




## An Analysis of the Relationships between Secondary School Students' Creativity, Music Achievement and Attitudes

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## An Analysis of the Relationships between Secondary School Students' Creativity, Music Achievement and Attitudes

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### Abstract

This study aimed to investigate secondary school students' music achievement, attitudes towards music and creativity based on the variables of gender, school type, grade level and achievement. A causal-comparison design was used for this study. 246 secondary school students studying in some schools in Mersin and Konya provinces were randomly selected by using convenience sampling method. Data were collected through Kaufman Creativity Test, Music Achievement Scale and Music Lesson Attitude Scale. Data were analyzed using independent samples t-test, one-way analysis of variance and regression analysis techniques. The results revealed that female students had higher creativity scores based on attitude towards music lessons and artistic performance. Significant differences were found in music achievement, attitude and creativity mean scores in terms of school type, grade level and achievement of students. Finally, there were significant relationships between the creativity levels of secondary school students and their music achievements and attitudes. Considering the results obtained, suggestions for implementation were provided.

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### Introduction

Music lessons, by their nature, are active and based on practical skills and put the students at the centre of the learning of the lesson. Thus, students' thinking skills, especially creativity, play an important role in realizing the achievements of the course and overcoming the problems they encounter (Aksu, 2015; Bishop, 2018). Although the students participating in music lessons have similar characteristics, each has unique features. The diversity of cognitive, affective and psychomotor characteristics of the students brings the individual differences and richness to the forefront in learning (Kaleli, 2020a, 2021a; Kibici & Sarıkaya, 2021; Kilincer, 2021; Senemoğlu, 2004; Yılmaz & Sünbül, 2002). In particular, in terms of individual differences in mental, cognitive, thinking skills and attitudes affect students' learning performance at a high level. Studies in the literature on the acquisition of music focused on learning strategies, learning styles (Cano-Garcia & Hughes, 2000; Clarke, Lesh, Trocchio & Wolman, 2010; Yağışan, Sünbül & Yücalan, 2007a) and creative thinking (Bishop, 2018; Clarke, 2002; Daikoku, 2019; Nagy, 2017; Sawyer, 2009). Especially, the role of creativity in music acquisition and attitudes has been the subject of considerable debate.

Individuals have significant talent differences in terms of creativity. Individuals with high creative power and talent generally put forward much more original thoughts and views. Another important difference that distinguishes creative people from others is that the former can think much more freely and be flexible (Meron, 1994). Creative thinking requires the student's constant searching for answers to many questions such as, "what?, where?, how?, how much?, what is known about it?, what can be said?, what if it is...?" Then, it is necessary to conduct deep research and analysis about the answers to the questions "what else?, what else could it be?" Since mentally strong students learn to think and overcome the perceptual, emotional and expression barriers that inhibit thinking, they are now ready and encouraged to produce unique, original new approaches and solutions to the problems they encounter (Sungur, 1997).

Creativity is the ability to establish relationships that have not been established before, and thus to put forth new experiences, opinions and products within a new thinking scheme. Therefore, creativity exists in all emotional and mental activities, in all kinds of work and pursuits (San, 2017). Torrance (1995), who especially emphasizes the importance of developing creative thinking during school years, provides suggestions regarding creativity as follows:

- Increasing the sensitivity of children to stimuli from the environment.
- Encouraging the skilful use of objects and ideas
- Tolerating new views.
- Providing opportunities to put ideas into trial runs.
- Maintaining the creative air dominance in the classroom.
- Teaching the child that creative thinking is valuable.
- Developing constructive criticism rather than mere criticism.

There is a variety of views on creativity. The first of these is, absolute creativity, and there are no criteria for creativity. The area where the creation process takes place is important in terms of creativity (Lytton, 1971; Sünbül, 2002). According to the second view, criteria for creativity can vary from culture to culture throughout history. However, we can argue that in every creativity product, there is room and accumulation for creativity in that field. The third view is that creativity requires preparation. We can argue that anyone who is ready and willing to produce any creative product cannot be a creative individual.

