

# An Investigation of Music Teacher Candidates' Performance Anxiety Levels in Piano Examinations

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## Abstract

Examination anxiety in piano education, one of the important courses in music education, can negatively affect both success in examinations and the education of students. This study aimed to determine the anxiety levels of students in the music education departments of universities in western Turkey regarding their piano examinations and their significance according to different variables. The study sample consisted of 174 female and 107 male students. The study found the students' performance anxiety levels related to piano examinations to be moderate. There were no statistically significant differences in their anxiety levels by gender or age. Students with their own pianos were less likely to have performance concerns regarding piano examinations than those without. It was also found that the students' year of study had a significant effect on their performance anxiety levels in piano examinations.

**Keywords:** music teacher candidates, piano, performance, examination anxiety

## 1. Introduction

Anxiety is a persistent and generalized fear response (Harriman, 1970). In another definition, anxiety is treated as feeling threatened by a failure to achieve an obligation due to lack of competence, control or self-esteem (Fiske & Morling, 1996). According to Barlow (2000), anxiety is a mixture of innate feelings that are altered by learning and experience. Barlow (2000) draws a model in which the anxiety-ridden individual interacts with various components. The emotion at the center of this model is an uncontrollable feeling that focuses on potential future threats, dangers and other adverse events.

Individuals experience anxiety in a variety of situations from time to time. It is a normal human feeling, except when it is extremely intense (Endler & Kocovski, 2001). Average concern is a normal part of life. Here are anxiety's basic features:

- The anxiety-ridden person believes that their actions must be "perfect" on stage, or the disaster is disastrous (Steptoe & Fidler, 1987).
- Somatic anxiety indicators such as tremors, rapid breathing or palpitation during performance (Conklin, 2011).
- Behavioral features such as the avoidance of performance-based activities (Clark & Agras, 1991).

If anxiety is intense, prolonged or disrupts other parts of life, it becomes a psychological disorder (Bernstein, Clarke-Stewart, Roy, Srull, & Wickens, 1994). Living in an intense manner in stressful situations increases individual anxiety levels (Endler & Kocovski, 2001). A disturbed person lives with symptoms such as restlessness, fear, panic and excitement (Carr, 2001). A student with low anxiety is more willing to learn and more confident and a highly anxious student feels self-doubt (Baştürk, 2007, p. 167). Excessive anxiety negatively affects performance.

Music performance anxiety been discussed in the literature by music educators and psychologists in recent years and can occur in any situation (Osborne & Franklin, 2002). One of these situations is performance. Concerns about musicians' performance anxiety, stage anxiety and performance anxiety are also discussed (Fehm & Schmidt, 2006). Osborne, Kenny, & Holsomback (2005) state that individuals who are involved in musical activities can experience increased anxiety about performance and success in front of crowds. According to Wesner, Noyes, &

Davis (1990), the most commonly used definition of performance anxiety is the experience of worrying about the failure of performance abilities before audiences, irrespective of musical abilities, education and degree of preparation. Performance concern affects amateurs (Steptoe & Fidler, 1987), professional musicians, soloists, orchestra musicians and opera musicians (Kenny, Davis, & Oates, 2004). Many studies have focused on the fact that it is one of the most important causes of the difficulties experienced by performing musicians and affects people of almost every age group and skill level (Sadler & Miller, 2010).

Other studies have examined the causes of music performance anxiety (Tamborrino, 2001); differences by solo and group performance (Kane, 2008), the influence of performance conditions (Brotons, 1994), its relation to various psychological characteristics (Kageyama, 2007; Yoshie, Kudo, & Ohtsuki, 2008) and treatment (Feener, 2004). One study emphasized that performance anxiety is widespread in professional musicians and music students and that concerns may vary (Steptoe & Fidler, 1987). Some musicians and music students who experience anxiety have found their profession and performance affected in a negative way (Fehm & Schmidt, 2006; Powell, 2004). Of professional musicians, 59% say that they experience severe performance anxiety (van Kemenade, van Son, & van Heesch, 1995) and 70% of them are affected negatively by it (Brodsky, 1996). Ryan and Andrews (2009) found that the presence and size of audiences affects levels of performance anxiety, which occurs most often in solo performances. Another study found that 91 of 155 professional musicians experienced musical performance anxiety “at a level that can affect professional music lives or lives”. A large percentage of musicians are anxious in the days before performance (36%), but some are anxious weeks (10%), even months (5%) beforehand. These results show that performance anxiety is a serious professional problem (van Kemenade, van Son, & van Heesch, 1995).

