a meaningful difference as per the variables of daily piano working time, individual instrument type, age of starting piano education and piano lesson academic achievement grade or not. The sub-aim questions of the study are as follows:

Regarding the students of Music Education Department;

1. At what level are their self-efficacy perceptions towards piano playing performance?
2. Do their self-efficacy perceptions towards piano playing performance;
 - a) Demonstrate a significant difference according to the individual instrument type?
 - b) Demonstrate a significant difference according to the starting age of piano education?
 - c) Demonstrate a significant difference according to daily piano practice duration?

- d) Demonstrate a significant difference in terms of academic success regarding playing the piano?
3. At which level are their concerns and anxieties related with the exams?
4. Is there a significant correlation between self-efficacy scores for piano performance and test anxiety scores?

Methods

Research Design

In this research, relational scanning model has been used to determine whether there is a meaningful relationship between piano performance self-efficacy perceptions and exam anxiety levels of music teacher candidates and whether piano performance self-efficacy perception created a difference with respect to the variables of daily piano working time, individual instrument type, age of starting piano education and piano lesson academic achievement grade or not. Scanning models are tools used for a research approach that aims to describe the history of and/or current situation of a phenomenon as it exists. Correlational survey models are research models that aim to determine the presence and / or degree of change between two or more variables (Karasar, 2002).

Research Sample

For the research sampling, among the seven regions of Turkey, a university having Education Faculty Fine Arts Education Music Training Head Department Branch has been selected. In this context, 718 music teacher candidates studying in 1st, 2nd, 3rd and 4th classes of Education Faculty Fine Arts Education Music Training Head Department Branch at Marmara University, Karadeniz Technical University, Mehmet Akif Ersoy University, Harran University, Van 100. Year University, Muğla Sıtkı Koçman University and Niğde Ömer Halis Demir University have constituted the research sampling. Table 1 shows distribution of the sample group.

Table 1. Descriptive Values of the Sample Group

Variable	<i>f</i>	%
Grade Level		
1.Grade	183	25.5%
2.Grade	180	25.1%

3.Grade	168	23.4%
4.Grade	187	26.0%
Gender		
Male	272	37.9%
Female	446	62.1%
Starting Age For Piano Training		
Age range between 6-13	101	14.1%
Age range between 14-17	412	57.4%
18 years old and above	205	28.6%
Individual Instrument Type		
Piano	55	7.7%
String Instrument	270	37.6%
Brass Instrument	114	15.9%
Guitar	107	14.9%
Instrument with three double strings	91	12.7%
Other	81	11.3%
Piano Class Academic Success Grade		
AA-BA (100-85)	287	40.0%
BB-CB (84-75)	175	24.4%
CC-DC (74-55)	158	22.0%
DD-FD (54-45)	56	7.8%
FF (44-0)	42	5.8%
Daily Piano Practice Duration		
Less than half an hour	252	35.1%
Between half an hour and one hour	264	36.8%
Between 1 hour and 2 hour-long	147	20.5%
More than 2 hours	55	7.7%

As seen in Table 1, 37% of the students are male and 62.1% are female. Major part of sampling is composed of students who have started with their piano education between ages of 14-17, constituting a ratio of 57.4%. 37.6% of the students play a string instrument, 15.9% of them play a wind instrument, 14.9% play guitar, 12.7% play bağlama, 7.7% of them play piano and 11.3% of them play other individual instruments. According to their piano lesson academic success grades, students have shown a distribution with the rates as 40% AA-BA (100-85); 24.4% BB-CB (84-75); 22% CC-DC (74-55); 7.8% DD-FD (54-45) and 5.8% FF (44-0). Regarding daily piano working times, 36.8% of students work half an hour-1 hour a day, 35.1% of them work for less than half an hour, 20.5% of them work for 1-2 hours and 7.7% of them work for more than 2 hours.

Research Instruments and Procedures

“Piano Performance Self-Efficacy Scale” constituting of 3 sub-dimensions with 25 items, being developed by Gün (2014) with the aim to determine at which level music teacher candidates considered themselves to be sufficient in relation to piano performances. First dimension of the scale was evaluated under the name of “technical level perception”, reflecting the level at which the student considered his piano technics to be adequate, second dimension of scale was evaluated under the name of “stage anxiety perception”, reflecting the particulars felt by the student in relation to his piano performance as he played in front of a community and the third dimension of scale was evaluated under the name of “performance level perception” reflecting the opinions of student about his own piano performance. Five-point Likert-type response options were used for the scale. Cronbach Alpha reliability coefficient of the scale was determined as .94 (Gün, 2014). Within scope of current research, Cronbach Alpha reliability coefficient calculated as per the sampling group of Piano Performance Self-Efficacy Scale sampling group (n=718) was calculated as .869, Cronbach Alpha Reliability Coefficient relating with technical level perception sub-scale was calculated as .731, Cronbach Alpha Reliability Coefficient relating with stage perception sub-scale was calculated as .690, and Cronbach Alpha Reliability Coefficient relating with performance level perception sub-scale was calculated as .844. These results show that the scores obtained from the scale are sufficient in terms of reliability.

“Exam Anxiety Inventory” which is used for determining exam anxiety levels of music teacher candidates has been developed by Spielberger and the Inventory has been adapted to Turkish by Öner and Albayrak in year 1985 (Öner, 2006, p.873). Exam Anxiety Inventory is a test constituted of 20 items in total, which measures the negative emotions and thoughts during the exam and after the exam. Exam Anxiety Inventory is composed of two sub-tests namely being “Worry” and “Emotionality”. Sub-test of worry focuses on cognitive aspect of a person and it generally covers the negative opinions of the person relating with himself and his negative internal speeches relating with his failure and unskillfulness. Sub-test of emotionality is related with emotional and emotive sub-aspect of exam anxiety. Physical experiences such as excessive sweating, increased heart rate and nausea relating with a person

are symptoms of emotionality (Öner, 1990). Regarding the reliability of inventory within context of current study, Cronbach Alpha internal consistency coefficients for the items determined for each sub-test and the inventory in general were determined such that for sub-test of worry it was .854, for emotionality sub-test it was .859 and for the general inventory it was .918. These results show that each of the sub-tests and the general inventory have acceptable level of internal consistency.

Personal Information Form used in the research is comprised of four questions in total with the aim to obtain information about individual instrument type, age of starting piano education, daily piano working time and piano lesson academic success score.

Data collection tools that are used in the research have been applied during spring semi-year in the academic years of 2019-2020 by getting necessary permits from the universities. Prior to the application, students have been informed about the context of data collection tools and it has been defined that data would only be used for the purpose of research. Students have replied to the scales within fifteen minutes time.