Creativity is often beyond our power of will and control (Lytton, 1971). The creative process is defined as a series of thoughts and actions that lead to original and appropriate productions (Botella et al., 2016; Botella, Zenasni & Lubart, 2018; Lubart et al., 2015). Art is considered an archetypal field of creativity research (Glaveanu et al., 2013; Kaufman, 2012), often complemented by research on scientific, musical, design-oriented and literary creativity (Schlewitt-Haynes et al., 2002; Stanko-Kaczmarek, 2012). Even though there is some overlap between different creative fields, each field has its own characteristics (Botella & Lubart, 2015; Sünbül, 2000).

Beyond the general definition, creativity is a multifaceted construct that can be expressed in many ways, domains and dimensions. Artistic, scientific, technical or any application of creativity is suggested as specific

forms in previous studies (Biçer, 2021; Daher & Anabousy, 2020; Davis et al., 2011; Kaufman, 2012; Kozhevnikov et al., 2013; O'Byrne et al., 2018; Saricam & Yildirim, 2021; Sönmez Ektem & Sünbül, 2007; Sünbül, 2002; Torrance, 1962). Moreover, each different form of creativity includes different fields and areas such as design, screenwriting and craftsmanship (Carson et al., 2005; Kaufman, 2012; Glaveanu et al., 2013). Thus, the concept of artistic creativity, which is one of these dimensions, is mentioned below.

It is seen that there are different perspectives on the formation of the concept of artistic creativity. Fromm talks about two kinds of creativity in the field of art. The first of these is a work that can be developed and learned by practicing with different methods, depending on the ability such as painting, writing a poem or novel, composing music and revealed after this process. The second one is the creative attitude and behavior that is the basis of every field of creativity. This type of creativity may not be an unearthed work. While it is defined as talent in the first, it is a character trait formed by the development of situations such as seeing, perceiving and reacting in the second (Akca & Kavak, 2020; San, 2017). For Dewey, artistic work is not simply the outcome of either the artist or the work of art. Creative expression is precisely “positioned” in the interaction between the self and the art object (Benson, 1993; Glavenau et al., 2013). Kaufman (2012) mentioned five dimensions, including artistic creativity, in the creativity scale he developed for students of different age groups. These are academic creativity, scientific/mechanical creativity, creativity and originality in the field of artistic performance, and artistic creativity.

There are many variables that make a difference in learning in secondary school music education. Learning environment, knowledge, skills, abilities, thinking and mental processes of the student, tools, materials and materials used can be listed as some of these. Among these, variables such as the learner's thinking process and skills are determinant in his or her performance and attitudes (Sünbül, 2008). One of the most important of these variables, perhaps the most important one, is the creativity of the learner. At this point, it is of great importance that especially music educators have information about students' creativity and organize the learning environment in a way that will develop them. Thus, the music achievement, attitudes and creativity of the students studying at the secondary school level were investigated based on their demographic characteristics. For this purpose, answers to the following questions were sought:

- 1- What are the students' achievements and attitudes towards music lesson?
- 2- What is the level of artistic creativity of students?
- 3- Is there a significant gender-related difference in students' attitudes towards music, achievement and creativity scores?
- 4- Is there a significant difference in students' attitudes towards music, achievement and creativity scores based on the type of school?
- 5- Is there a significant difference in the students' attitudes towards music, achievement and creativity scores based on the grade level?
- 6- Is there a significant difference in the students' attitudes towards music, achievement and creativity scores based on the grade level?

## Method

### Research Model

This research, which investigated the relationships among secondary school students' music achievement, attitudes and creativity, was designed according to a causal comparative pattern. This research design focuses on the cause–effect relationship among the variables. Research should be carried out without any intervention on the conditions that may affect the results (Büyüköztürk, et al., 2008). In this study, in accordance with the causal comparative design, creativity, attitude towards music lesson and achievement scores were analysed by considering the variables of gender, grade level and achievement. In addition, the relationship between students' creativity and music achievement and attitudes was evaluated.

