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INVESTIGATION OF THE RELATIONSHIP BETWEEN MUSICAL EAR TRAINING LESSON ANXIETY AND SELF-ESTEEM LEVELS OF PRE-SERVICE MUSIC TEACHERS

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Abstract

Music education can yield favourable outcomes when built upon a strong foundation of auditory training. Therefore, the study aimed to examine the musical ear training lesson anxiety levels and self-esteem levels of the pre-service music teachers in terms of various variables, exploring the relationship between the Musical Ear Training (MET) Lesson anxiety and self-esteem levels of the pre-service music teachers, and determining whether the participants' self-esteem levels have an impact on their MET Lesson anxiety. The study group of the research consisted of randomly selected 268 pre-service teachers studying in the Music Education Department of 11 state universities in Turkey during the Spring Semester of 2022-2023 academic year. The data were collected using the 'Musical Ear Training (MET) Lesson Anxiety Scale' developed by Öztürk and Kalyoncu (2018) and the Self-Esteem Assessment Form developed by Özevin and Bilen (2010). The results revealed that male participants had higher levels of MET lesson anxiety compared to female participants. Additionally, the self-esteem levels of the participants varied significantly based on their grade levels. It was also found out that anxiety levels of students who graduated from Fine Arts High Schools were found to be higher compared to those who graduated from high schools other than Fine Arts High Schools. Furthermore, the results have demonstrated that the amount of time allocated by participants for musical ear training is associated with significant differences in their MET lesson anxiety. Another significant finding in the research is the presence of a positive and low-level relationship between MET lesson anxiety and self-esteem. The relationship between the predictor variable and the criterion variable has been determined 0.146.

Keywords: Musical ear training, lesson anxiety, self-esteem, pre-service music teacher

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1. Introduction

It is a commonly known fact that early initiation of ear-training is purported to yield significant benefits for the development of musical skills (Stinson, 2021). However, aspiring music instructors who commence their professional music training after high school have limited time to enhance their musical aural skills. In Turkey, faculties of education that train music teachers continue to implement the undergraduate program introduced at the beginning of the 2018-2019 academic year. As outlined by this program, musical ear training is provided during the first year of undergraduate studies in the courses of *Western Music Theory and Practice 1 and 2*. Given its role as a foundational cornerstone for other field courses, this particular curriculum holds a considerable breadth of content; therefore, it has a high number of weekly class hours and ECTS credits among the music field courses in the undergraduate program. Endeavours aimed at cultivating musical aural skills significantly contribute to the education of musicians and instructors in music (Cruywagen, Joubert & Rhoodie, 2022). Apaydınlı (2009) emphasized the pivotal role of this course, highlighting students' ability to transfer the acquired knowledge to other subject areas. Kurtuldu (2018) pointed out the profound impact of auditory training, particularly when coupled with foundational theoretical and harmony knowledge. This underscores its extensive influence across diverse musical domains, placing strong emphasis on its notable contribution to aspiring music instructors, particularly in contexts demanding improvisational accompaniment skills.

Dictation exercises constitute one of the most extensively allocated activities within musical ear training classes. In dictation exercises, a segment of a melodic, rhythmic, or harmonic piece is typically played, often divided into small sections (e.g., two measures in length). Some students can write simultaneously while listening. However, others might momentarily retain the heard segment in their short-term memory, analyse its tonal aspects, establish rhythmic structures, and then transcribe it into notation. Musical dictation encompasses the utilization of acquired theoretical knowledge, such as note and rest values, meter systems, tonality, rhythmic structures, musical phrases, cadences, and chord knowledge. Simultaneously, students are required to showcase their aural skills at their highest-level during dictation exercises. Nevertheless, factors like fatigue, sleep deprivation, self-perception of abilities, classroom tension, and more can lead to a decline in a student's dictation performance. Consequently, anxiety related to dictation performance can arise among students (Uçal Canakay, 2021, pp. 666-667).