Data Analysis

Pearson Correlation Coefficient has been used to determine whether there was a relationship between piano performance self-efficacy perceptions and exam anxiety levels of music teacher candidates or not. One way variance analysis (ANOVA) was made in order to determine whether piano performance self-efficacy perception level created any difference or not with respect to the variables of daily piano working period, individual instrument type, age of starting with piano education, and piano lesson academic success score. In situations where the variances were not homogeneous, Welch test was considered. In this research, Scheffe test was applied in case the variances were equal and Games Howell test was applied if the variances were not equal.

Results

In this part of the research, findings and remarks obtained as a result of analysis of data being collected from music teacher candidates by means of scales are presented.

Findings Regarding Piano Performance Self-Efficacy Levels of Music Teacher Candidates

With the aim to determine piano performance self-efficacy perception levels of music teacher candidates, descriptive statistical values that are calculated based on piano performance self-efficacy perception total scores and sub-dimensional scores are given in Table 2.

Table 2. Descriptive Statistical Values of Scores Obtained from Piano Performance Self-Efficacy Scale

Scale and Sub-Dimensions	<i>n</i>	\bar{X}	<i>ss</i>	Min	Max
Technical Level Perception	718	25,51	5,34	8	40
Stage Anxiety Perception		20,27	5,11	7	35
Performance Level Perception		35,55	7,28	10	50
Piano Performance Self-Efficacy Perception		81,34	14,28	29	125

According to Table 2, highest score of music teacher candidates obtained from Piano Performance Self-efficacy Scale was 125 and the lowest score was 29. It is seen that arithmetical average of piano performance self-efficacy scores was 81.34. According to this score average it can be stated that piano performance self-efficacy perceptions of music teacher candidates is at medium level. When the average scores of music teacher candidates obtained from sub-dimensions are reviewed, it can be stated that their technical level perceptions (\bar{X} =25,51) and stage anxiety perceptions (\bar{X} =20,27) are at medium level and that their performance level perceptions (\bar{X} =35,55) are at high level.

Findings Regarding the Differences of Music Teacher Candidates' Piano Performance Self-Efficacy Levels According to the Individual Instrument Type

One Way Variance Analysis (One-Way ANOVA) has been conducted with the aim to determine whether piano performance self-efficacy perception total scores and sub-dimensional score average of music teacher candidates showed a meaningful difference with respect to individual instrument type or not.

Table 3. One-Way Variance Analysis (ANOVA) Results relating with Music Teacher Candidates' Piano Performance Self-Efficacy Perception Scores as per individual instrument type

Scale and sub-dimensions	Individual instrument	n	\bar{X}	Ss	Sd	F	p
Technical level perception	Piano	55	28,02	6,33	5	3,843	0,00*
	String inst.	270	25,75	5,05			
	Wind inst.	114	25,18	5,09			
	Guitar	107	24,37	4,96			
	Bağlama	91	24,99	5,52			
	Other	81	25,58	5,67			
	Total	718	25,51	5,34			
Stage anxiety perception	Piano	55	22,64	5,50	5	4,282	0,00*
	String inst.	270	20,09	4,91			
	Wind inst.	114	19,80	5,28			
	Guitar	107	19,10	4,26			
	Bağlama	91	20,98	5,57			
	Other	81	20,68	5,27			
	Total	718	20,27	5,11			
Performance level perception	Piano	55	38,49	7,34	5	4,492	0,00*
	String inst.	270	36,33	7,16			
	Wind inst.	114	34,47	7,38			
	Guitar	107	33,93	6,63			
	Bağlama	91	34,49	7,83			
	Other	81	35,84	6,90			
	Total	718	35,55	7,28			
Piano performance self-efficacy perception	Piano	55	89,15	15,51	5	5,794	0,00*
	String inst.	270	82,16	13,71			
	Wind inst.	114	79,46	13,76			
	Guitar	107	77,40	12,40			
	Bağlama	91	80,46	15,48			
	Other	81	82,10	14,86			
	Total	718	81,34	14,28			

*p<.05

According to the results given in Table 3, piano performance self-efficacy perception total score average and sub-dimensional score average of music teacher candidates have created a meaningful difference with respect to individual instrument type ($p < 0.05$). Following this finding, in order to determine the individual instrument type from which this meaningful difference has emerged, it was passed on to complementary post-hoc analysis technics and complementary Scheffe Test results have been given in Table 4.

Table 4. Results of Scheffe Test conducted to determine between which sub-groups there is a differentiation regarding piano performance self-efficacy perception scores of music teacher candidates as per the variable of individual instrument

Scale and sub-dimensions	(I) Instrument lesson	(J) Instrument lesson	Average difference(I-J)	Standard error	p
Technical level perception	Piano	String inst.	2,270	0,782	0,14
		Wind inst.	2,834	0,868	0,06
		Guitar	3,644*	0,877	0,00
		Bağlama	3,029*	0,903	0,05
		Other	2,438	0,923	0,22
	Guitar	Piano	-3,644*	0,877	0,00
		String inst.	-1,374	0,604	0,40
		Wind inst.	-0,810	0,711	0,94
		Bağlama	-0,615	0,754	0,98
		Other	-1,206	0,778	0,79
	Bağlama	Piano	-3,029*	0,903	0,05
		String inst.	-0,759	0,641	0,92
		Wind inst.	-0,195	0,743	1,00
		Guitar	0,615	0,754	0,98
		Other	-0,591	0,807	0,99
Stage anxiety perception	Piano	String inst.	2,551*	0,748	0,04
		Wind inst.	2,838*	0,830	0,04
		Guitar	3,534*	0,839	0,00
		Bağlama	1,658	0,864	0,60
		Other	1,957	0,884	0,43
	String inst.	Piano	-2,551*	0,748	0,04
		Wind inst.	0,287	0,565	1,00
		Guitar	0,982	0,578	0,72
		Bağlama	-0,893	0,613	0,83
		Other	-0,594	0,641	0,97
	Wind inst.	Piano	-2,838*	0,830	0,04
		String inst.	-0,287	0,565	1,00
		Guitar	0,695	0,681	0,96
		Bağlama	-1,180	0,711	0,74
		Other	-0,881	0,735	0,92
	Guitar	Piano	-3,534*	0,839	0,00
		String inst.	-0,982	0,578	0,72
		Wind inst.	-0,695	0,681	0,96
		Bağlama	-1,875	0,721	0,24

