academicJournals

Vol. 11(8), pp. 791-803, 23 April, 2016
DOI: 10.5897/ERR2016.2742
Article Number: 8DF549C58182
ISSN 1990-3839

http://www.academicjournals.org/ERR

Educational Research and Reviews

Full Length Research Paper

Musical performance anxiety and the relationship between learning styles and the instrument and singing fields

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Received 5 March, 2016; Accepted 19 April, 2016

The aim of this study is to determine the relationship between musical performance anxiety, learning styles, and the field of instrument and solo singing music teacher candidates. Musical performance anxiety has been investigated at various musical events, such as performance during exams, singing and playing on stage, or in front of judges for an audition. Many research studies have concluded that in any exam or concert, a high level musical anxiety has a negative effect on the actual performance. While structured learning environments with learning styles have a positive effect on success. Moving from this point, the level of the teacher candidates' anxiety levels and learning styles and the relationships between these variables have been seen as an important condition to be investigated. The study group of research, where the correlation and causal-comparative approach is used, comprises music teacher candidates (n = 99). The data collection tools of the research are Kenny Musical Performance Inventory and Kolb Learning Style Inventory Version-3. The reliability levels of these measurement tools were found to be significantly higher. As a result of normality analysis, it has proven to be appropriate to use parametric statistical techniques. Descriptive statistics are: frequency, arithmetic means, standard deviation, and minimum-maximum values. To determine the relationship between musical performance concerns and learning styles, field of instrument and solo singing one-way variance analysis, and Welch's F, Scheffe tests were used and, for the relationship between learning modes and musical performance anxiety, Pearson's correlation was applied. Learning styles and the field of instrument and solo singing values are presented using crosstabs. To determine the effect sizes; Omega squared ω^2, Pearson r and r^2 values were calculated. As a result of the analysis, it was determined that the musical performance anxiety of students was at a medium level. The most preferred learning style was found to be assimilating. It was determined that there is an insignificant relation in negative and weak direction between the points of psychological vulnerability and somatic anxiety and abstract conceptualization learning mode. It was found that the level of physiological vulnerability of those in the solo singing field compared to those in the bağlama instrument group was significantly higher. The effect size value was determined to be close to the high level.

Key words: Musical performance anxiety, stage anxiety, learning style, Kolb learning style, learning mode, instrument, singing, playing.

INTRODUCTION

Individuals who intend to practice music teaching profession demonstrate musical performance in the field of singing and instrument playing as a prerequisite of the nature of music and music education. Musical

performance is one of the most important components in musical activities. Boyle and Radocy (1987) say Musical behaviors include musical performance classified as follows:

1. Musical performance (playing, singing, improvisation)
2. Music literacy
3. Musical listening
4. Other cognitive behavioral components (form analysis, harmony analysis, analysis of historiography etc.)

As can be seen in the above classification, Boyle and Radocy (1987) announced the musical performance that they classified as singing an existing piece of work in the singing and instrument fields and production as the primary element of musical behavior. In this regard, musical performance is vitally important for music teachers. Music teachers are required to demonstrate a successful performance in the singing and instrument fields as much as possible. Gabrielsson (1999) explains the basic elements of musical performance as: performance planning (decoding, improvisation, feedback, motor skills, measurement and evaluation) physical, psychological and social factors. Kenny and Osborne (2006) pointed out that musical performance requires a high level of competence in various fields, such as interpretation, esthetics, attention, musical memory, and motor skills. In order to demonstrate sufficient and successful musical performance, it is necessary to identify the variables that affect this behavior negatively and to take measures in this regard. From this point, it is important to determine which individual achievement, occupational, psychological, physiological, etc. factors are in relation with musical performance. At this point, the relationship between variables such as musical performance anxiety, learning styles and modes, instruments and singing fields, etc. becomes important. It is an important issue wherein the modes, ways, and styles are preferred in the learning process of music sub-sections that require performance and musical performance anxiety levels of individuals. In the prevention and treatment of musical performance anxiety, the personal characteristics of the individuals are engaged. Which learning styles and modes individuals experience musical performance anxiety prefer, determination of the instrument field or singing field will contribute to the configuration of strategies to be followed in dealing with musical performance anxiety and to the creation of appropriate learning environments. Hence, this study aimed to search for the relationship between the MAP levels of music teacher candidates and learning styles and the instrument and singing field.

The research questions created for the purpose of the study are as follows:

1. How are the identifying values of K-MPAI and learning modes scored?
2. Is there a significant difference in K-MPAI scores compared to LSI-3?
3. Is there a significant relationship between the learning modes of scores and K-MPAI?
4. Is there a significant difference between LSI-3 learning styles and modes according to the instrument and solo singing field?

After these explanations, which form the introduction part of the study, the literature on learning styles, musical performance, and anxiety information is provided.