### Participants

Private schools and public secondary school in Mersin and Konya city centers constituted the target population of this study. Reaching all the schools in the target universe requires serious time and labor and is not cost effective. Considering this, the convenience sampling method was used. 246 secondary school students were included in the study by choosing two schools in the city centers. Participation in the study was based on informed consent and was voluntary. The distribution of secondary school students who participated in the research based on their personal information is shown in Table 1. 39.8% of the participants were male and 60.16% of them were female. The proportion of students studying in the fifth, sixth, seventh and eighth grades was 20.73%, 21.95%, 30.08% and 27.24% respectively. 55.28% of secondary school students were in public schools and 44.72% of them were in private schools.

Table 1. Distribution of Secondary School Students by Demographic Characteristics

		n	%
Gender	Female	148	60.16
	Male	98	39.84
Grade	5	51	20.73
	6	54	21.95
	7	74	30.08
	8	67	27.24
School Type	Public School	136	55.28
	Private School	110	44.72
	Total	246	100.0

### Assessment

#### *Kaufman Creativity Scale*

The scale lists 5 areas of creativity, namely 'Creativity in the Field of Artistic Performance' and 'Artistic Creativity'. The Kaufman Creativity Scale developed by Kaufman (2012) was used to measure the artistic

creativity of secondary school students. The 'Creativity in the Field of Artistic Performance' and 'Artistic Creativity' subscales of the original 5-dimensional scale were used for this study. Cronbach's alpha internal consistency coefficients for the sub-factors ranged from .89 to .82. The Cronbach's alpha coefficient for the entire scale is .91. It was determined that the Kaufman Creativity Scale was a valid and reliable tool for secondary school students.

#### *Music Achievement Scales*

Within the scope of the research, achievement scales based on the secondary school Music Lesson Curriculum developed by the Ministry of National Education (MoNE) (2021) were used to determine the secondary school students' music lesson achievements. In scales, there are expressions representing the achievements of the fifth, sixth, seventh and eighth grade music lesson. There are 25 items in the scale prepared for all grade levels. In order to ensure the validity of the scales, the achievement in music lesson curriculum were taken into account and expert opinion was elicited. A 5-point rating system was used in scoring the scales. The scales were designed as an observation form. The music lesson teacher gives a score between 1 and 5 for each student according to the level of achievement in the scales. A general score between 1 and 5 is obtained by dividing the scores obtained from the scales by the number of items. Scores close to 5 indicate that the achievement in music lesson have been realized to a large extent. In this study, the Cronbach's alpha coefficients for the fifth, sixth, seventh and eighth grade music lesson achievement scales were 0.89, 0.91, 0.91 and 0.93, respectively.

#### *Attitude towards Music Scale*

Attitude towards Music Scale developed by Öztürk and Kalyoncu (2014) was used to determine the attitudes of the secondary school students towards music lesson. The measuring instrument, which is a Likert type, consists of 14 items. It has a single-factor structure. In order to ensure the validity of the scale, opinions were elicited from branch teachers, field experts and assessment and evaluation experts. In addition, the validity of the scale was analysed by performing factor analysis. Single factor structure explained half of the total variance. A general score between 1 and 5 was obtained by dividing the scores obtained from the scale by the number of items. Scores close to 5 indicate that the attitudes towards music lesson are positive. In this study, alpha coefficient was used to determine the reliability of the measuring instrument. The alpha coefficient of the one-dimensional scale was found as 0.88.