Performance level perception	Piano	Other	-1,576	0,745	0,48
		String inst.	2,161	1,064	0,53
		Wind inst.	4,017*	1,181	0,04
		Guitar	4,566*	1,194	0,01
		Bağlama	3,996	1,229	0,06
	Wind inst.	Other	2,651	1,257	0,49
		Piano	-4,017*	1,181	0,04
		String inst.	-1,856	0,804	0,38
		Guitar	0,548	0,968	1,00
		Bağlama	-0,021	1,011	1,00
	Guitar	Other	-1,366	1,045	0,89
		Piano	-4,566*	1,194	0,01
		String inst.	-2,404	0,822	0,13
		Wind inst.	-0,548	0,968	1,00
		Bağlama	-0,569	1,026	1,00
Piano performance self-efficacy perception	Piano	Other	-1,914	1,060	0,66
		String inst.	6,982*	2,078	0,05
		Wind inst.	9,689*	2,306	0,00
		Guitar	11,744*	2,330	0,00
		Bağlama	8,684*	2,399	0,02
	String inst.	Other	7,047	2,454	0,14
		Piano	-6,982*	2,078	0,05
		Wind inst.	2,707	1,569	0,70
		Guitar	4,761	1,604	0,12
		Bağlama	1,701	1,702	0,96
	Wind inst.	Other	0,064	1,779	1,00
		Piano	-9,689*	2,306	0,00
		String inst.	-2,707	1,569	0,70
		Guitar	2,054	1,890	0,95
		Bağlama	-1,005	1,974	1,00
	Guitar	Other	-2,643	2,041	0,89
		Piano	-11,744*	2,330	0,00
		String inst.	-4,761	1,604	0,12
		Wind inst.	-2,054	1,890	0,95
		Bağlama	-3,060	2,003	0,80
Bağlama	Other	Other	-4,697	2,069	0,40
		Piano	-8,684*	2,399	0,02
		String inst.	-1,701	1,702	0,96
		Wind inst.	1,005	1,974	1,00
	Guitar	Guitar	3,060	2,003	0,80
		Other	-1,637	2,145	0,99
		Piano	-8,684*	2,399	0,02
		String inst.	-1,701	1,702	0,96

*p<.05

As it can be seen in Table 4, piano performance self-efficacy perceptions of music teacher candidates whose individual instrument is piano are at higher level when compared with those whose individual instrument is not piano. Furthermore, it was seen that perceptions of music teacher candidates, whose individual instrument was piano, relating with the technical competence lev-

els were higher with respect to those, whose individual instrument was guitar and bağlama instrument and that their perceptions relating with stage experiences were higher when compared with those whose individual instrument was string instrument, wind instrument and guitar.

Findings Regarding the Differences in Piano Performance Self-Efficacy Levels of Music Teacher Candidates in terms of Starting Age for Piano Education

One Way Variance Analysis (One-Way ANOVA) has been conducted with the aim to determine whether piano performance self-efficacy perception total scores and sub-dimensional score averages of music teacher candidates showed a meaningful difference with respect to the age of starting with piano education or not.

Table 5. One way variance analysis (ANOVA) and Welch Test results in relation to piano performance self-efficacy perception scores of music teacher candidates as per the variable of age of starting to have piano education

Scale and sub-dimensions	Age of starting with piano education	n	\bar{X}	Ss	Sd	F	p
Technical level perception	6-13 age interval	101	28,15	4,88	2	34,074	0,00*
	14-17 age interval	412	25,96	5,33			
	18 age and higher	205	23,31	4,75			
	Total	718	25,51	5,34			
Stage anxiety perception	6-13 age interval	101	22,16	5,52	2	10,535	0,00*
	14-17 age interval	412	20,27	5,12			
	18 age and higher	205	19,34	4,64			
	Total	718	20,27	5,11			
Performance level perception	6-13 age interval	101	38,28	7,35	2	9,613	0,00*
	14-17 age interval	412	35,42	7,32			
	18 age and higher	205	34,47	6,86			
	Total	718	35,55	7,28			
Piano performance self-efficacy perception ^a	6-13 age interval	101	88,58	14,62	2	23,889	0,00*
	14-17 age interval	412	81,65	14,32			
	18 age and higher	205	77,13	12,43			
	Total	718	81,34	14,28			

*p<.05

^a Welch Test has been applied.

The findings shown in Table 5 reveal that piano performance self-efficacy perception total score averages and sub-dimensional score average of music teacher candidates create a meaningful difference as per the groups relating with the age of starting with piano education (p<0.05). Following this finding, in order to determine the age group from which this meaningful difference

has originated, Scheffe and Games-Howell Test, among complementary post-hoc analysis technics have been applied and the results are given in Table 6.

Table 6. Results of Scheffe and Games Howell Tests being conducted in order to determine among which sub-groups there is differentiation with regards to piano performance self-efficacy perception scores of music teacher candidates as per the variable of age of starting with piano education

Scale and sub-dimensions	(I) Age of starting with piano education	(J) Age of starting with Piano education	Average Difference (I-J)	Standard error	p
Technical level perception	6-13 ages	14-17 ages	2,187*	0,567	0,00
		18 age and higher	4,836*	0,621	0,00
	14-17 ages	6-13 ages	-2,187*	0,567	0,00
		18 age and higher	2,649*	0,436	0,00
	18 age and higher	6-13 ages	-4,836*	0,621	0,00
		14-17 ages	-2,649*	0,436	0,00
Stage anxiety perception	6-13 ages	14-17 ages	1,891*	0,560	0,00
		18 age and higher	2,817*	0,614	0,00
	14-17 ages	6-13 ages	-1,891*	0,560	0,00
		18 age and higher	0,926	0,431	0,10
	18 age and higher	6-13 ages	-2,817*	0,614	0,00
		14-17 ages	-0,926	0,431	0,10
Performance level perception	6-13 ages	14-17 ages	2,852*	0,799	0,00
		18 age and higher	3,804*	0,875	0,00
	14-17 ages	6-13 ages	-2,852*	0,799	0,00
		18 age and higher	0,952	0,615	0,30
	18 age and higher	6-13 ages	-3,804*	0,875	0,00
		14-17 ages	-0,952	0,615	0,30
Piano Performance self-efficacy perception ^a	6-13 ages	14-17 ages	6,931*	1,617	0,00
		18 age and higher	11,457*	1,695	0,00
	14-17 ages	6-13 ages	-6,931*	1,617	0,00
		18 age and higher	4,526*	1,119	0,00
	18 age and higher	6-13 ages	-11,457*	1,695	0,00
		14-17 ages	-4,526*	1,119	0,00

*p<.05

^a Games-Howell test has been applied.

According to Table 6, piano performance self-efficacy perception total score averages and sub-dimensional score averages of music teacher candidates have created a meaningful difference in favor of 6-13 age group with regards to the age of starting with piano education. This finding being obtained reveals that music teacher candidates starting with piano education in the age group of 6-13 had a higher level of self-efficacy perception with regards to their technical competency and their own piano performance successes, when compared with other age groups and that they experienced

stage anxiety less. Furthermore, it can be stated that music teacher candidates starting with their piano education in the age interval of 14-17, had a higher level of self-efficacy perception in relation to their piano performance when compared with music teacher candidates starting with their piano education in the age group of 18 and higher and that they perceived themselves to be more competent with respect to their piano technics.