THEORETICAL FRAMEWORK

Musical performance anxiety (MPA)

MPA is a specific kind of excessive levels of anxiety during musical performance in front of an audience, including the frequent fear of incompetence (Wilson and Roland, 2002), while MPA is assessed as an anxiety disorder in the scope of social phobia causing a significant deterioration in a person's musical performance (APA, 2013). Nagel (1990) defined MPA as a whole form of profile features, unconscious conflicts, and attitudes becoming effective during or prior to performance in musical events such as concerts, plays, etc. According to Salmon (1990), MPA is the entirety of causeless, stressing anxiety disorder experiences related to distortions that may occur in performance skills based on musical talent, education, and level of preparedness of individual. Baker (2005) has stated that musical performance anxiety contains fear and excessive levels of stimulants and reduces the capacity of performing in front of a community.

Salmon (1990) stated the basic components of his approach to the MPA as follows:

1. Physiological components of musical performance anxiety can be specified as autonomic nervous system particularly arising as reflexes associated with fear.
2. Expectations for performance can create a concern bigger than the performance itself.
3. The psychotherapeutic intervention for musical performance anxiety will have a positive impact on the overall level of anxiety if they are conducted while considering the cognitive, physiological, and behavioral

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process or specifically for these three factors.
4. Musical performance anxiety is a structure in which there is a weak relationship between physiological, affective, behavioral, and cognitive variables.

Papageorgi et al. (2007) have put forward a conceptual framework for MPA. According to this model, the factors that increase MPA are collected under three titles namely; ((a) factors influencing a performer's susceptibility to experiencing performance anxiety, (b) factors influencing a performer's task efficacy, (c) factors related to the performance environment.

(a) Components of the factors influencing a performer's susceptibility to experiencing performance anxiety are explained as; gender, age, individual differences and personality factors, trait anxiety, negative self-concept, low self-efficacy, sensitivity to evaluation by others, entity theory of ability, negative outcome expectancies, quality of achievement attributions, insufficient development of metacognitive skills, limited performing experience, previous experiences and occupational stress. (b) Factors influencing a performer's task efficacy is formed of; inadequate preparation, surface approach to learning, motivation for achievement related to fear of failure, high task difficulty and value, anxiety coping strategies factors.(c) Factors related to the performance environment are classified under three titles as; presence of an audience perception of high self-exposure, unsatisfactory performance conditions.

In the literature; there are many studies about the MPA levels of children, adolescents, and university students, professional and amateur musicians and etc. Fishbein et al. (1988) studied medical problems of 2,212 professional musicians working in 47 orchestras. The problems faced by the musicians were searched in two headings as: musculoskeletal problems (32 items) and non-musculoskeletal problems (24-items). Among 56 medical problems, 16% of the musicians defined stage fright as the most serious problem. Also acute anxiety had a substantial rate with 8%. Steptoe and Fidler (1987) examined the stage fright of music students, professional and amateur orchestra musicians (n = 146). It was found that music students had the highest level of stage fright followed by amateur and professional orchestra members. In their study about flute players (n = 142) Sinico et al. (2012) reached a similar conclusion, whereas they stated that the level of anxiety of flute players during the performance was very high. These results demonstrate the importance of the experience with regard to stage fright. Osborne and Franklin (2002) studied the MPA levels of professional, amateur musicians, and music students in the context of the cognitive processes of social phobia. They stated that the MAP level was high during formal performance. Wesner et al. (1990) concluded that 16.5% of music students at the university level were affected negatively by MPA in terms of performance quality. Lockwood (1988) reached a similar conclusion for secondary school-aged students in music.

Kolb's experiential learning model and learning styles

Experiential Learning Theory (ELT) is a holistic and multilinear theory blending the approaches of scientists, such as John Dewey, Kurt Lewin, Jean Piaget, William James, Carl Jung, Paulo Freire, and Carl Rogers who contributed to learning and development with theories that they created in the 20th century. According to ELT, learning is the process of the formation of information created through the transformation of experience (Kolb and Kolb, 2005). ELT is based on six propositions that are expressed by these scientists. Kolb (1984) explained six propositions as follows:

1. Learning is a process. The focal point to enhance learning is the engagement of students to a structure where the most effective feedback can be taken from students and teachers can perform the best.
2. Each instance of learning is actually re-learning. To perform teaching in the easiest and most useful way, a process that is based on the student's ideas and beliefs should be established.
3. Elements that continue the learning process are conflicts, differences, and conflicts.
4. Learning is a holistic process of adaptation to the world. It requires an integrated functioning of thinking, feeling, perceiving, and behaving.
5. Learning is formed of humans and interactions around environment and processes working together.
6. ELT proposes a cycle where knowledge is created and then recreated.