Performance anxiety involves physical, mental and behavioral symptoms (Carr, 2001). The physical symptoms are easiest to distinguish measure and observe (Ely, 1991). They include cold hands, sweating, nausea, increased heart rate, paleness and muscle tension (Lehmann et al., 2007; Taborsky, 2007). Although physical manifestations are described in the literature as general anxiety and performance anxiety, there are not many indications about their frequency (Fehm & Schmidt, 2006; Miller, 2004; Rosenthal & Schreiner, 2000). These symptoms can affect musical performance negatively by appearing immediately before or during performances. The mental dimension of performance anxiety includes concerns about the individual's performance quality (Steptoe, 1989). One study emphasized that musicians' expectations of performance errors are in the mental dimension of performance anxiety (Fehm & Schmidt, 2006). In the behavioral dimension of the performance anxiety, physical and mental performance anxiety result in a tense facial expression, concert cancellations and reduced performance quality (Conklin, 2011). In the behavioral dimension, the literature reports lack of concentration, poor rhythm, missed notes and postponed and missed examinations (Fehm & Schmidt, 2006; Kenny, 2006).

The knowledge of the examination learned before the examination and all the studies done for the examination and the examination anxiety that prevented the whole preparation from being used effectively during the examination and which led to the failure of the examination is a living concern about the performance which will be shown at the examination (Fehm & Schmidt, 2006). According to Spielberger (1970), examination anxiety is the emotional state that prevents individuals from performing at their actual ability level in a formal examination or evaluation and creates tension in them (p. 14), meaning that everyone can experience examination anxiety. Examination anxiety can also be experienced in instrument and piano examinations. In music education in Turkey, four years of piano course are required. The piano courses are based on performance, which is an outcome of the students' psychomotor behavior. The final examinations of the course are conducted by jury evaluation, and students perform with their own piano teachers and other piano instructors present. Musicians are more anxious when their performance is assessed by an expert jury (Fehm & Schmidt, 2006; Kokotsaki & Davidson, 2003). Another study emphasized that when people perform, they may become uncomfortable with others observing them, experience the audience as a threat and be unable to perform as desired (Dalkıran, Baltacı, Karataş, & Nacici, 2014). Taborsky (2007) states that when students perform for juries, their worries increase.

Music performance requires attention, memory, coordination and motor skills for success (Kenny, 2006). Discipline, attention to detail and the ability to play long pieces are also important (Kenny, Davis, & Oates, 2004). Therefore, students must prepare well for examinations to avoid performance anxiety. Inadequate preparation is an important factor in performance anxiety (Kenny, 2006), and it can vary by degree of difficulty (Abel & Larkin, 1990). Knowledge about the style of the pieces being performed can help students to be comfortable interpreting them. Lack of preparedness causes lack of self-confidence. Not being disciplined and assigning pieces above the students' ability levels increase the fear of making mistakes and performance anxiety (Ely, 1991).

While individuals with normal levels of anxiety view examinations as an opportunity to reveal their achievements, anxiety-ridden individuals perceive them as threatening. Low anxiety affects performances positively, while high anxiety affects them negatively, making it impossible to perform well (Fehm & Schmidt, 2006). Köknel (2005) notes that high levels of examination anxiety can prevent students from playing the instrument, such as excitement and muscle tension. Nagel (2010) emphasizes that during examination, students get over-excited about the idea that they may make mistakes. This research aims to reveal the variables in the performance anxiety levels of music teacher undergraduate students' piano examinations. This research is important because it contributes to the literature on music performance anxiety and makes suggestions to help with this problem.

## 2. Methodology

### 2.1 Study Sample

The sample included 281 music teachers in the departments of music education of three universities in western Turkey in the 2016-2017 academic year. Their personal characteristics are shown in Table 1.