Findings Regarding the Differences in Piano Performance Self-Efficacy Levels of Music Teacher Candidates by Daily Piano Practice Duration

One Way Variance Analysis (One-Way ANOVA) has been conducted with the aim to determine whether piano performance self-efficacy perception total scores and sub-dimensional score averages of music teacher candidates showed a meaningful difference with respect to daily piano playing period or not.

Table 7. One way variance analysis (ANOVA) and Welch Test results relating with piano performance self-efficacy perception scores of music teacher candidates as per the variable of daily piano working time

Scale and sub-dimensions	Piano working time	n	\bar{X}	Ss	Sd	F	p
Technical level perception ^a	Less than half an hour	252	24,10	5,35	3	16,458	0,00*
	Between half hour-1 hour	264	25,27	4,69			
	1-2 hours	147	26,93	4,88			
	More than 2 hours	55	29,38	6,59			
	Total	718	25,51	5,34			
Stage anxiety perception	Less than half an hour	252	19,63	4,81	3	14,706	0,00*
	Between half hour-1 hour	264	20,03	5,04			
	1-2 hours	147	20,23	4,91			
	More than 2 hours	55	24,47	5,55			
	Total	718	20,27	5,11			
Performance level perception	Less than half an hour	252	32,50	7,28	3	34,219	0,00*
	Between half hour-1 hour	264	35,94	6,34			
	1-2 hours	147	38,29	6,48			
	More than 2 hours	55	40,40	7,74			
	Total	718	35,55	7,28			
Piano performance self-efficacy perception ^a	Less than half an hour	252	76,22	13,76	3	26,706	0,00*
	Between half hour-1 hour	264	81,23	12,35			
	1-2 hours	147	85,45	12,92			
	More than 2 hours	55	94,25	17,17			
	Total	718	81,34	14,28			

*p<.05

^a Welch Test has been applied.

According to Table 7, piano performance self-efficacy perception total score averages and sub-dimensional score averages of music teacher candidates have created a meaningful difference as per the daily piano working period groups ($p < 0.05$). Following this finding, Scheffe and Games-Howell Test, being among the complementary post-hoc analysis technics has been conducted in order to determine which piano working periods this meaningful difference has come out from.

Table 8. Results of Scheffe and Games Howell test being conducted to determine among which sub-groups there is differentiation regarding piano performance self-efficacy perception scores of music teacher candidates as per the variable of daily piano working time

Scale and sub-dimensions	(i)Piano working time	(j) Piano working time	Average Difference (I-J)	Standard error	p
Technical level perception ^a	Less than half hour	Between half-1 hour	-1,174*	0,444	0,04
		1-2 hours	-2,837*	0,525	0,00
		More than 2 hours	-5,287*	0,950	0,00
	Between half hour-1 hour	Less than half hour	1,174*	0,444	0,04
		1-2 hours	-1,663*	0,495	0,01
		More than 2 hours	-4,113*	0,934	0,00
	1-2 hours	Less than half hour	2,837*	0,525	0,00
		Between half-1 hour	1,663*	0,495	0,01
		More than 2 hours	-2,450	0,975	0,07
	More than 2 hours	Less than half hour	5,287*	0,950	0,00
		Between half-1 hour	4,113*	0,934	0,00
		1-2 hours	2,450	0,975	0,07
Stage Anxiety perception	Less than half hour	Between half-1 hour	-0,400	0,438	0,84
		1-2 hours	-0,604	0,516	0,71
		More than 2 hours	-4,846*	0,740	0,00
	Between half hour-1 hour	Less than half hour	0,400	0,438	0,84
		1-2 hours	-0,205	0,512	0,98
		More than 2 hours	-4,446*	0,737	0,00
	1-2 hours	Less than half hour	0,604	0,516	0,71
		Between half-1 hour	0,205	0,512	0,98
		More than 2 hours	-4,241*	0,786	0,00
	More than 2 hours	Less than half hour	4,846*	0,740	0,00
		Between half-1 hour	4,446*	0,737	0,00
		1-2 hours	4,241*	0,786	0,00
Performance level perception	Less than half hour	Between half-1 hour	-3,439*	0,601	0,00
		1-2 hours	-5,786*	0,708	0,00
		More than 2 hours	-7,900*	1,015	0,00
	Between half hour-1 hour	Less than half hour	3,439*	0,601	0,00
		1-2 hours	-2,346*	0,702	0,01
		More than 2 hours	-4,461*	1,011	0,00
	1-2 hours	Less than half hour	5,786*	0,708	0,00
		Between half-1 hour	2,346*	0,702	0,01

Piano performance self-efficacy perception ^a	More than 2 hours	More than 2 hours	-2,114	1,078	0,28
		Less than half hour	7,900*	1,015	0,00
		Between half-1 hour	4,461*	1,011	0,00
		1-2 hours	2,114	1,078	0,28
	Less than half hour	Between half-1 hour	-5,013*	1,153	0,00
		1-2 hours	-9,227*	1,373	0,00
		More than 2 hours	-18,032*	2,473	0,00
		Less than half hour	5,013*	1,153	0,00
	Between half hour-1 hour	1-2 hours	-4,214*	1,309	0,01
		More than 2 hours	-13,020*	2,437	0,00
		Less than half hour	9,227*	1,373	0,00
		Between half-1 hour	4,214*	1,309	0,01
	1-2 hours	More than 2 hours	-8,806*	2,549	0,01
		Less than half hour	18,032*	2,473	0,00
		Between half -1 hour	13,020*	2,437	0,00
		1-2 hours	8,806*	2,549	0,01
	More than 2 hours	Less than half hour	18,032*	2,473	0,00
		Between half -1 hour	13,020*	2,437	0,00
		1-2 hours	8,806*	2,549	0,01
		More than 2 hours	-2,114	1,078	0,28

*p<.05

^a Games-Howell test has been applied.

In Table 8 it is seen that piano performance self-efficacy perceptions, technical level and performance level sub-dimensional perceptions of music teacher candidates whose daily piano working period is more than 2 hours are higher with respect to those working for less than 2 hours (Less than half hour, Between half hour-1 hour and 1-2 hours); that those of music teacher candidates working for 1-2 hours are higher with respect to those working for less than 1 hour (Less than half an hour and Between half hour-1 hour) and that those of music teacher candidates working for half an hour-1 hour are higher than those who work for less than half an hour. With regards to stage anxiety perception, there is a meaningful difference of less than half an hour regarding music teacher candidates working for more than 2 hours and a meaningful difference of more than 2 hours for those working for half an hour-1 hour and between 1-2 hours, in favor of those working on piano. According to these results, it can be stated that daily piano working period of music teacher candidates whose piano performance self-efficacy perception, technical and performance level perception are high, is more and that daily piano working period of music teacher candidates whose self-efficacy perception is low, is less. Furthermore, it can be stated that those who allocate more time for working on piano, did not feel any anxiety while playing the piano in front of a community and that they performed more comfortably with regards to stage anxiety perception.