According to experiential learning theory, abstract concepts are transformed into experiences and the newly created concepts are involved in the acquisition of new experiences (Gencel, 2006). According to the experiential learning, the approach to learning is the result of the experiences gained previously. However, individuals do not learn in the same way always (Kolb, 2000). Experiential learning is made up of four learning modes. These are: Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), Active Experimentation (AE). Those using the CE mode establish relationships with people sensitively and learn by experiencing. Those in the AC group learn by reflecting. Before deciding, they observe carefully, and they can look at events from different perspectives. Those using the AC modes learn by thinking. They plan in a systematic way. Logic, concepts, and ideas have an important place. While developing theories and solving problems, a scientific approach is important. For those in

the AE group, learning by doing is essential. They take risks and they are entrepreneurs (Kolb, 2005).

According to Kolb's Experiential Learning Model, there are two learning dimensions resulting from the combination of these four learning modes (prehension and transformation) and there are two learning ways based on these dimensions. These are created as: CE-AC (prehension= *the grasping of information from experience*) and RO-AE (transformation= *the processing of grasped information*) (Cassidy, 2004). Kolb, created four quarters with angles between these two dimensions defined and each quarter as a learning style. The basic idea is that when experiences are offered as formal and conceptual and some conversions - transfers are carried out between experiences and learning takes place (Gencel, 2008). These learning styles are classified as diverging, assimilating, converging, and accommodating.

Individuals in the diverging style, approach concrete situations with different perspectives. Instead of moving immediately in response to the incidents, they prefer to observe. Individuals with this learning style have positive traits of using imagination, perception, ability to understand people, recognizing problems, having a broad perspective about situations with brainstorming techniques and negative traits of inability to make decisions and inability to utilize opportunities problems (Kolb, 1993). They are compatible with professional models such as several areas of art, psychology, nursing, social works, theater, literature, design, media, and journalism. They have characteristics of data collection, sensitivity to values and setting up a complex creativity relationship between events. Those in the assimilating group are good at understanding knowledge and putting knowledge in a brief and concise logical form as well as making theoretical models. Thinking and reflecting are their ways of learning. They are not very interested in the people; rather, they are concerned with ideas and abstract concepts. For people with this learning style, being logical for theory is more important than the practical aspect. They are not very good at practical works. They make an induction that they can reach to a whole using the advantages of different observations. The opinions of experts or teachers are a very important source of information for them. Since they prefer to listen to and process the information with their own thoughts, traditional schools are the best learning environment for them (Kolb and Kolb, 2005). They are compatible with professional models like physics, biology, mathematics, educational sciences, sociology, law, and theology. They are qualified in data editing, building conceptual models, and conducting qualitative data analysis (Kolb, 2005). Individuals who prefer the converging style are successful in decision making and problem solving issues. Thinking and doing are their ways of learning. Deductive reasoning, decision making, problem solving, and determining problems are the powerful sides of individuals having the ability to learn in this style. Inability to handle and test works and being away from the focal point and having dispersed ideas are the weaknesses of those with this learning style (Kolb, 1993). They are successful in finding the practical applications of theory and thoughts (Stenberg and Zhang, 2001). Individuals with an accommodating learning style have characteristics to plan, execute decisions, and take part in new experiences. They learn by doing, living, and feeling. They seek opportunities to use learning for solutions to new problems. Teachers should be an outside observer. In such individuals, the inability to use time effectively and the inability to be directed to a target cause problems (Aşkar and Akkoyunlu, 1993). In their professions, they use their skills, such as establishing close relations with people, research opportunities, and up to the benefit gained from opportunities and to influence/lead other individuals (Kolb, 2005).

Gumm (2004) examined the effects of learning styles and the motivation levels of middle and high school choral students (n = 273) to their perception of music teaching styles. The highest score type in the learning modes of students has been stated to be AC. Moore (1990) examined the relationship between learning styles (Gregorc Style Delineator and the Edmonds Learning Style Identification Exercise) and music composition through high school instrument students (n = 67). In the literature, there are few studies on the relationship between the learning styles and music field (Zhukov, 2007; Deniz, 2011; Okay, 2012; Zahal, 2014; Kurtuldu and Aksu, 2015). It seems that there is a deficiency in the literature with regard to the examination of the music field and learning styles with other types of anxieties. However, in other areas outside of music there are many studies searching the relationship between anxiety and learning styles (Bailey et al., 1999; Lenehan et al., 1994; Ayersman, 1996; Sloan et al., 2002; Onwuegbuzie, 1998; Onwuegbuzie and Jiao, 1998; Ayersman and Reed, 1995; Hadfield et al., 1992).

MATERIALS AND METHODS

Research model

In this study, the relationship between the learning style of music teacher candidates, musical performance anxiety, and instrument fields was searched. In this respect, research is conducted in the framework of relational approach scanning that addresses the changes of multiple variables together (Karasar, 2007). In addition, since the musical performance anxiety of the music teachers is compared by the instrument field and learning styles, a causal comparative approach that searches the variables affecting the causes of a situation that emerged in the study was also used (Büyükztürk et al., 2010).