When theoretical knowledge about music fails to manifest in practical performance, the acquired gains remain at a cognitive level. However, music is a phenomenon that should be comprehensively addressed and transmitted through performance (Özdemir, 2012, p. 15). To ensure the success of pre-service music education students in the field of musical ear training, instructors should reinforce conveyed information through practical exercises and establish connections with other subject areas. Additionally, significant affective factors, such as

anxiety levels and self-esteem, which directly impact the achievements of pre-service students in this field, should not be disregarded.

Anxiety is defined as one of the fundamental emotions arising in response to stressful and threatening situations. The primary role of anxiety is to alert and prepare individuals for imminent dangers (Mitroviç, Todoroviç & Markoviç, 2012). Within music education institutions providing professional training, the necessity to assess and evaluate both the theoretical and performance dimensions of music, coupled with the resultant evaluation of the student, can potentially induce anxiety among pre-service teachers. The origins, causes, and sources of anxiety are often unknown to individuals. Anxiety emerges in response to a problem. People experience anxiety when they perceive that things are not going well or that a situation may not conclude favorably. Many individuals experience this in the form of unwelcome and persistent thoughts and dreams that arrive uninvited and linger (Üldaş, 2005, p. 8). Anxiety, besides leading to feelings of fear and panic, can escalate to severe levels, causing significant issues in professions that require performance (Baydağ & Başoğlu, 2018, p. 2206). Symptoms of anxiety are commonly observed intensely before and during exams. Anxiety can also persist after the exam. While moderate anxiety can positively influence students' performance, intense exam-related anxiety can negatively impact their mental performance, leading to a decline in their achievements (Casbarro, 2005, cited in Koca & Dadandı, 2019, p. 245).

Among music education students, anxiety related to performance-based activities such as ear training is recognized as a multidimensional construct that encompasses psychological (emotional), physiological, cognitive, and behavioral components. Some musicians experience anxiety at levels that can potentially impair the quality of their performances (Dobos, Piko & Kenny, p. 311). Self-esteem is one of the fundamental factors that influence the concept of anxiety. Therefore, numerous studies have been conducted in various fields examining the relationship between self-esteem and anxiety (Gürpınar, 2016; Hanton & Connaughton, 2002; Hanton, Mellalieu & Hall, 2004; Thomas, Maynard & Hanton, 2004; Wehr-Flowers, 2006). Self-esteem, as defined by Woolfolk (2005), encompasses the emotional action of valuing our self-assessments. It can be influenced by comparisons and feedback from others, including family, friends, and teachers, and can change through experiences (Vialle, Heaven & Ciarrochi, 2005, p. 40). In educational research, the concept of self-esteem is explored not only within the framework of academic self-esteem but also within the context of an individual's courage, social relationships, and belief in their abilities. Low self-esteem can lead individuals to encounter difficulties in many aspects of the educational process.

After reviewing the relevant literature, it can be observed that research on measurement and evaluation tools in field education courses of music education students is available (Girgin, 2015; Soycan & Babacan, 2019; Şeker, 2016; Özdemir, 2012; Özdemir, 2018). Furthermore, studies investigating the anxiety of music education students, especially in terms of performance anxiety, are present in the literature (Demirbatır, 2012; Doğan & Tecimer, 2019;

Şeker, 2015; Umuzdaş & Tök, 2020). However, only a restricted number of studies have specifically addressed the anxiety experienced by music education students within the domain of musical ear training (Öztürk, 2012). This research is anticipated to offer valuable insights into the practices and studies related to musical ear training, reading, and writing education in this particular domain.

In this vein, the objective of this study is to investigate the relationship between the levels of MET lesson anxiety and self-esteem among music education students in terms of various variables. In alignment with this objective, the study sought to address the following questions:

1) What are the levels of MET lesson anxiety and self-esteem among pre-service music teachers?

2) Do the levels of MET lesson anxiety and self-esteem of pre-service music teachers vary significantly based on:

a. The gender of the pre-service teachers,

b. The academic grade levels of the pre-service teachers,

c. The high schools from which the pre-service teachers graduated?

3) Does the MET lesson anxiety of pre-service music teachers vary significantly based on:

a. The amount of time allocated for musical ear training, reading, and writing exercises,

b. The status of receiving musical ear training, reading, and writing education before starting their undergraduate studies?