Findings Regarding the Differences in Piano Performance Self-Efficacy Levels of Music Teacher Candidates According to Piano Academic Success

One way variance analysis (One-Way ANOVA) has been conducted with the aim to determine whether piano performance self-efficacy perception total scores and sub-dimensional score averages of music teacher candidates revealed a meaningful difference with respect to piano lesson academic success score or not.

Table 9. One way variance analysis (ANOVA) and Welch Test results relating with piano performance self-efficacy perception scores of music teacher candidates as per the variable of piano lesson academic success score

Scale and sub-dimensions	Piano lesson grade	n	\bar{X}	Ss	Sd	F	p
Technical level perception ^a	AA-BA (100-85)	287	27,71	5,07	4	32,918	0,00*
	BB-CB (84-75)	175	25,17	4,29			
	CC-DC (74-55)	158	24,46	4,88			
	DD-FD (54-45)	56	20,89	4,52			
	FF (44-0)	42	22,05	6,49			
	Total	718	25,51	5,34			
Stage anxiety perception	AA-BA (100-85)	287	21,99	5,29	4	17,039	0,00*
	BB-CB (84-75)	175	19,66	4,44			
	CC-DC (74-55)	158	19,31	4,62			
	DD-FD (54-45)	56	18,00	4,49			
	FF (44-0)	42	17,67	5,50			
	Total	718	20,27	5,11			
Performance level perception	AA-BA (100-85)	287	38,93	6,46	4	39,689	0,00*
	BB-CB (84-75)	175	34,99	6,27			
	CC-DC (74-55)	158	33,42	6,78			
	DD-FD (54-45)	56	30,11	6,71			
	FF (44-0)	42	30,17	7,98			
	Total	718	35,55	7,28			
Piano performance self-efficacy perception ^a	AA-BA (100-85)	287	88,63	13,42	4	45,643	0,00*
	BB-CB (84-75)	175	79,81	11,21			
	CC-DC (74-55)	158	77,18	11,82			
	DD-FD (54-45)	56	69,00	12,49			
	FF (44-0)	42	69,88	15,48			
	Total	718	81,34	14,28			

*p<.05

^a Welch Test has been applied.

According to the results given in Table 9, piano performance self-efficacy perception total score averages and sub-dimensional score averages of music

teacher candidates have created a statistically meaningful difference with regards to piano lesson academic success scores ($p < 0.05$). Following this finding, Scheffe and Games-Howell test, being among complementary post-hoc analysis technics, has been conducted in order to determine from which groups this meaningful difference coming out has originated.

Table 10. Results of Scheffe and Games Howell Test conducted to determine among which sub-groups there is differentiation in relation to piano performance self-efficacy perception scores of music teacher candidates

Scale and sub-dimensions	(I) Piano lesson grade	(J) Piano lesson grade	Average Difference (I-J)	Standard error	p
Technical level perception ^a	AA-BA (100-85)	BB-CB (84-75)	2,549*	0,441	0,00
		CC-DC (74-55)	3,259*	0,490	0,00
		DD-FD (54-45)	6,821*	0,673	0,00
		FF (44-0)	5,667*	1,045	0,00
	BB-CB (84-75)	AA-BA (100-85)	-2,549*	0,441	0,00
		CC-DC (74-55)	0,710	0,506	0,63
		DD-FD (54-45)	4,273*	0,685	0,00
		FF (44-0)	3,118*	1,053	0,04
	CC-DC (74-55)	AA-BA (100-85)	-3,259*	0,490	0,00
		BB-CB (84-75)	-0,710	0,506	0,63
		DD-FD (54-45)	3,563*	0,718	0,00
		FF (44-0)	2,408	1,074	0,18
	DD-FD (54-45)	AA-BA (100-85)	-6,821*	0,673	0,00
		BB-CB (84-75)	-4,273*	0,685	0,00
		CC-DC (74-55)	-3,563*	0,718	0,00
		FF (44-0)	-1,155	1,169	0,86
	FF (44-0)	AA-BA (100-85)	-5,667*	1,045	0,00
		BB-CB (84-75)	-3,118*	1,053	0,04
		CC-DC (74-55)	-2,408	1,074	0,18
		DD-FD (54-45)	1,155	1,169	0,86
Stage anxiety perception	AA-BA (100-85)	BB-CB (84-75)	2,336*	0,470	0,00
		CC-DC (74-55)	2,683*	0,485	0,00
		DD-FD (54-45)	3,993*	0,716	0,00
		FF (44-0)	4,326*	0,810	0,00
	BB-CB (84-75)	AA-BA (100-85)	-2,336*	0,470	0,00
		CC-DC (74-55)	0,347	0,538	0,98
		DD-FD (54-45)	1,657	0,752	0,30
		FF (44-0)	1,990	0,842	0,23
	CC-DC (74-55)	AA-BA (100-85)	-2,683*	0,485	0,00
		BB-CB (84-75)	-0,347	0,538	0,98
		DD-FD (54-45)	1,310	0,762	0,57
		FF (44-0)	1,643	0,851	0,44
	DD-FD (54-45)	AA-BA (100-85)	-3,993*	0,716	0,00
		BB-CB (84-75)	-1,657	0,752	0,30
		CC-DC (74-55)	-1,310	0,762	0,57
		FF (44-0)	0,333	1,000	1,00
	FF (44-0)	AA-BA (100-85)	-4,326*	0,810	0,00