Study group

The study group comprises students (N = 99) studying at the Music Education Program (all classes) at Inonu University Faculty of Education in the 2014-2015 academic year. Students' class degree

distribution was 21.2% for the first year students, 21.2% for the second year students, 26.3% for the third year students and 31.3% for the fourth year students. 49.5% of music teacher candidates were between the ages of 17 and 20 and 46.5% of them were between 21-24% ages while the remaining small number of students were 25 years and older. Students had a balanced distribution according to the class level. 65% of the study group consisted of female students and 35% male students; 75.8% of the students graduated from Anatolian Fine Arts High School, which offers professional music education and 24.2% have graduated from other schools. The distribution of students according to their singing and playing area is as follows: 55% of strings were the major group in this distribution; flute (14.1%); bağlama (9.1%); classic guitar (8.1%); vocal (8.1%) and piano (5.1%). The distribution of the strings group which had the highest rate in singing and playing area is as follows: 32.3% violin, 12.1% violoncello, 8.1% viola, 3% contrabass.

Data collection tools

The data collection instruments used in the study are Kenny Musical Performance Inventory (K-MPAI) and Kolb Learning Style Inventory Version-III (LSI-III).

K-MPAI

K-MPAI was developed by Kenny et al. (2004) on the basis of the theory of Barlow (2000) depending on anxiety based on demotion (α = .94). Articles are formed in particular in relation to attentional shift; memory bias and physiological arousal comprised factors such as task or self-evaluative focus, fear of negative evaluation, etc. recalling anxiety and referring to each of Barlow's theoretical components, such as "uncontrollability, unpredictability, negative effect, situational cues" (Kenny and Osborne, 2006). This inventory consists of 26 items on a 7-point Likert type scale. K-MPAI was revised in 2009, and configured with 40 items under three broad categories and having a 12-factor structure. These categories and factors are defined as early relation context (*generational transmission of anxiety, parental empathy*), b) psychological vulnerability (*depression/hopelessness, controllability, trust, pervasive performance anxiety*), c) proximal performance concerns (proximal somatic anxiety, worry/dread, pre- and post-performance rumination, self/other scrutiny, opportunity cost, and memory reliability (Kenny, 2009). The adaptation of the inventory to Turkish was carried out through music teacher candidates (n = 696). As a result of reliability and validity analysis processes of the adapted inventory formed of 12 factors in a 7-point Likert-type scale, it was determined to have a structure of 25-articles and 5 factors (α = .895). These factors are: a) negative performance anxiety, b) psychological vulnerability, c) somatic anxiety, d) self-scrutiny, e) physiological vulnerability (Tokinan, 2013). The highest possible score is 150 from inventory.

As seen in Table 1, article-total correlation values of K-MPAI ranged between .30 and .71. The reliability level was determined to be at a high level (α = .92).

LSI-3

LSU-3 is the revised third version of learning style inventory developed by Kolb (1999). In this inventory consisting of 12 items, there are four options for each item. These options are considered in the range of 1-4 points. The participant is expected to mark each item from the best favorable option to less favorable option like 4,3,2,1. Each option refers to one learning mode of Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), or Active Experimentation. The answers given to these options are collected and the total learning mode points of 12 items in LSU-3 are generated. Then, the AC-CE and AE-RO combination scores are calculated. The intersection point of these two combination scores on the learning style type grid was determined. The AE-RO point is on the x-axis, while the AE-RO point is on the y-axis. The four types of learning styles of accommodating, diverging, assimilating, and converging represent each field on the coordinates. At the last stage, it is determined as to where each learning style intersection area is located and the learning style of the participant is determined.

In the manual of inventory, the CE is shown in pink, RO is shown in yellow, AC is shown in purple, and AE is shown in green. The colors of the responses given for each item, in other words, vary. In this regard, the learning patterns for each item according to the order of items in the inventory are coded differently. The reliability analysis results of LS-3; (CE) .81, (RO) .73 (AC) .83 (AE) .78 (AC-CE).88 and (AE-RO).81 (Kolb, 1999). The Turkish version of the LS-3 was carried out by Gencel (2006) through a study group composed of 7th and 8th class students. The reliability coefficients ranged from .71 to .84. The coefficient α in this study ranged between .68 and .83, and it is similar to the values in Gencel's study.

Data analysis

Firstly, the values related to inventory are converted to Z scores. In order to determine the normal distribution status of these scores, the histograms, distribution curves, skewness-kurtosis, and K-S test values were examined.