#### **Data Analysis**

Within the scope of the research, the distribution of the data was analyzed before the analysis of attitude, achievement and creativity scores. The skewness and kurtosis values were taken as the basis for determining the distribution. According to Yurt and Sünbül (2012), the fact that these values are in the range of  $\pm 1$  indicates that the data follows normal distribution. The values found in this study ( $-0.22 < \text{Skewness} < 0.41$ ;  $-0.14 < \text{Kurtosis} < 0.36$ ;  $-0.13 < \text{Kurtosis} < 0.27$ ) indicated that the scores of attitudes, achievement and creativity

followed normal distribution has done. Considering this result, parametric tests were used in the analysis of attitude and achievement scores.

Independent sample t-test was used to compare the scores of attitudes, achievement and creativity based on gender and school type variables. F-Test was used to examine attitude, achievement and creativity scores based on grade and achievement level. The source of the difference between the groups was determined by using the Tukey test.

The relationships between students' creativity and music achievement and attitudes were analyzed with Pearson Correlation Coefficient and Regression Analysis. Linear regression is a predictive analysis technique used in the analysis of relations between variables. In this technique, the level of effect of one or more independent variables on a dependent variable is tested. In order to use this technique, the variables must be in the form of continuous variables, and the assumptions of normal distribution and homogeneity must be met (Peduzzi et al., 1995). In this study, linear regression analysis technique was used in the analysis of the relevant relationships, since all assumptions were met for the music lesson achievement, attitude and creativity variables.

## Results

Table 2 shows that the mean score of attitudes towards music was found as  $3.77 \pm 0.79$ . It was found that the average of the Music Lesson attainment scores was  $3.56 \pm 0.96$ . The mean creativity score in the field of artistic performance was  $4.10 \pm 0.69$ . The mean score of the artistic creativity was  $4.19 \pm 0.52$ . According to the mean scores obtained, it is seen that the secondary school students' positive attitudes towards music were above the moderate, and realizing the achievements in music lesson was at a moderate level. In addition, the Creativity and Artistic Creativity of the participants in the Field of Artistic Performance were at a high level.

Table 2. Descriptive Analysis of Secondary School Students' Music Lesson Achievement, Attitude and Creativity Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Achievement	246	1.00	4.71	3.56	0.96
Attitude	246	1.56	5.00	3.77	0.79
Creativity in the Field of Artistic Performance	246	1.22	5.00	4.10	0.69
Artistic Creativity	246	2.0	4.8	4.189	.5214

Table 3 shows that there was no significant difference in the scores of achievements in music and artistic creativity by gender ( $p > 0.05$ ). However, a significant difference was found in the attitudes towards music lessons and creativity scores in the field of artistic performance based on gender ( $p < 0.05$ ). According to the mean values obtained, the attitude and creativity scores of the female students participating in the study were significantly higher than their male peers.

Table 3. Analysis of the Scores Based on Gender

		N	Mean	Std.		
				Deviation		
Achievement	Female	148	3.62	1.02	1.169	.243
	Male	98	3.47	0.85		
Attitude	Female	148	3.87	0.84	2.501	.013
	Male	98	3.62	0.69		
Creativity in the Field of Artistic Performance	Female	148	4.21	0.62	3.084	.002
	Male	98	3.94	0.75		
Artistic Creativity	Female	148	4.178	.4736	-.378	.706
	Male	98	4.204	.5885		

Table 4 shows that there was no significant difference in Creativity scores in Artistic Performance based on school type ( $p>0.05$ ). However, a significant difference was found in music achievement, attitude and artistic creativity scores ( $p<0.05$ ). According to the mean values, private school students' scores of music achievement, attitude towards music and artistic performance were significantly higher than the scores of public-school students.