Performance level perception		BB-CB (84-75)	-1,990	0,842	0,23
		CC-DC (74-55)	-1,643	0,851	0,44
		DD-FD (54-45)	-0,333	1,000	1,00
	AA-BA (100-85)	BB-CB (84-75)	3,938*	0,633	0,00
		CC-DC (74-55)	5,509*	0,654	0,00
		DD-FD (54-45)	8,820*	0,965	0,00
		FF (44-0)	8,760*	1,091	0,00
	BB-CB (84-75)	AA-BA (100-85)	-3,938*	0,633	0,00
		CC-DC (74-55)	1,571	0,725	0,32
		DD-FD (54-45)	4,881*	1,014	0,00
		FF (44-0)	4,822*	1,135	0,00
	CC-DC (74-55)	AA-BA (100-85)	-5,509*	0,654	0,00
		BB-CB (84-75)	-1,571	0,725	0,32
		DD-FD (54-45)	3,311*	1,027	0,04
		FF (44-0)	3,251	1,146	0,09
	DD-FD (54-45)	AA-BA (100-85)	-8,820*	0,965	0,00
		BB-CB (84-75)	-4,881*	1,014	0,00
		CC-DC (74-55)	-3,311*	1,027	0,04
		FF (44-0)	-0,060	1,348	1,00
	FF (44-0)	AA-BA (100-85)	-8,760*	1,091	0,00
		BB-CB (84-75)	-4,822*	1,135	0,00
		CC-DC (74-55)	-3,251	1,146	0,09
		DD-FD (54-45)	0,060	1,348	1,00
Piano performance self-efficacy perception ^a	AA-BA (100-85)	BB-CB (84-75)	8,823*	1,160	0,00
		CC-DC (74-55)	11,451*	1,230	0,00
		DD-FD (54-45)	19,634*	1,847	0,00
		FF (44-0)	18,753*	2,517	0,00
	BB-CB (84-75)	AA-BA (100-85)	-8,823*	1,160	0,00
		CC-DC (74-55)	2,628	1,266	0,23
		DD-FD (54-45)	10,811*	1,872	0,00
		FF (44-0)	9,930*	2,535	0,00
	CC-DC (74-55)	AA-BA (100-85)	-11,451*	1,230	0,00
		BB-CB (84-75)	-2,628	1,266	0,23
		DD-FD (54-45)	8,184*	1,916	0,00
		FF (44-0)	7,303*	2,568	0,05
	DD-FD (54-45)	AA-BA (100-85)	-19,634*	1,847	0,00
		BB-CB (84-75)	-10,811*	1,872	0,00
		CC-DC (74-55)	-8,184*	1,916	0,00
		FF (44-0)	-0,881	2,914	1,00
	FF (44-0)	AA-BA (100-85)	-18,753*	2,517	0,00
		BB-CB (84-75)	-9,930*	2,535	0,00
		CC-DC (74-55)	-7,303*	2,568	0,05
		DD-FD (54-45)	0,881	2,914	1,00

*p<.05

^a Games-Howell test has been applied.

According to Table 10, it is seen that self-efficacy perceptions of music teacher candidates whose piano lesson academic success score was AA-BA

(100-85) were higher with respect to student groups having other academic success scores, with regards to their technical competencies, their own piano performance successes, and their self-efficacy perceptions relating with their piano performances. It is seen that self-efficacy perceptions of music teacher candidates whose piano lesson academic success score was BB-CB (84-75) were higher with respect to those whose academic success scores were DD-FD (54-45) and FF (44-0) and that self-efficacy perceptions of those whose academic success score was CC-DC (74-55) were higher with respect to those whose academic success score was DD-FD (54-45), with regards to their technical competencies, their own piano performance success and self-efficacy perceptions relating with their piano performance. With respect to stage anxiety perception, between music teacher candidates having academic success score of AA-BA (100-85) and music teacher candidates whose academic success scores were BB-CB (84-75), CC-DC (74-55), DD-FD (54-45) and FF (44-0), there was a meaningful difference in favor of music teacher candidates whose academic success score was AA-BA (100-85). According to these findings, it is seen that as the piano lesson success score increased, self-efficacy perceptions of music teacher candidates relating with their piano performance and their perceptions relating with their own piano techniques and piano performance success increased and that furthermore, they experienced stage anxiety less.

Findings Regarding Exam Anxiety Levels of Music Teacher Candidates

Descriptive statistical values being calculated based on exam anxiety total scores and sub-dimensional scores with the aim to determine exam anxiety levels of music teacher candidates are given in Table 11.

Table 11. Descriptive statistical values of scores obtained from exam anxiety inventory

Inventory and sub-dimensions	<i>n</i>	\bar{X}	ss	Min	Max
Worry anxiety	718	17,45	5,37	8	32
Emotional anxiety		28,27	7,14	12	48
Exam anxiety		45,72	11,89	20	80

According to Table 11, exam anxiety total scores of music teacher candidates are 80 as maximum and 20 as minimum and that average score is 45,72. According to this score average, it can be stated that exam anxieties of music

teacher candidates are at medium level. Scores relating with worry vary between 8 and 32 and average score is 17,45 and emotionality scores vary between 12 and 48 and average score is 28,27. Accordingly, it can be stated that worry and emotional anxieties of music teacher candidates are at medium level.

Findings Regarding the Relationship Between Music Teacher Candidates' Self-Efficacy Levels for Piano Playing Performance and Exam Anxiety Levels

Pearson Correlation analysis has been conducted to test the relationship between piano performance self-efficacy perception levels and exam anxiety levels of music teacher candidates. Analysis results are given in Table 12.

Table 12. Results of Pearson Correlation analysis conducted in order to determine the relationship between piano performance self-efficacy perception levels and exam anxiety levels of music teacher candidates

Scale	Dimension	Exam anxiety inventory and sub-dimensions		
		Worry anxiety	Emotional anxiety	Exam anxiety
Piano performance self-efficacy scale and sub-dimensions	Technical level perception	<i>r</i> -,223**	-,187**	-,213**
		<i>p</i> 0,000	0,000	0,000
	Stage anxiety perception	<i>r</i> -,391**	-,420**	-,429**
		<i>p</i> 0,000	0,000	0,000
	Performance level perception	<i>r</i> -,309**	-,243**	-,286**
		<i>p</i> 0,000	0,000	0,000
	Piano performance self-efficacy perception	<i>r</i> -,381**	-,344**	-,379**
		<i>p</i> 0,000	0,000	0,000

** Correlation is meaningful at level of (*r*) 0.01 (2-way). (*p*< .01)

According to Table 12, it has been determined that there is a negative directional, meaningful and medium level relationship between piano performance self-efficacy perception levels and exam anxiety levels of music teacher candidates (*r* piano performance self-efficacy*total exam anxiety=-0,379; *p*<.01). Accordingly, it can be stated that as piano performance self-efficacy perception levels of music teacher candidates increase, their exam anxiety levels get reduced. When the relationship between piano performance self-efficacy scale sub-dimensions and exam anxiety inventory sub-dimensions is examined, it has been determined that there is a negative directional, meaningful an weak relationship between technical level perception and worry anxiety levels (*r* technical level perception*worry anxiety=-0,223;

$p < .01$), and between emotional anxiety levels (r technical level perception*emotional anxiety = -0,187; $p < .01$) and total exam anxiety levels (r technical level perception*total exam anxiety = -0,213; $p < .01$) of music teacher candidates. It has been determined that there is a negative directional, meaningful and medium level relationship between stage anxiety levels and worry anxiety levels (r performance level perception*worry anxiety = -0,391; $p < .01$), and between emotional anxiety levels (r performance level perception*worry anxiety = -0,420; $p < .01$) and total exam anxiety levels (r performance level perception*total exam anxiety = -0,429; $p < .01$) of music teacher candidates. It has been determined that there is a negative directional, meaningful and medium level relationship between performance level perceptions and worry anxiety levels (r stage anxiety perception*worry anxiety = -0,309; $p < .01$) and a negative directional, meaningful an weak relationship between emotional anxiety levels (r stage anxiety perception*emotional anxiety = -0,243; $p < .01$) and total exam anxiety levels (r stage anxiety perception*total exam anxiety = -0,286; $p < .01$) of music teacher candidates. It has been determined that there is a negative directional, meaningful and medium level relationship between piano performance self-efficacy perception levels and worry anxiety levels (r piano performance self-efficacy *worry anxiety = -0,381; $p < .01$) and emotional anxiety levels (r piano performance self-efficacy *emotional anxiety = -0,344; $p < .01$) of music teacher candidates.