4) Is there a significant relationship between the MET lesson anxiety and self-esteem levels of pre-service music teachers?

5) Does the level of self-esteem among pre-service music teachers have a significant impact on their MET lesson anxiety?

2. Method

The chosen methodology for this investigation is the screening model, a form of descriptive research. The screening model aims to elucidate the prevailing conditions. Within this paradigm, the research endeavours to address questions such as "What constitutes the present state of the issue under investigation?" or "What is the current status?" The utilization of measurement instruments in tandem with statistical analyses of the data collected through these means, widely employed to attain a comprehensive sample, serves as a means of arriving at generalizable conclusions (Çepni, 2021, p. 101).

2.1. Study group

The study group of this research consists of randomly selected 268 pre-service music teachers studying in the Music Education Department of Adnan Menderes University, Balıkesir University, Bursa Uludağ University, Çanakkale 18 Mart University, Dokuz Eylul

University, Gazi University, Manisa Celal Bayar University, Marmara University, Muğla Sıtkı Kocman University, Pamukkale University and Trakya University during the Spring Semester of 2022-2023 academic year. Ethical approval for the application of measurement tools was obtained from the Dokuz Eylül University Ethics Committee to conduct this research. The demographic distribution of the study group is illustrated in Table 1.

Table 1. Distribution of the study group according to demographic information

		Study Group	
Variable	Category	f	%
Gender	Female	181	67,5
	Male	87	32,5
	Total	268	100,0
Grade	1st Grade	91	34,0
	2nd Grade	66	24,6
	3rd Grade	32	11,9
	4th Grade	79	29,5
	Total	268	100,0
High School of Graduation	Fine Arts High School	131	48,9
	Other	137	51,1
	Total	268	100,0
University of Enrolment	Adnan Menderes University	39	14,6
	Balıkesir University	22	8,2
	Bursa Uludağ University	21	7,8
	Çanakkale 18 Mart University	8	3,0
	Dokuz Eylul University	105	39,2
	Gazi University	2	0,7
	Manisa Celal Bayar University	1	0,4
	Marmara University	9	3,4
	Muğla Sıtkı Kocman University	22	8,2
	Pamukkale University	32	11,9
	Trakya University	7	2,6
	Total	268	100,0
Perception of Achievement	Successful	83	31,0
	Unsuccessful	34	12,7
	Partially Successful	151	56,3
	Total	268	100,0
Frequency of Study	Never or Only Before Exams	115	42,9
	Several Times a Week or More	153	57,1
	Total	268	100,0
Pre-Undergraduate Educational Status	Yes	219	81,7
	No	49	18,3
	Total	268	100,0

After evaluating the information presented in Table 1, it is evident that 67.5% of the participants are female, while 32.5% are male. Additionally, 34% are in the 1st grade, 24.6% are in the 2nd grade, 11.9% are in the 3rd grade, and 29.5% are in the 4th grade. Furthermore, 48.9% have graduated from fine arts high schools, whereas 51.1% have graduated from other high schools. In terms of self-perception, 31% view themselves as successful, 56.3% perceive themselves as partially successful, and 12.7% consider themselves unsuccessful. Regarding study habits, 42.9% of the participants either do not engage in individual ear training practice or solely study before exams, while 57.1% partake in ear training activities several times a week or more. In relation to pre-undergraduate education, a significant 81.7% have received formal ear training education before pursuing their undergraduate degrees, while 18.3% have not undergone such education.

2.2. Data collection instruments

In this study, the Personal Information Form developed by the researcher was utilized to gather personal information about the study group. This form includes inquiries about participants' gender, grade level, school of graduation, as well as questions aimed at capturing details concerning their individual musical ear training activities.

One of the data collection instruments employed in this research is the "Musical Ear Training (MET) Lesson Anxiety Scale. This scale, developed by Öztürk and Kalyoncu (2018), consists of 28 items and there are five options for scale items. In addition to negative statements, there are 5 positive statements in the scale. The highest anxiety score that can be obtained from the scale is 140, and the lowest score is 28. A high score indicates that the anxiety is high towards the MET lesson, while a low score means anxiety is also low. The Cronbach Alpha of the scale was found α=0,93 by the researchers. It is possible to associate the "MET Lesson Anxiety Scale" with *state anxiety* in that the scale items consist of statements about the stressful and anxious situations experienced by the pre-service teachers during the MET lesson and the exam.