Table 4. Analysis of the Scores Based on School Type

	School		N	Mean	Std. Deviation	Std. Error Mean	p
	Type						
Achievement	1		136	3.25	1.06	-5.956	.000
	2		110	3.94	0.64		
Attitude	1		136	3.59	0.83	-4.095	.000
	2		110	3.99	0.67		
Creativity in the Field of Artistic Performance	1		136	4.15	0.67	1.236	.218
	2		110	4.04	0.71		
Artistic Creativity	1		136	4.10	0.44	-2.961	.003
	2		110	4.30	0.59		

Table 5 shows that there was no significant difference in music achievement, creativity in artistic performance and artistic creativity scores based on grade level ( $p>0.05$ ). However, a significant difference was found in the scores of attitudes towards music based on grade level ( $p<0.05$ ). According to the Tukey test results, the attitude scores of the fifth-grade students were significantly higher than the scores of the eighth-grade students.



Table 5. Analysis of the Scores Based on Grade Level

	Grade		Std.		F	p
	Level	N	Mean	Deviation		
Achievement	1	51	3.88	0.70	1.863	.136
	2	54	3.50	1.06		
	3	74	3.51	0.90		
	4	67	3.47	1.05		
	Total	246	3.56	0.96		
Attitude	1	51	4.06	0.70	2.382	.049
	2	54	3.74	0.79		
	3	74	3.74	0.86		
	4	67	3.54	0.74		
	Total	246	3.77	0.79		
Creativity in the Field of Artistic Performance	1	51	4.20	0.58	1.301	.275
	2	54	4.12	0.51		
	3	74	4.15	0.83		
	4	67	3.98	0.65		
	Total	246	4.10	0.69		
Artistic Creativity	1	51	4.22	0.55	1.020	.384
	2	54	4.30	0.33		
	3	74	4.17	0.67		
	4	67	4.13	0.39		
	Total	246	4.19	0.52		

Table 6 shows that there was a significant difference in music lesson achievement, attitude, creativity in the field of artistic performance and artistic creativity scores ( $p < 0.05$ ). According to the results of the Tukey test, high-achiever students obtained significantly higher music lesson achievement, attitude, creativity and artistic creativity scores in the field of artistic performance compared to their low-achieving peers.

Table 7 shows the results of the regression analysis that predict the relationships between secondary school students' creativity and music achievements. According to the analysis, a regression coefficient of 0.301 was found between the two variables. When the table is examined in detail, 12.1% of the change in secondary school students' music achievements was due to artistic creativity and creativity in the field of artistic performance. The positive beta coefficient between the two variables shows that there was a positive relationship between creativity and achievement variables. However, when the table t-values are examined in detail, it is seen that only the creativity in the field of artistic performance had a significant and positive effect on music achievement.

Table 6. Analysis of the Scores Based on Achievement Level

		N	Mean	Std. Deviation	F	p
Achievement	1	69	3.92	0.63	33.68	.000
	2	107	3.78	0.67		
	3	70	2.86	1.21		
	Total	246	3.56	0.96		
Attitude	1	69	4.08	0.65	20.06	.000
	2	107	3.87	0.66		
	3	70	3.32	0.90		
	Total	246	3.77	0.79		
Creativity in the Field of Artistic Performance	1	69	4.28	0.64	3.54	.030
	2	107	4.00	0.65		
	3	70	4.08	0.76		
	Total	246	4.10	0.69		
Artistic Creativity	1	69	4.24	0.35	2.52	.083
	2	107	4.23	0.59		
	3	70	4.07	0.53		
	Total	246	4.19	0.52		

Table 7. Results of Regression Analysis between the Variables of Secondary School Students' Creativity and Music Achievement

	B	Std. Error	$\beta$	t	p
(Constant)	1.527	.487		3.139	.002
Creativity in the Field of Artistic Performance	.351	.101	.252	3.469	.001
Artistic Creativity	.142	.133	.077	1.063	.289

R=.301; R<sup>2</sup>= .121; F=12.113; p=.000

Table 8 shows the results of the regression analysis predicting the relationship between secondary school students' creativity and attitudes towards music. According to the analysis, a regression coefficient of 0.388 was found between the two variables. When the table is examined in detail, 15% of the change in secondary school students' attitudes towards music was due to creativity in the field of artistic performance and artistic creativity. The positive beta coefficient between the two variables shows that there was a positive relationship between creativity and attitude variables. However, when the t-values are examined in detail, it is seen that only the creativity in the field of artistic performance had a significant and positive effect on the attitudes towards music lesson.