When we see the K-S test results in Table 2, there is a significant deviation from normality at four points ($p < 0.01$, $p < 0.05$). However, when the skewness-kurtosis values are examined, it is observed that all types of scores are located at ± 3 range. According to Tabachnick and Fidell (2007), the skewness and kurtosis value of z scores between ± 3.29 ranges can be interpreted as data that is distributed normally. Kalaycı (2008) stated that the skewness-kurtosis coefficients in the ± 3 range can be evaluated as normality. In this regard, it is concluded that deviation from normality is at an acceptable level. Based on these findings, it has been decided to apply parametric statistics techniques in the research. The minimum, maximum, mean, and standard deviation data obtained from LS-3 and K-MPAI was calculated. There is a significant difference in the K-MPAI and learning modes scores according to the LSI-3 and instrument solo singing fields was examined by applying one-way analysis of variance (ANOVA), Welch's F, and Scheffe tests. To determine the relationship between K-MPAI and learning modes, Pearson correlation coefficients were calculated and visualized by point scatter graphs. To determine the size of the effects, omega squared ω^2 (one-way variance analysis) and r (Pearson) formulas were used. In the interpretation of the omega-squared value ω^2; .010 small impact level, 0.059 moderate impact level, and 0.138 large impact level factors were applied (Kirk, 1996). In the interpretation of the Pearson r value $r<.3$ weak, $.3 < r < .7$ medium and $.7 < r$ high relationship level were applied (Köklü et al., 2007). The significance level was taken as (p) and 0.05 and 01. To identify the relationship between instrument and solo singing field and LSI-3; a Chi-Square test could not be conducted because cell numbers less than 5 exceeded 20% despite combining groups logically and group deleting operation was conducted. For this reason, distribution is given only by using crosstabs.

RESULTS

The musical performance anxiety ($\overline{X}_{K\text{-}MPAI}$=70.79) of

Table 1. Reliability and item-total correlation values of K-MPAI.

Cronbach α =.92 (KMPAI Total)	
Factor-1, negative performance anxiety (14 Items) Cronbach α=0.91	**Item-total correlation**
Item 5	0.40
Item 6	0.44
Item 10	0.57
Item 11	0.69
Item 13	0.66
Item 14	0.55
Item 15	0.56
Item 16	0.66
Item 18	0.71
Item 19	0.73
Item 22	0.59
Item 23	0.62
Item 24	0.58
Item 25	0.70
Factor-2, Psychological vulnerability (7 Items) Cronbachα=. 71	
Item 1	0.31
Item 2	0.35
Item 3	0.30
Item 7	0.30
Item 8	0.61
Item 9	0.41
Item12	0.57
Item 21	0.33
Factor-3, Somatic anxiety (1 Item)	
Item 4	0.64
Factor-4, Self-scrutiny (1 Item)	
Item 17	0.55
Factor-5, Physiological vulnerability (1 Item)	
Item 20	0.63

Table 2. Kurtosis and skewness values and K-S test significance level results.

		(K-S)		
	N	**Skewness**	**Kurtosis**	**p**
N. P. Anxiety	99	0.27	-0.55	0.20
Psychological v.		0.35	-0.16	**0.02***
Somatic anxiety		-0.68	-0.44	**0.00****
Self-scrutiny		-0.31	-0.86	**0.00****
Physiological v.		-0.21	-0.93	**0.00****
K-MPAI Total		0.08	-0.54	0.20

*p<0.05, **p<0.01.

Table 3. Descriptive values of K-MPAI and learning mode scores.

Score type	N	Minimum	Maximum	$\overline{X}$	sd
Negative performance anxiety	99	4.00	79.00	38.49	17.16
Psychological vulnerability		2.00	42.00	21.21	7.64
Somatic anxiety		0.00	6.00	4.28	1.56
Self-scrutiny		0.00	6.00	3.67	1.68
Physiological vulnerability		0.00	6.00	3.13	1.74
K-MPAI Total		18.00	130.00	70.79	25.55
CE		15.00	39.00	25.84	4.76
RO		19.00	43.00	30.15	5.60
AC		17.00	48.00	31.05	5.87
AE		19.00	41.00	30.80	4.91

Table 4. One-way analysis of variance (ANOVA) Results of the K-MPAI scores according to the learning style types.

Variables	*Source*	*SS*	*df*	*MS*	*F*	*p*	*ω²*
Negative performance anxiety	B.G.	466.40	3	155.47			
	W.G.	28376.35	95	298.70	0.52	0.67	-
	Total	28842.75	98				
Psychological vulnerability	B.G.	389.84	3	129.95			
	W.G.	5326.70	95	56.07	20.32	0.08	-
	Total	5716.55	98				
Somatic anxiety	B.G.	4.92	3	1.64			
	W.G.	233.16	95	2.45	0.67	0.57	-
	Total	238.08	98				
Self-scrutiny	B.G.	2.20	3	0.74			
	W.G.	275.80	95	2.90	0.25	0.86	-
	Total	278.00	98				
Physiological vulnerability	B.G.	4.27	3	1.42			
	W.G.	293.03	95	3.08	0.46	0.71	-
	Total	297.29	98				
K-MPAI Total	B.G.	1563.03	3	521.01			
	W.G.	62403.52	95	656.88	0.79	0.50	-
	Total	63966.55	98				