Table 1. Distribution of students by personal characteristics

		f	%
Gender	Female	174	61.9
	Male	107	38.0
	Total	281	100
Having a piano of their own	Yes	68	24.1
	No	213	75.8
	Total	281	100
Age	17-19 years	118	41.9
	20-22 years	82	29.1
	23-25 years	35	12.4
	26 years or older	46	16.3
	Total	281	100
Year of study	1st	96	34.1
	2nd	71	25.2
	3rd	69	24.5
	4th	45	16.0
	Total	281	100

Table 1 shows that 61.9% (174) of the students were females, and 38.0% (107) were males. Of them, 24.1% (68) had their own pianos, and 75.8% (213) did not. Of them, 41.9% (118) were in the 17-19 age group, 29.1% (82) were in the 20-22 age group, 12.4% (35) were in the 23-25 age group and 16.3% (46) were older than 26 years of age. Of the students, 34.1% (96) were in the first year of study, 25.2% (71) in the second year of study, 24.5% in the third year of study and 16.0% in the fourth year of study.

### 2.2 Data Collection Tools

A personal information form and the Music Performance Anxiety Inventory for Young People were used to collect data.

Personal Information Form: A personal information form was created to obtain personal information from the participants. It includes questions about gender, piano ownership, age and year of study.

This study used the Music Performance Anxiety Inventory for Adolescents (MPAI-A) developed by MS Osborne and DT Kenny (2005) as a data collection tool. It has 15 items, and the validity and reliability study of its Turkish form showed high internal consistency with a Cronbach's alpha coefficient of .783 (Kafadar, 2009). It is a valid and reliable measurement tool. In Osborne and Kenny's study, its reliability coefficient was .91. In this study, its reliability coefficient was .89.

### 2.3 Data Analysis

This study used descriptive statistics to evaluate its data. Means and standard deviations were calculated to determine the performance anxiety levels of the music teacher candidates. The independent t-test (t-test) was used to determine anxiety disparity by gender and piano ownership. ANOVA for unrelated samples (one-way ANOVA) was performed for age and year of study. Cohen's d coefficient was calculated to determine the magnitude of the effect of the differences.

### 3. Findings

Table 2 shows the results of the data analysis of the students' performance anxiety levels.

Table 2. The arithmetic mean and standard deviation values of the students' performance anxiety levels

	N	$\bar{X}$	SD
Performance anxiety	281	4.58	1.83

As Table 2 shows, the students' level of performance anxiety regarding piano examinations was moderate ( $\bar{X}=4.58$ ,  $SD=1.83$ ).

In this study, t-test analysis of independent groups was performed when the variances were homogeneous by gender and piano ownership. The difference is the effect size calculated by Cohen's d. The results are shown in Table 3.

Table 3. Results of the t-test analysis

Independent Variables	Group	N	$\bar{X}$	SD	t	sd	p	Cohen's d
Gender	Female	174	3.02	.58	.464	.279	.65	-
	Male	107	2.98	.57				
Piano ownership	Yes	68	2.31	.53	7.86	.279	.00*	.726
	No	213	2.77	.42				

Table 3 shows no statistically significant difference in performance anxiety levels by gender [ $t=.464$ ,  $p>.05$ ]. The anxiety levels of the females ( $\bar{X}=3.02$ ,  $SD=.58$ ) and the males ( $\bar{X}=2.98$ ,  $SD=.57$ ) were nearly the same. There was a statistically significant difference by piano ownership [ $t=7.86$ ,  $p<.05$ ]. Those who owned pianos ( $\bar{X}=2.31$ ,  $SD=.53$ ) were less anxious than those who did not ( $\bar{X}=2.77$ ,  $SD=.42$ ). This difference had a high level of magnitude, which indicates the importance of piano ownership.

In this study, the students' performance anxiety levels related to piano examinations were compared by gender and year of study. One way ANOVA was used to determine whether there was a statistically significant difference between the variables and whether the variances were homogeneous. When there was a significant difference, the effect size was examined using Tukey analysis to reveal the groups that differed. The results of this analysis are shown in Table 4.