Discussion, Conclusion and Recommendations

This research has focused on the relationship between piano performance self-efficacy perceptions and exam anxieties of music teacher candidates. In this context, significance of self-efficacy and exam anxiety, being determinant on performance, has been revealed with regards to the piano performances of music teacher candidates. Data have been collected from the sampling group composed of 718 music teacher candidates by means of Piano Performance Self-efficacy Scale (Gün, 2014) and Exam Anxiety Inventory (Öner, 1990) in the research.

Results Regarding Piano Performance Self-Efficacy Levels of Music Teacher Candidates

Research results have shown that piano performance self-efficacy perceptions of music teacher candidates were at medium level and that their technical level and stage anxiety perceptions were at medium level and that their performance level perceptions were at a high level. In the research they conducted, Babacan and Babacan (2017) have determined that piano performance self-efficacy beliefs, piano performance, technical level and stage anxieties of music teacher candidates were at medium level and that their performance levels were at a good level. In his research, Gün (2014) has determined that piano performance self-efficacy perceptions of music teacher candidates were at medium level, that their technical level perceptions were at a high level and that their stage anxiety and performance level perceptions were at a medium level. In the study conducted by Pirlibeylioğlu (2015), it has been determined that piano performance self-efficacy perceptions of music teacher candidates were at low level and that their technical level, stage anxiety and performance level perceptions were at medium level. Accordingly the results of relevant researches showed similarity with the results of study conducted by Babacan and Babacan (2017) and they have shown similarity to the results obtained in relation to piano performance self-efficacy perceptions and performance level perceptions in the research conducted by Gün (2014) and they have contradicted with technical level perceptions and stage anxiety perceptions. With regards to the findings of research conducted by Pirlibeylioğlu (2015), there is contradiction with respect to piano performance self-efficacy perceptions and there is parallelism with respect to technical level and stage anxiety and performance level perception. Based on the above mentioned three researches, it has been considered that music teacher candidates felt anxiety in relation to their stage performance and that they experienced stress and excitement due to this anxiety.

Results Regarding the Differences of Piano Performance Self-Efficacy Levels of Music Teacher Candidates According to the Individual Type of Instrument

Piano performance self-efficacy perception total score averages and sub-dimensional score averages have created a meaningful difference in favor of

music teacher candidates whose instrument was piano, with respect to individual instrument type. In the research he conducted Pirlibeylioğlu (2015) has reached to the conclusion that piano performance self-efficacy perceptions of students whose individual instrument was piano were higher than piano performance self-efficacy perception averages of students whose individual instrument was not piano. Conclusion reached with this study shows similarity with the outcomes of study conducted by Pirlibeylioğlu (2015). No other research has been found in relation to the subject apart from the research of Pirlibeylioğlu (2015). According to these results it can be stated that students whose individual instrument was piano allocated more time for working on piano and that they perceived themselves as being more competent with respect to the students whose individual instruments were three double string instrument, guitar and wind instruments with regards to personal, emotional and psychomotor skills.

Results Regarding the Differences in Piano Performance Self-Efficacy Levels of Music Teacher Candidates in terms of Starting Age for Piano Education

Findings obtained from the research have shown that music teacher candidates who started with their piano education at the ages of 6-13 had higher level of self-efficacy perception with regards to their technical competence and their piano performance successes when compared with other age groups and that they perceived stage anxiety less. In the research conducted by Pirlibeylioğlu (2015), piano performance self-efficacy perception total score averages of students have created a meaningful difference in favor of students in the age group of 9-13 with respect to the age of starting with piano education. In the music education literature, there are researches revealing that self-efficacy perception created a meaningful difference with respect to the age variable (Piji Küçük, 2007; Ak, 2018; Ünal, 2019). According to these results, it can be stated that starting to work on piano at an early age plays a determinant role with respect to piano performance self-efficacy performance.

Results Regarding the Differences in Piano Performance Self-Efficacy Levels of Music Teacher Candidates by Daily Piano Practice Duration

It was seen that as daily piano working times of music teacher candidates increased, their self-efficacy perceptions relating with piano performance and their perceptions relating with piano technics and piano performance levels increased. Furthermore, it has been determined that music teacher candidates who allocated more time for working on piano did not feel disturbed while playing the piano in front of a community with regards to stage anxiety and that they believed that they performed better. As a result of the study conducted by Babacan and Babacan (2017), technical level, stage anxiety, and performance level perception sub-dimensional score averages have created a statistically meaningful difference in favor of students whose piano working period was more than 2 hours, with regards to daily piano working period groups. In the research he conducted, Pirlibeylioğlu (2015) has revealed the outcome that with regards to daily piano working periods, students who worked on the piano for more than 2 hours had the highest level of self-efficacy perception and that students who worked on piano for less than 1 hour had the lowest level of self-efficacy perception. In the study of Gün (2014), piano performance self-efficacy perception total score averages and sub-dimensional score averages of students have created a meaningful difference in favor of students working on piano for more than 2 hours. The results obtained from this research shows similarity with the results obtained from studies of Babacan and Babacan (2017), Pirlibeylioğlu (2015) and Gün (2014). As the conclusions of the current research and conclusions of other studies in parallel with these are reviewed, it has been seen that daily piano practicing hours constituted a significant determinant of piano performance self-efficacy and that whilst the practicing hours increased, piano performance self-efficacy perception level increased in that vein.

Results Regarding the Differences in Piano Performance Self-Efficacy Levels of Music Teacher Candidates According to Piano Academic Success

The results being obtained have shown that as piano lesson academic success score increased, self-efficacy perceptions of music teacher candidates relating with their piano performance and their perceptions relating with piano technics and piano performance levels increased and that they believed that they

experienced stage anxiety less. In the study conducted by Kurtuldu (2017), piano performance self-efficacy perceptions of students have created a meaningful difference in favor of students achieving high success. In the research he conducted, Gün (2014) has stated that technical level perceptions of music teacher candidates whose academic success scores were AA-BA and BB-CB were high and that they experienced stage anxiety less and that due to this reason, they had confidence in themselves when they realized their piano performances in front of a community. Babacan and Babacan (2017) have determined that piano performance self-efficacy perception total score averages and technical level, stage anxiety, and performance level perception sub-dimension score averages of students, have created a statistically meaningful difference in favor of students whose academic success scores were AA-BA. In the music education literature, there are researches revealing that self-efficacy created a meaningful difference with regards to the variable of academic success score. In the research they conducted, Birer and Sonsel (2013) have reached to the conclusion that there was a meaningful difference in favor of teacher candidates whose grades were 3.51 and higher, between professional self-efficacies and academic successes of music teacher candidates. The conclusion reached in this research shows similarity to the findings of above mentioned researches. It is an expected outcome that piano performance self-efficacy perception, technical level perception and performance level perceptions of students whose piano lesson academic success score is high, are higher than those of students whose piano lesson academic score is low.