music teacher candidates was found to be moderate (Table 3). When the K-MPAI factor scores were analyzed, taking into account the maximum and average scores, it is found that the factors with the highest score were in somatic anxiety ($\overline{X}_{Somatic}$=70.79), while the lowest score was found in negative performance anxiety ($\overline{X}_{Negative}$=70.79). It was found that learning modes scores demonstrated a distribution close to each other. In Table 4 and Table 5, the results of the analysis for the relationship between musical performance anxiety with learning styles and learning modes are given. As seen in Table 4, there is no significant difference in K-MPAI scores according to learning style types. In Table 5, it was found that there is significant relationship only between Psychological vulnerability and Somatic anxiety and AC scores of Music teachers (r = -0.26, -0.27, p <0.01). When the determination coefficients for these relationships, which are in the negative direction and at a weak level, are analyzed it was found that the described total variances are met at the rate of 7%.As observed in the pointer scatter graphic in Figure 1, as the Psychological vulnerability and Somatic anxiety scores decrease, the AC score increased; as the AC score increases, the Somatic Psychological vulnerability and anxiety scores decrease. As seen on the fit line in the

Table 5. Correlation (r values) between learning style modes and K-MPAI scores.

	CE	RO	AC	AE
K-MPAI Total	0.07	0.05	-0.17	0.09
Negative P. Anxiety	0.02	-0.01	-0.09	0.11
Psychological v.	0.13	0.18	-0.26**	-0.00
Somatic anxiety	0.04	0.09	-0.27**	0.16
Self-scrutiny	0.01	-0.01	-0.01	0.01
Physiological v.	0.14	-0.01	-0.19	0.11

**p<.01.

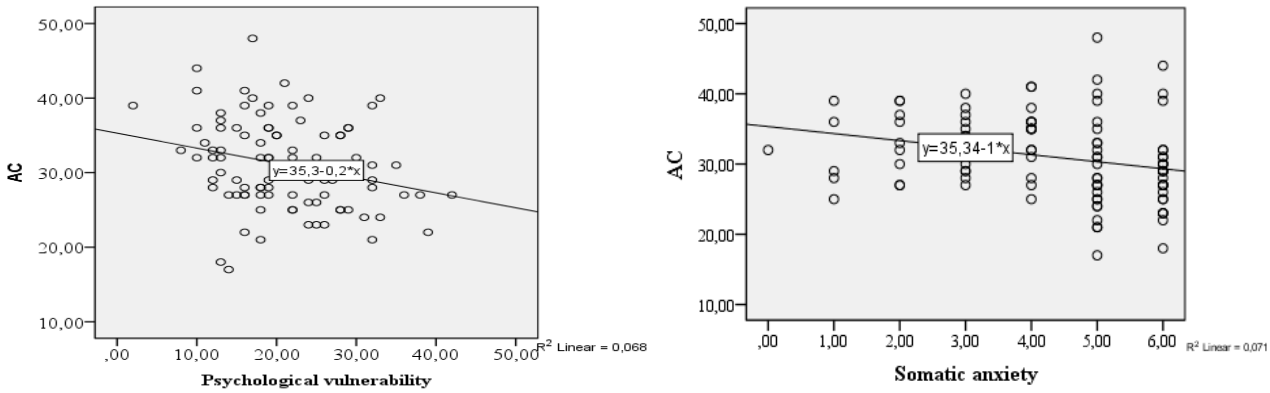

Figure 1. Point scatter graphic of correlation between with PV and SA.

total, this relationship of negative direction is at a weak level. In Table 6, the differences in the K-MPAI scores according to the instrument-singing fields were examined. It was determined that the K-MPAI scores according to the instrument field had significant differences only in the Physiological vulnerability factors [$F_{(5\text{-}93)}$ =9.63, p<0.01]. The effect size was found to be close to the highest level [ω² =0 0.12 <0.138]. According to the Scheffe test results that were conducted in order to determine in which groups differences resulted from one-way variance analysis took place, it was determined that the physiological vulnerability level of the solo singing group ($\overline{X}_{solo\text{-}singing}$=4.50) was significantly higher than the bağlama group ($\overline{X}_{bağlama}$=1.56).

The group with the highest distribution ratio among music teacher candidates was determined to be assimilating and learning style at a 45.5% rate (Table 7). This group was respectively followed by diverging with 27.3%, converging with 17.2, and accommodating group with 10.1%. When the distribution of the instrument fields is observed, the strings group with 55.6% has the highest level of distribution. Those having piano as the instrument field took place in the distribution with the lowest rate 5.1%. Despite group merging, cells with less than 5 exceeded 20%. For this reason, the chi-square test could not be conducted. Analysis was carried out only through Crosstab distribution. According to the distribution results, when the distribution of the learning style group in itself, according to the instrument-singing field, is analyzed it was identified that the music teacher candidates in the field of string instruments were dominant in all the groups except for the accommodating group. In Table 8, the difference results in the learning mode scores according to the instrument field are given, and it was determined that there was no significant difference in the learning mode scores (p> 0.05).