Another data collection tool utilized in the study is the "Self-Esteem Assessment Form" comprising 19 items, designed by Özevin and Bilen (2010). 14 of the scale items contain positive statements and 5 of them contain negative statements. The lowest score that can be obtained from this five-point Likert scale is 19, and the highest score is 95. A low score indicates low self-confidence, and a high score indicates high self-confidence. The Cronbach Alpha coefficient of the form collected in a single factor was found to be .81. Necessary permissions were obtained from the authors of these scales prior to their use in this research.

Validity and reliability analyses were conducted for both the Musical Ear Training (MET) Lesson Anxiety Scale and the Self-Esteem Assessment Form utilized in the study. The resultant values from these analyses are showcased below.

2.2.1. Evidence of scale validity

Confirmatory Factor Analysis (CFA) was employed to obtain evidence of the construct validity of the utilized Ear Training (MET) Lesson Anxiety Scale and Self-Esteem Assessment Form. Fit indices obtained from the confirmatory factor analysis for the scales are displayed in Table 2.

Table 2. Fit index values of the scales

Fit Index	Acceptance Criteria	Musical Ear Training (MET) Lesson Anxiety Scale	Self-Esteem Assessment Form
χ^2/sd	χ^2/sd<5 (Sümer, 2000)	1486.553/350	838.865/208
		4.247	4.033
RMSEA	RMSEA<0.10 (Kline, 2005)	0.076	0.059
SRMR	SRMR<0.08 (Brown, 2006)	0.024	0.052
NFI	NFI>0.90 (Schermelleh, Moosbrugger& Müller, 2003)	0.900	0.901
IFI	IFI>0.90 (Schermelleh, Moosbrugger& Müller, 2003)	0.910	0.900
GFI	GFI>0.90 (Schermelleh, Moosbrugger& Müller, 2003)	0.898	0.896
CFI	CFI>0.90 (Schermelleh, Moosbrugger& Müller, 2003)	0.910	0.904

After reviewing Table 2, it can be observed that the Musical Ear Training (MET) Lesson Anxiety Scale and Self-Esteem Assessment Form exhibit validity, with the majority of fit indices falling within the accepted range.

2.2.2. Evidence of scale reliability

To obtain evidence of the reliability of the Musical Ear Training (MET) Lesson Anxiety Scale and Self-Esteem Assessment Form utilized in the study, Cronbach's Alpha coefficients were calculated, as displayed in Table 3.

Table 3. Reliability results of the scales

	The Musical Ear Training (MET) Lesson Anxiety Scale	Self-Esteem Assessment Form
Cronbach's Alpha	0.938	0.857
Number of Items	28	19

Following an analysis of Table 3, it is observable that the scores obtained from both the Musical Ear Training (MET) Lesson Anxiety Scale and Self-Esteem Assessment Form are reliable (Özdamar, 2004).

2.3 Data analysis

The scales administered via Google Form were transferred to computer software platforms using EXCEL and SPSS 24. Necessary adjustments were made to rectify erroneous or

incomplete data. Outliers were scrutinized in the acquired dataset, and after examining standardized Z-scores within the range of (+3, -3), it was determined that there were no outliers present.

In the process of data analysis, both SPSS 24 and LISREL software packages were employed. For investigating the construct validity of the scales, Confirmatory Factor Analysis (CFA) was employed. Reliability was assessed through the calculation and interpretation of Cronbach's Alpha coefficients for internal consistency. To determine the appropriate analysis method, skewness and kurtosis coefficients of the obtained scores were examined both overall and with respect to each demographic variable. Skewness and kurtosis values within the range of (-2, +2) serve as evidence of normal distribution of scores (Kim, 2013).