Table 8. The Results of Regression Analysis between Secondary School Students' Creativity and Attitudes towards Music Variables

	B	Std. Error	$\beta$	t	p
(Constant)	2.415	.389		6.214	.000
Creativity in the Field of Artistic Performance	.502	.081	.436	6.210	.000
Artistic Creativity	-.168	.106	.111	1.576	.116

R=.388; R<sup>2</sup>= .150; F=21.518; p=.000<sup>b</sup>

## Discussion

This study, which examined the achievement, attitude and creativity of secondary school students in terms of demographic variables, obtained similar findings with the literature (Kaleli, 2021b; Lebedeva et al, 2019; Margrett & Marsiske, 2002). In general, it was found that the attitudes of the students towards the music were above moderate, and their music achievement was moderate. However, significant differences were found in attitudes towards music and creativity in the field of artistic performance by gender. Female students had significantly higher levels of creativity in the field of artistic performance and attitude towards music than their male peers. Similar findings have been reported by Abra and Valentine-French (1991), Akinci (2018), Kaleli (2020b), Mahmutoglu (2019), Margrett and Marsiske (2002), Nori, Signore, and Bonifacci (2018), and Salthouse (2012), in the studies which compared the artistic creativity and attitudes of the students based on gender. In related research, female students showed stronger patterns of artistic creativity.

Another variable investigated in the study is related to music achievement, attitude and creativity based on school type and grade levels. According to the analysis, no significant difference was found in music achievement. On the other hand, private school students' scores of the creativity in the field of artistic performance, attitude towards music lessons and music achievement were significantly higher than the scores of public-school students. Similarly, secondary school senior students' attitudes towards music lessons were lower than the fifth, sixth and seventh grade students. According to Ferahoğlu, Tepecik, and Kalyoncu (2014) and Akinci (2018), exam-oriented education systems at all education levels negatively affect the attitudes of especially senior students towards art lessons. Due to the exam pressure, advice of schools, families and even teachers, students start to neglect lessons which are not included in the exam.

The last finding of the research is about the relationship between the secondary school student's creativity and their music achievement and attitudes. The results revealed that creativity as a whole significantly predicted music achievement and attitudes towards music. According to further analysis, creativity in the field of artistic performance had a significant and positive effect on music achievement and attitudes towards music. Therefore, the findings of this study corroborate the findings of the research conducted by Compos (2014), Kara (2020) and Koyuncuoğlu (2021). According to Kalyoncu (2021), as students' academic achievement, attitudes, innovation skills increase, creativity improves.

## Conclusions

The results obtained in the research reveal suggestions for the curriculum of music lessons. It is remarkable that the exam-centered teaching had an effect on students' attitudes towards music lesson and the low achievement, especially in the last grade of secondary school. For this reason, it is important to increase the sensitivity towards the implementation of the curriculum of the music lesson in schools. Therefore, informative applications can be designed for school administrators, teachers and families about the necessity of music lessons. In the research, it was revealed that creativity is an important factor in music lesson achievement and attitudes. Especially in the field of artistic performance, creativity had a very high effect on the realization of the cognitive and affective goals of music lessons. Thus, creativity practices in the field of artistic performance can be included in the curriculum of this course. Guides and workbooks can be prepared and teachers can be trained on how to plan the lesson and implement the activities in accordance with the creativity practices in the field of artistic performance in a student-centered approach. The variables of this study, which was carried out with quantitative research methods, can be investigated in depth with qualitative research methods. In addition, experimental studies can be designed to test the effects of artistic creativity-based music lesson practices at different grade levels.

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