DISCUSSION AND CONCLUSION

Identifying values of K-MPAI

From K-MPAI, the highest point that can be reached is 150. The higher score that you received from here means high anxiety. The basic criterion in the interpretation of the middle level musical anxiety performance score is 75 (Kenny et al., 2004). It is found that the musical performance anxiety of music teachers was not high but

Table 6. One-way analysis of variance (ANOVA) Results of K-MPAI scores according to the field of instrument and solo singing.

Variables	*Source*	*SS*	*df*	*MS*	*F*	*p*	*ω²*	Sign dif. (Scheffe)
Negative performance anxiety	B.G.	1462.98	5	292.60				
	W.G.	27379.76	93	294.41	0.99	0.43	-	-
	Total	28842.75	98					
Psychological vulnerability	B.G.	224.42	5	44.88				
	W.G.	5492.13	93	59.06	0.76	0.58	-	-
	Total	5716.55	98					
Somatic anxiety	B.G.	12.72	5	2.54				
	W.G.	225.36	93	2.42	1.05	0.39	-	-
	Total	238.08	98					
Self-scrutiny	B.G.	9.22	5	1.84				
	W.G.	268.79	93	2.89	0.64	0.67	-	-
	Total	278.00	98					
Physiological vulnerability	B.G.	50.01	5	10.00				
	W.G.	247.29	93	2.66	3.76**	0.00	0.12	Solo singing-bağlama
	Total	297.29	98					
K-MPAI total	B.G.	3637.64	5	727.53				
	W.G.	60328.91	93	648.70	1.12	0.35	-	-
	Total	63966.55	98					

Table 7. Distribution of learning styles according to the field of instrument and solo singing.

		Field of instrument						
Learning style types		**Piano**	**String**	**Bağlama**	**Flute**	**Guitar**	**Solo singing**	**Total**
Diverging	f	2	17	5	2	0	1	27
	%	7.4	63.0	18.5	7.4	.0	3.7	100.0
	%	40.0	30.9	55.6	14.3	.0	12.5	27.3
Assimilating	f	2	25	3	9	3	3	45
	%	4.4	55.6	6.7	20.0	6.7	6.7	100.0
	%	40.0	45.5	33.3	64.3	37.5	37.5	45.5
Converging	f	1	10	1	2	2	1	17
	%	5.9	58.8	5.9	11.8	11.8	5.9	100.0
	%	20.0	18.2	11.1	14.3	25.0	12.5	17.2
Accommodating	f	0	3	0	1	3	3	10
	%	.0	30.0	0.0	10.0	30.0	30.0	100.0
	%	.0	5.5	0.0	7.1	37.5	37.5	10.1
Total	f	5	55	9	14	8	8	99
	%	5.1	55.6	9.1	14.1	8.1	8.1	100.0
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0

moderate ($\overline{X}_{K\text{-}MPAI}$=70.79). It may be thought here that the fact that the musical performance anxiety level of students is not very high is because the majority of study group students are graduates from Fine Arts high schools

Table 8. One-way analysis of variance (ANOVA) results of the learning mode scores according to the field of instrument and singing.

CE	*df1*	*df2*	*Welch's F*	*p*	*ω²*
	5	**18.06**	**2.18**	**0.10**	**-**

	Source	SS	df	MS	F	p	ω²
RO	B.G.	325.75	5	65.15			
	W.G.	2750.98	93	29.58	2.20	0.06	-
	Total	3076.73	98				
AC	B.G.	223.87	5	44.77			
	W.G.	3148.88	93	33.86	1.32	0.26	-
	Total	3372.75	98				
AE	B.G.	183.30	5	36.66			
	W.G.	2182.66	93	23.47	1.56	0.18	-
	Total	2365.96	98				

offering professional music education. These high schools organize plays, concerts, and such events due to their nature and educate students from an early age. In this regard, music teacher candidates are familiar with music from younger ages. In Tokinan (2014)'s study in which she examines the musical performance anxiety of music teachers according to the individual characteristics of students, she stated that students have a medium level of performance anxiety.

Kenny et al. (2004) in their study with choral musicians stated that while musical performance anxiety is a major problem for musicians, they found K-MPAI mean scores not at a high level. However, arithmetic means of musical performances anxiety in this study are lower than scores found in this study.

In a study conducted by Kenny et al. (2011) through graduate flute performers in their 20s, they found results not indicating a high level of performance anxiety in terms of K-MPAI similar to the research findings. In a study conducted by Fehm and Schmdit (2006), it has been expressed that the musical performance anxiety of students is at a moderate level. In a study conducted by Huston (2001) through the orchestral players of the Chicago Symphony Orchestra, the New York Philharmonic, the Philadelphia Orchestra, the Indianapolis Symphony Orchestra, the Milwaukee Symphony Orchestra, The Nashville Symphony, and orchestral students of the Manhattan School of Music, Northwestern University School of Music, and Indiana University School of Music: while it is concluded that students have the highest level of anxiety, he also found that the musical performance anxiety of the entire group was moderate.