In evaluating the normality of the scores derived from the scales, differences were analyzed with respect to gender, pre-undergraduate educational status, type of high school graduation, and frequency of study. Independent samples t-test was employed for examining differences, ANOVA for grade level differences, Pearson correlation coefficient for relationships, and regression analysis for examining effects.

3. Findings

This section presents the findings and their corresponding interpretations obtained from the research.

3.1. Descriptive statistics for scale scores

Descriptive statistics for the scores obtained from the used MET Lesson Anxiety Scale and Self-Esteem Assessment Form are tabulated in Table 4.

Table 4. Descriptive statistics

Score	N	Minimum	Maximum	Mean	Standard Deviation	Converted Mean
Anxiety	268	33.00	136.00	88.1119	22.90500	3.147
Self-Esteem	268	36.00	91.00	62.0597	8.63775	3.266

As observed in Table 4, the students' average anxiety score is 88.112, and their average self-esteem score is 62.060. The converted (on a 1-5 Likert scale) mean anxiety score derived from the anxiety scale is 3.147, indicating that students, on average, possess a moderate level of anxiety. Furthermore, the converted mean self-esteem score derived from the self-esteem scale is 3.266, indicating that students, on average, possess a moderate level of self-esteem.

3.2. Analysis of differences according to demographic variables

In this section, the differences in scores obtained from the MET Lesson Anxiety Scale and Self-Esteem Assessment Form based on demographic variables are examined.

3.2.1. Analysis of differences according to gender

The results of the Independent Samples t-test conducted to determine whether there are differences in scores obtained from the used MET Lesson Anxiety Scale and Self-Esteem Assessment Form according to gender are outlined in Table 5.

Table 5. Differences according to gender

	Gender	N	$\bar{x}$	Standard Deviation	t	sd	p
Anxiety	Female	181	85.735	23.070	2.474	266	.014
	Male	87	93.058	21.869			
	Total	268					
Self-Esteem	Female	181	62.111	7.608	0.139	266	.890
	Male	87	61.954	10.510			
	Total	268					

When examining Table 5, it is observed that the mean self-esteem scores of the participants do not show statistically significant differences according to gender (t=0.139, p>0.05). The mean MET Lesson anxiety scores (t=2.474, p<0.05) show statistically significant differences according to gender. The mean MET Lesson anxiety score of males ($\bar{X}$= 93.058) is higher than that of females ($\bar{X}$= 85.735).

3.2.2. Analysis of differences according to grade level

The results of the ANOVA conducted to determine whether there are differences in scores obtained from the used MET Lesson Anxiety Scale and Self-Esteem Assessment Form according to grade level are presented in Table 6.

Table 6. Results of analysis of differences according to grade level

		Sum of Squares	sd	Mean Squares	F	p	Difference
Anxiety	Between Groups	752.379	3	250.793	0.475	.700	-
	Within Groups	139326.262	264	527.751			
	Total	140078.642	267				
Self-Esteem	Between Groups	591.472	3	197.157	2.693	.047	1-4
	Within Groups	19329.573	264	73.218			2-4
	Total	19921.045	267				

When examining Table 6, it is observed that the mean MET Lesson anxiety scores of the students (F(3,267)= 0.475, p>0.05) do not show statistically significant differences according to the grade level they are studying in. The mean self-esteem scores of the students (F(3,267)= 2.693, p<0.05) show statistically significant differences according to the grade level they are studying in. The mean self-esteem score of students studying in the fourth grade ($\bar{X}$= 64.241) is higher than the mean self-esteem scores of students studying in the first grade ($\bar{X}$= 60.956) and second grade ($\bar{X}$= 60.818).

3.3.3. Analysis of differences according to high school of graduation

The results of the independent samples t-test conducted to determine whether there are differences in scores obtained from the used MET Lesson Anxiety Scale and Self-Esteem Assessment Form according to the high school of graduation are detailed in Table 7.