Results Regarding Exam Anxiety Levels of Music Teacher Candidates

It is seen that exam anxieties and worry and emotional sub-dimension anxieties of music teacher candidates are at medium level. In the research they conducted, Yücel, Şen and Şen (2019) have reached to the conclusion that exam anxieties of music department students studying at fine arts high school, Piji Küçük (2010) music teacher candidates were at medium level. The study results of Kurtuldu and Aksu (2015) have shown that piano lesson exam anxieties of music teacher candidates were at high level. In the music education literature relating with the subject, apart from the researches conducted by Yücel, Şen and Şen (2019), Kurtuldu and Aksu (2015) and Piji Küçük (2010), no other study was found. Apart from music education, there are researches

relating with various subjects in relation to exam anxiety regarding other education areas. In the research conducted by Kaçan Softa, Ulaş Karaahmetoğlu and Çabuk (2014), it has been determined that exam anxiety levels of students studying in the last class of high school were low and that regarding sub-dimensions of inventory, their worry anxieties were low and their emotional anxieties were at a high level. In the study conducted by Kapıkıran (2002), it has been determined that exam anxiety levels of university students were at medium level and that regarding sub-dimensions of inventory, their worry anxieties were low and their emotional anxieties were at a high level. In the study conducted by Aydoğmuş (2016), it was revealed that exam anxieties of students studying at occupational and technical education institutions were at medium level and that regarding sub-dimensions of inventory, worry and emotional anxieties of students were at medium level. In the research he conducted, Koç (2013) has reached to the conclusion that exam anxiety levels of teacher candidates preparing for public personnel selection exam were at medium level. In the research conducted by Güler and Çakır (2013), it was determined that exam anxieties, worry and emotional anxieties of students studying at final class of high school were at medium level. In the research conducted by Şahinler (2018), it has been determined that exam anxiety levels of high school students were at medium level and that their worry anxieties were low and their emotional anxieties were at a medium level. In this research the conclusion reached as per the score averages obtained from students' exam anxiety inventory that their exam anxieties were at a medium level and that as the inventory sub-dimensions were examined, students' worry and emotional anxieties were at a medium level, shows similarity with the conclusions reached by Yücel, Şen and Şen (2019), Piji Küçük (2010), Aydoğmuş (2016), Güler and Çakır (2013), Koç (2013) and Şahinler (2018), while it contradicts with the conclusions reached by Kapıkıran (2002) and Kaçan Softa, Ulaş Karaahmetoğlu and Çabuk (2015), Kurtuldu and Aksu (2015). According to these results it can be considered that exam anxiety level can vary depending on different dimensions and that there can be different variables for predicting this emotional status. It can be thought that the exam anxiety perceived by music teacher candidates come out depending on different variables such as insufficiency of preparation process, the fear of being negatively evaluated, evaluation of working process based on a single performance moment, and prior negative experiences.

Results Regarding the Relationship Between Music Teacher Candidates' Self-Efficacy Levels for Piano Performance and Exam Anxiety Levels

It has been determined that there was a negative directional, meaningful and medium level relationship between piano performance self-efficacy perceptions and exam worry levels of music teacher candidates. Accordingly, as piano performance self-efficacy perception levels of students increase, their exam anxiety levels got reduced. In the research he conducted, Erzen (2013) has reached to the conclusion that there was a negative directional, meaningful and low level of relationship between self-efficacy perception levels of adolescents preparing for university exams and their exam anxiety levels and that there was a negative directional, meaningful and low level of relationship between their self-efficacy perception scale sub-dimensions and exam worry inventory sub-dimensions. According to these results, it can be stated that students' having high level of self-efficacy perceptions can cause for the students to exhibit a successful performance, have increased motivations, and reduced levels of exam anxieties and that students' having low level of self-efficacy perceptions can cause for students to feel tense during the exam, and fail to have control over their performances and to experience intense level of anxiety as a result of this emotional situations.

In the research it has been determined that piano performance self-efficacy perception was an important determinant of exam anxiety. While piano performance self-efficacy perception levels of music teacher candidates increased, their exam worries got reduced. The limitation of research was related with revealing levels of piano performance self-efficacy perception and exam anxiety and the relationship between the two variables. In the following researches, studies can be made aiming to increase piano performance self-efficacy perception and to reduce exam anxiety level. Impact of constructive criticisms can be examined with studies relating with teacher assessment and peer assessment studies with regards to piano performance self-efficacy performance. Piano teaching staff can support self-efficacy perception that would reveal strong aspects of students (technical, interpretation, working discipline etc) instead of comparing performances of students. Furthermore, in order to improve piano performance technical level perception, it can be recommended for more room to be allocated for developing practices and

studies by piano teaching staff. In order to reduce stage anxiety, it can be recommended for concerts and auditions to be realized in a regular and programmed way whereas music teacher candidates will take part in them and to realize piano exams in an environment that is open to everyone and to make them gain a rich experience with continuation of their piano lives.

The fact that exam anxieties of music teacher candidates are at medium level can cause for them to focus on their performances better but not being able to manage exam anxiety well can create destructive outcomes in relation to performance. For this reason, in order for music teacher candidates to be able to control their exam anxieties, it is important for teaching staff to emphasize the importance of systematic working. Besides it is recommended for teaching staff to demonstrate positive attitude towards music teacher candidates during the exams and to make evaluations as per the criteria that have been precisely determined in advance. In order to reduce exam anxiety, experimental researches can be conducted to organize working habits in relation to piano performance process and programs relating with self-arrangement and for testing these programs. Application of these programs can be helpful in order for music teacher candidates to better manage their anxiety levels during exams requiring performance to be demonstrated.

In the future researches, it can be focused on studies aiming to determine the relationships between variables of piano performance self-efficacy and exam anxiety and different variables such as working habits, self-organization, music performance anxiety, and success orientations. Furthermore, apart from the measurement tools used in the research, new and different measurement tools can be developed for measuring variables of piano performance self-efficacies and exam anxiety. The research is limited with sampling constituted of music teacher candidates receiving their education at institutions specialized to train music teacher candidates. Studies can be conducted in relation to the same subject, whereas students receiving their education at fine art faculties or conservatories would also be included.

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