Table 4. The results of one-way ANOVA

Variable	Groups	N	$\bar{X}$	SD	Mean Square	F	p	Cohen's d	Tukey
Age	a) 17-19	118	2.73	.53	.128	.546	.611**	-	-
	b) 20-22	82	2.63	.59	.249				
	c) 23-25	35	2.55	.36					
	d) 26 or older	46	2.76	.54					
Year of study	a) 1st	96	2.83	.46	3.254	14.218	.00*	.267	a>b, c, d
	b) 2nd	71	2.66	.44					
	c) 3rd	69	2.61	.42					
	d) 4th	45	2.53	.40					

*p* < .05\*, *p* > .05\*\*

Table 4 shows that age [ $F(3, 277) = .546; p > .05$ ] had no statistically significant effect on the students' performance anxiety levels in piano examinations. Their year of study [ $F(3, 277) = 14.218; p < .05$ ] did have a statistically significant effect on their performance anxiety levels in piano examinations. The effect size of year of study was moderate.

#### 4. Discussion, Conclusion and Recommendations

Research has contributed to performance anxiety's conceptualization, classification and the identification of appropriate interventions (Clark, 2001; Kenny, 2005; Lazarus & Abramowitz, 2004), revealing the need to explore the concept of anxiety. Music teacher candidates perform during both piano examinations and concerts throughout four years of piano training. Failure experienced once or several times can negatively affect piano learning and examination success because the examination anxiety experienced by students during piano examinations is an important determinant of their academic achievement. Some students may experience anxiety if they do not succeed in their long-term work. The need to recognize anxiety is self-evident in such situations because students know that they have to be able to perform for a jury in the examination. Music examination are one-time opportunities for students to do their best with no other chance to correct their mistakes (McCormick & McPherson, 2003). Patston & Osborne (2015) state that performance anxiety is not familiar to young musicians in particular, resulting in high levels of psychological stimulation. Anxiety can manifest itself in different forms such as worry, shame and examination anxiety (Hart, 2007). Examination by expert juries are more stressful for musicians and music students (Kenny, 2006; Kokotsaki & Davidson, 2003; Rae & McCambridge, 2004; Toback & Downs, 1986; Wilson & Roland, 2002).

Undoubtedly, considering the nature of the courses in the music teacher education program and the music teaching profession, music teacher candidates will perform on the piano as students and during their professional lives, whether as students or teachers. In all these cases, it is of great importance that music teacher candidates be less anxious and that they can be successful both in education and in their profession. This study was carried out to investigate whether music performance anxiety varies by gender, piano ownership, age or year of study. It suggests that music teacher candidates will increase their performance piano by reducing their anxiety levels in piano courses.

This research found that the performance anxiety levels of the students regarding piano examinations are moderate. There are various studies that have positively affected moderately anxious performance (Kenny, 2006; Papageorgi, Hallam, & Welch, 2007). Papageorgi, Hallam & Welch (2007) indicate that a moderate level of anxiety increases performance efficiency if controlled. Powell (2004) notes that examination anxiety is a type of performance anxiety, but that the motor performance, emotional and intellectual functioning of music performers can be negatively affected by it. As a result, people with low levels of anxiety can perform better for audiences (Parncutt & McPherson, 2002). Schwarzer (1988) sees examinations as an opportunity for success for individuals whose examination anxiety level is normal. Osborne & Franklin (2002) found that individuals with low performance anxiety perceive audiences' evaluations positively. However, some studies emphasize that the number of people in

the audience and their expertise in the subject increase performance anxiety (Iusca & Dafinoiu, 2012; LeBlanc, Jin, Obert, & Siivola, 1997). Miesner & Maki (2007) found that students with high anxiety have negative attitudes toward examination committees and teachers. Sansgiry and Sail (2006) point out that students with high anxiety have difficulty understanding their education. They emphasize the need for educators to focus on the underlying causes of examination anxiety.