Table 7. Results of analysis of differences according to high school of graduation

	High School Type	N	$\bar{X}$	Standard Deviation	t	sd	p
Anxiety	Fine Arts	131	91.137	23.319	2.128	266	.034
	Other	137	85.219	22.203			
	Total	268					
Self-Esteem	Fine Arts	131	62.649	8.924	1.092	266	.276
	Other	137	61.496	8.349			
	Total	268					

Following an in-depth examination of Table 7, it is observed that the mean self-esteem scores of the participants (t=1.092, p>0.05) do not show statistically significant differences according to the high school they graduated from. However, the mean MET Lesson anxiety scores of the participants (t=2.128, p<0.05) show statistically significant differences according to the high school they graduated from. The mean anxiety score of students who graduated from fine arts high schools ($\bar{X}$=91.137) is higher than the mean anxiety score of students who graduated from other high schools ($\bar{X}$=85.219).

3.3.4. Analysis of differences according to study frequency

The results of the independent samples t-test conducted to determine whether there are differences in scores obtained from the used MET Lesson Anxiety Scale according to the study frequency of the pre-service teachers' individual ear training studies are provided in Table 8.

Table 8. Results of analysis of differences according to study frequency

	Study Frequency	N	$\bar{X}$	Standard Deviation	t	sd	p
Anxiety	Never or only before exams	115	83.435	22.695	2.939	266	.004
	A few times a week or more	153	91.628	22.501			
	Total	268					

When delving into Table 8, it becomes clear that the mean MET Lesson anxiety scores of the participants (t=2.939, p<0.05) show statistically significant differences according to the study frequency of their individual ear training studies. The mean anxiety score of students who study a few times a week or more ($\bar{X}$= 91.628) is higher than the mean anxiety score of students who never study or only study before exams ($\bar{X}$= 83.435).

3.3.5. Analysis of differences according to pre-bachelor's degree MET lesson status

The results of the independent samples t-test conducted to determine whether there are differences in scores obtained from the used MET Lesson Anxiety Scale according to the pre-bachelor's degree MET training status of the pre-service teachers are shown in Table 9.

Table 9. Results of analysis of differences according to pre-bachelor's degree MET lesson status

	MET Training Status	N	$\bar{X}$	Standard Deviation	t	sd	p
Anxiety	I received training	219	89.155	23.251	1.581	266	.115
	I didn't receive training	49	83.449	20.879			
	Total	268					

Upon examining Table 9, it can be seen that the mean MET Lesson anxiety scores of the participants ($t=1.581$, $p>0.05$) do not show statistically significant differences according to the pre-bachelor's degree MET training status.

3.4. Correlation test results

The relationships between the scores obtained from the used MET Lesson Anxiety Scale and the Self-Esteem Assessment Form in the study are depicted in Table 10.

Table 10. Findings of Pearson correlation test

		The Self-Esteem Assessment Form
MET Lesson Anxiety	Pearson Correlation Coefficient	.146*
	P	.017
	N	268

After a comprehensive assessment of Table 10, it can be observed that there are statistically significant positive low-level correlations between the mean MET Lesson anxiety scores and the mean self-esteem scores of the participants ($r=0.146$, $p<0.05$).

3.5. Regression analysis results

The regression analysis results conducted to examine whether the score obtained from the Self-Esteem Assessment Form, the predictor variable, has an effect on the score obtained from the MET Lesson Anxiety Scale, the predicted variable, are tabulated in Table 11 and Table 12.

Table 11. Model summary and ANOVA results

	Sum of Squares	sd	R	R^2	F	p
Regression	2990.343	1	.146	.021	5.802	.017
Residual	137088.299	266				
Total	140078.642	267				

Upon a close examination of Table 11, the calculated relationship between the predictor variable and the predicted variable is 0.146. This relationship is of a low level. Students' self-esteem scores explain 2.1% of the variance in MET Lesson anxiety scores. When analyzing the results, it can be observed that the model established to predict anxiety scores based on self-esteem scores is statistically significant ($F(1, 267)=5.802$, $p<0.05$).

Table 12. Regression model

Variable	*Coefficient*	*Std. Error*	β	t	p	$r_{pairwise}$	$r_{partial}$
Fixed	64.068	10.078		6.357	.000		
Self-Esteem	.387	.161	.146	2.409	.017	.146	.146

According to the standardized regression coefficient (β) delineated in Table 12, the regression equation regarding the predictor variable predicting anxiety scores is as follows:

MET Lesson Anxiety = 64.068 + 0.387 Self-Esteem

A one-unit increase in students' self-esteem scores results in a 0.387 unit increase in their anxiety scores.