In addition to these findings, there are also studies that show results with a high level of MAP. vanKemenade et al. (1995) found that the MAP levels of 36.4% professional musicians in symphonic Orchestras (n = 155) were high. Marchant-Haycox and Wilson (1992) stated that 47% of artists have a strong level of MAP.

Identifying values of learning modes and styles

The finding that the learning modes score is balanced suggests that learning styles and ways of students are diversified ($\overline{X}_{CE}$=25.84, $\overline{X}_{RO}$=30.15, $\overline{X}_{AC}$=31.05, $\overline{X}_{AE}$=30.80). Music teacher candidates, respectively, 45.5% is assimilating, 27.3% diverging, 17.2% converging, and 10.1% accommodating and it is found that the learning styles are what they preferred. In the distribution of learning style types of music teacher candidates, the highest distribution rate was found to be in the assimilating group with a rate close to half. In other words, it may be concluded that music teacher candidates are good in understanding information, to put information in a logical and concise form, developing theoretical models, preferring listening and processing information with their own ideas, feeling comfortable in teacher-centered learning environments and, therefore, in traditional schools and successful in performing quantitative data analysis (Kolb, 1999). Those who prefer the accommodating learning style had the lowest rate of distribution that they were involved in. Moving from this point, a very small portion of music teacher candidates prefer to learn by living and feeling, in which these students who learned new concepts about making use of planning in the solution of problems can be considered to be passive. Those who have the accommodating style, when considering their profession, establish a close relationship with people, influence people, leadership, and opportunities prompt action in assessing such properties. It can be said that there are a few music teachers who have these characteristics (Kolb, 2005; Aşkar and Akkoyunlu, 1993).

Deniz (2011) has found that the preferences of music teacher candidates concentrated in assimilating learning style. These findings are similar to the research in the literature. In Okay (2012)'s study based on music teacher program students as a study group, it was stated that the dominant learning style was diverging. Kurtuldu and Aksu (2015) stated that the dominant learning styles of music teacher candidates were diverging and assimilating and Zahal (2014) stated that the dominant learning styles of students taking music teacher skills exams were diverging and assimilating. In Zahal (2014)'s study, it was found that candidates having the ability of accommodating learning style were more successful.

Relationship between K-MPAI and learning modes-styles

It was found that there is no significant relation between the learning styles of music teacher candidates and K-MPAI and factor scores. However, according to the learning modes scores of students, there is a significant relationship between the psychological vulnerability and somatic anxiety levels and AC scores in the low level and in the negative direction ($r_{psychological\ vulnerability\text{-}AC=\ -0.26;\ p<0.01;}$ $r_{somatic\ anxiety\text{-}AC=\ -0.27;\ p<0.01}$). Based on these findings, it is found that students in the AC group, in other words, students depending on intellectual activities primarily in the learning process with an intellectual approach and having a high analysis power in the framework of systematic planning, experience feelings like panic less before and after any concert, play, exams, and such activities. It is also found that, as AC increases, the component levels covered by feeling worthless, hopelessness, spontaneously developing anxiety, etc. psychological vulnerability decrease albeit at weak levels.

Relationship between K-MPAI and the instrument and singing fields

It is found that the physiological vulnerability levels of music teacher candidates in the field of solo singing ($\overline{X}_{solo\ singing}$=4.50) were higher than those in the bağlama field ($\overline{X}_{bağlama}$=1.56) and the effect size level was higher [ω² = 0.12 0138]. In addition, the physiological vulnerability arithmetic mean of those in the solo singing field was the highest compared to those in the instrument field and this finding is a remarkable case that is required to be studied. In solo-singing performance, the person performs sound generation by using the structure of the body producing and transmitting sound directly. In this regard, in solo singing performance, use of physiological elements in sound production is more intense compared to the instrument field. Gruner (1995) signifies that tension in the diaphragm and vocal box causes problems in sound production. Considering that the MAP causes physiological vulnerability in individuals, this fact may have caused higher levels of physiological vulnerability of music teacher candidates in the solo-singing field. However, there is no sufficient evidence to make this assumption. Music researchers have suggested this in their research. Lorenz (2002) stated that the anxiety levels of high school students in the field of solo singing were higher for choral singing. Kenny et al. (2004) stated in their study, regarding opera chorus artists, that these artists were prone to a high level of anxiety for singing performance. Fishbein et al. (1988) stated that artists who experienced the highest level of stage fright among orchestra musicians were those in the brass group with 22% and followed by, respectively, other instruments (17%, percussion and tympani, harp, keyboards), strings with 14% and woodwind players with 14%.

Relationship between learning modes-styles and the instrument and singing fields

It was determined that there is no significant relationship between the LSI-3 learning style preferences of music teachers and the instrument field, and the string group was dominant both in the general distribution and learning style group due to the features of the study group in distribution.

Conflict of Interests

The authors have not declared any conflict of interests.

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