This study found no statistically significant difference in the undergraduate music students' performance anxiety levels regarding piano examinations by gender. Little (2010), in a study of the relation between music teacher candidates' examination anxiety, self-esteem and instrument achievement, found that gender had no effect on their examination anxiety levels, which supports this study's findings. Despite this result, there are studies showing that female musicians experience more performance anxiety than males (Dews & Williams, 1989; Kenny, 2006; Miller, 2004; Osborne & Franklin, 2002; Rae & McCambridge, 2004; Rosenthal & Schreiner, 2000; Yöndem, 2007). Ryan's (2004) study of 26 sixth graders' music performance anxiety by gender measured their heart rates and observed their movements. He concluded that females showed an increase in heart rate at every stage of performance and that males exhibited significant restlessness before and during performance. Studer et al. (2011) found that females' performance anxiety significantly differed from that of males, that they had a negative emotional response to music performance anxiety and that they complained of increased breathing rates in their study of 169 university music education students. LeBlanc, Jin, Obert, & Siivola (1997) found increased heart rates in females with performance anxiety. Rae & McCambridge (2004) found that female musicians had significantly higher performance anxiety levels than males in their research with 120 musicians.

In this study, the performance anxiety levels of the students varied significantly by their piano ownership. Those who owned pianos were less anxious than those who did not. This suggests that self-esteem increases and performance anxiety falls because students who own their own pianos spend more time playing the piano. The age of the students did not have a significant influence on the level of performance anxiety regarding piano examinations. A study of an Iowa music school's students found that, of 302 participants, 49% were influenced by music performance anxiety, 21% had anxiety during performance, and 16.1% had experience the negative effects of performance anxiety in their careers. It found that women have more anxiety than men and that there is no relationship between age and performance anxiety (Wesner et al., 1990). These findings support this study. There are also different research results about age's effect on music performance anxiety. Papageorgi, Creech, & Welch (2011) found that perceived sensitivity to performance anxiety was related to gender, age, worry and self-esteem. Valentine (2003) notes that performance anxiety declines with age and experience. Thomas & Nettelbeck (2013) found that musicians in the 12-18 age group have higher performance anxiety. Another survey determined that 22.8% of 330 German music students in the 20-23 age group had high performance anxiety was (Fehm & Schmidt, 2006; Schröder & Liebelt, 1999). Kenny (2006) emphasizes that performance anxiety generally begins in the early stages of musical development and continues in adulthood, in a study of the relationship between adolescents' age and music performance anxiety. These results can be interpreted as the effect of age and more training on the performance anxiety levels, depending on the experiment.

This study also found that the students' year of study had a significant influence on their performance anxiety levels. Fourth-year students had the most anxiety and first-year students had the least. This suggests that fourth-year students are anxious about their graduation and the future. In addition, the fear of not being able to get a job after graduation creates anxiety for students. Performance may also rise because senior students cannot prepare enough for their piano examinations. Taborsky (2007) found that third-year students were more anxious than second-year students, which supports this study. Unlike these studies, Sadler & Miller (2010) indicate that the musical performance anxiety of prospective teachers does not differ significantly by year of study. While this finding does not overlap with the findings of this research, Hamann (1982) notes that longer-term students gain experience with an increase in years of study, and that experienced students performed better in examinations than less experienced students. Another study of performance anxiety also found that experience increases with students' years of study (McQuade, 2009).

This research's findings suggest that:

- The individual differences of each student should be taken into account in the effort to identify and reduce anxiety. Its causes should be understood and specific approaches should be followed.
- It is important for music educators to take appropriate approaches to anxiety in the process of teaching performance skills to their students, which will contribute to the professional lives of music students by resolving their problems with anxiety as early as possible.

- Further research on performance anxiety levels and methods of coping with piano examinations and treatments should be done.
- It may be advisable for students to reduce examination anxiety and organize activities such as in-class and public concerts.
- Piano instructors should teach students appropriate, planned and conscious work behaviors that can mitigate examination anxiety.
- Performance anxiety levels for piano examinations should be examined by different variables and with a larger sample.
- Piano lecturers should guide students about how to be fully prepared for examinations.
- Piano instructors should set an example of self-reliance, not only in terms of technique, but also as models of self-confidence for their students.

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