4. Discussion and Conclusions

This research was conducted to investigate the relationship between pre-service music teachers' MET lesson anxiety levels and self-esteem levels in terms of various variables. The results obtained in light of the research findings are outlined below.

Upon analyzing the descriptive statistics results of MET lesson anxiety and self-esteem levels of the pre-service music teachers, it is apparent that participants' anxiety and self-esteem levels are at a moderate level. Another finding of the research is related to the results concerning MET lesson anxiety and self-esteem levels based on gender. When participants' MET lesson anxiety levels are examined by gender, a significant difference is observed. According to the research results, male participants experience higher MET lesson anxiety compared to female participants. This result is in line with the study conducted by Güz and Dilbaz (2003), which indicates a parallel outcome in terms of higher anxiety scores among males compared to females. However, Çoban and Karaman (2013) found that male university students aged 20 and below exhibited higher somatic and subjective anxiety symptoms compared to other age groups. On the other hand, there are studies in the literature that demonstrate higher anxiety scores among females in comparison to males (Dursun and Aytaç, 2009; Topoğlu, 2020; Umuzdaş and Tök, 2020; Wehr-Flowers, 2006).

The course 'Musical Ear Training' is addressed from both theoretical and practical perspectives. The practical aspects of the course might require students to feel comfortable among their peers. Social anxiety-related differences in behaviours between females and males can exist. In our country, females are observed to express themselves more comfortably in social settings, whereas males tend to experience more discomfort in areas such as group

participation, public speaking, and singing in front of an audience. Particularly among male students who have recently commenced university education following their adolescence, it can be inferred that they might feel shy in this new social environment. The heightened anxiety of male students in practical areas such as repeating sounds or melodies, and reading solfège might be due to these reasons. Parçal (2018, p. 86) asserts that qualities such as easy communication with others, healthy self-expression, emotional control, and risk-taking are more pronounced in females compared to males. In future studies, an assessment tool for measuring students' social anxiety, used alongside the Musical Ear Training (MET) Lesson Anxiety Scale, can be employed to examine whether this relationship exists. However, the self-esteem levels of pre-service music teachers did not significantly differ based on gender. This finding is consistent with the results related to gender in Soytok Nalçacı's research on self-esteem levels of students who play musical instruments and those who do not (2020).

Another outcome of the study pertains to the MET lesson anxiety levels and self-esteem levels of participants based on their grade level. No difference was observed in terms of participants' MET lesson anxiety levels. However, participants' self-esteem levels exhibited a significant difference based on grade variables. The self-esteem levels of fourth-year students were found to be higher compared to first and second-year students. As students advance in their grade levels, their knowledge and experiences in music education also increase. As students proceed to the fourth year, they have completed the majority of both music education and pedagogical formation courses. Additionally, as their age advances, they gain experience in various fields beyond their education. This circumstance can explain the higher self-esteem levels of fourth-year students.

Regarding the results related to the high school of graduation, participants' self-esteem levels did not significantly differ based on the high school they graduated from. However, participants' MET lesson anxiety levels showed a statistically significant difference based on the high school they graduated from. Anxiety levels of students who graduated from Fine Arts High Schools were found to be higher compared to those who graduated from high schools other than Fine Arts High Schools. Students in Fine Arts High Schools receive musical ear training education and comprehend the significance of aural skills. They acknowledge that the exercises performed in this course have a direct impact on other subject areas and recognize the importance of possessing advanced aural skills to excel as a musician or music educator. Therefore, it can be suggested that students from Fine Arts High Schools might experience anxiety concerning their success in the field of musical ear training. Upon graduation from Fine Arts High Schools, students decide to pursue professional music education, requiring them to take entrance exams for university music departments. These exams primarily assess students' aural skills. Considering their Fine Arts High School background, students' families, friends, and teachers might hold high expectations for their success in these entrance exams. The anxiety observed in students who graduated from Fine Arts High Schools could be related to the fear of not meeting these high expectations, particularly from their close circles. In the existing literature, there are also studies demonstrating that anxiety levels do not significantly

differ based on the high school of graduation (Özevin Tokinan, 2014). A study that explored the performance anxiety levels of music education students found that there was no significant difference based on the high school of graduation (Umuzdaş and Tök, 2020).

Another result of the study is related to the examination of the relationship between the MET lesson anxiety levels of pre-service music teachers and the amount of time they allocate for musical ear training practice. In light of this outcome, participants' MET lesson anxiety levels varied significantly based on their study time. Students who study the course several times a week or more often experience more anxiety compared to those who do not study at all or only study before exams. Among the courses in music education, many exercises in musical ear training, such as playing musical instruments and singing solo or in groups, and harmonizing music pieces, form the foundation. As music education students understand the significance and value of musical ear training exercises, their anxiety levels concerning their success in this field might increase, which can also influence their study habits. The underlying reason for students with high MET lesson anxiety engaging in more practice is undoubtedly their desire to succeed.

Another outcome of the research pertains to the MET lesson anxiety levels of pre-service music teachers based on whether they received MET lesson before starting their undergraduate education. The result of the research indicated that whether pre-service music teachers received musical ear training before their undergraduate education did not create a statistically significant difference in terms of anxiety levels.

One of the conclusions drawn from the research results is the relationship between participants' MET lesson anxiety levels and their self-esteem levels. When examining this result, a positive but low-level statistically significant relationship was found between participants' average MET Lesson anxiety scores and self-esteem scores. While numerous studies are documented in the literature that illustrate a negative relationship between anxiety and self-esteem, especially in studies focused on music performance anxiety (Chan, 2011; Koca & Dadandı, 2019; Otacıoglu, 2016; Özevin Tokinan, 2014), the present research findings suggest an alternative direction. Similar to the individual study time results seen in the study, pre-service music teachers engage in more studying behavior due to their anxiety to succeed in this field. Success serves as a motivating factor for students, and achievement in the field of musical ear training requires practice outside of class hours. The conscious planning and execution of studies with a sense of responsibility and motivation for success among students are believed to play a supportive role in forming positive self-esteem. When effort and diligence are employed to mitigate the likelihood of failure, it is plausible to posit that self-esteem can increase along with confidence.

Nielsen (1998, cited in Blix, 2013) conducted a study on music academy students, revealing that self-efficacy is a significant factor in terms of students' cognitive and metacognitive participation in their learning processes. In addition to that, Nielsen underlined that self-esteem is a significant emotion required for being a musician, regardless of its level.

The final result of the research relates to examining the impact of participants' self-esteem levels, which are the predictor variable of the study, on their MET lesson anxiety levels, which are the dependent variable of the study. According to this result, the relationship between self-esteem (predictor variable) and anxiety (dependent variable) is measured to be 0.146. This result indicates a low-level relationship. A one-unit increase in students' self-esteem scores causes a 0.387-unit increase in their anxiety scores. When students feel the desire to succeed, they might experience anxiety for a particular situation. A certain level of anxiety originating from high self-esteem and the desire to achieve can be considered as significant driving forces for success. However, when anxiety reaches high levels, it can lead to a decrease in student performance, as excessive anxiety tends to overwhelm the mind. Therefore, assessing students' levels of anxiety and stress is of great importance.

In the context of educational process, learning principles remain the same, while the implementation strategies may exhibit variations. Of utmost significance is the establishment of objectives and the continuous monitoring of progress in tandem with these objectives. Progressing with small steps and gradually adding requirements as students' skills and self-esteem improve can be beneficial (Woolfolk & Shaughnessy, 2004). It would be useful for music education students to take responsibility in line with their goals within the scope of musical ear training, reading, and writing exercises, cope with the challenges they encounter during the learning process, and attain success. To accomplish this, instructors should determine and monitor the levels of self-esteem and anxiety, employ suitable instructional approaches and strategies tailored to students' needs, and encourage them to work toward their goals.

Declaration of Conflicting Interests and Ethics

The author declares no conflict of interest.

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