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Evaluation of Social Intelligence and Communication Skills Levels in terms of Music Education

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ABSTRACT

This study aims to determine high school students' social intelligence and communication skills and the effect of music education on these variables. A survey method was used in the study. Two data collection tools were used in the study. These are Tromso Social Intelligence Scale developed by Silvera et al. (2001), adapted into Turkish by Doğan and Çetin (2009), and Communication Skills Scale created by Korkut Owen and Bugay (2014). The study group consists of students in five high schools in Ankara, the capital of Turkey, in the 2021-2022 academic year. The data collection process was completed in two months (April-May). The study shows that high school students have good social intelligence and communication skills. The scores obtained do not differ according to gender and grade level variables. At the same time, a positive and significant relationship was found between social intelligence and communication skills scores. The scores of the group that received extra music education outside the school were compared with those that did not. According to these results, the social intelligence and communication skills scores of the group that received music education were higher. While this difference was not significant in the case of social intelligence, it was significant in the case of communication skills.

Key words: Music Education, Musical Instrument, Adolescence, Social Intelligence, Communication Skills

INTRODUCTION

Adolescence can be considered the most challenging period of human life, with the excitement of having just left childhood and the beginning of a new life experience. Gül and Güneş (2009) explained adolescence as a period in which many changes occur in children and their families. Behaviors that were not observed as young children become different in adolescence, leading to unexpected reactions by families. As a result of this situation, some joint problems arise between the family and the child.

The main reason for these problems is the child's problematic behavior entering adolescence. Behaviors that negatively affect an individual's health and social life, prevent them from fulfilling the social roles expected of them, and prevent them from feeling a sense of success and competence are defined as problematic behaviors (Jessor, 1998). Examples of problematic behavior could be alcohol, smoking, drug addiction, early sexual intercourse, anti-social behavior, risky unauthorized driving, running away from home and school, and dropping out of school. Behaviors that cause negative consequences by violating legal and social rules that directly or indirectly affect the individual's health and social life are problematic (Jessor, 1998).

It is difficult to answer the why and why of the problematic behaviors in this process. The World Health Organization (WHO) defines the 10-19 age range as adolescence (WHO, 2022). The Ministry of National Education (MEB) states that high school education in Turkey covers the 14-17 age range (MEB, 2018a). For this reason, high school education takes place during adolescence. During high school, children go through a period of emotional ups and downs as well as physical changes during the transition to adulthood through their developing hormones. Sometimes they have happy moods and sometimes sad moods, and they have difficulty explaining why this is the case. Individuals in this period are socially, cognitively, and emotionally mature when they strive to overcome all the problems they experience (Türnüklü & Şahin, 2004).

Research indicates that the most important factors affecting people's success in their education and training processes or their working lives are related to the level of multiple intelligences. Gardner (1988), the proponent of the concept of multiple intelligences, stated that people do not have a single intelligence dimension and that multiple types of intelligence are independent of each other. Among these types of intelligence, one of the most critical types of intelligence that directly affects people's success and performance is social intelligence (Hançer & Tanrisevdi, 2003; Ilgın Başaran, 2004). Social intelligence and interpersonal communication include empathy towards other individuals

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and self-expression skills. Children and adolescents with high levels of social intelligence are happy in friendships, are attentive to others, and expect the same attention from others (Abdullayeva, 2018).

Music is one of the most potent tools that act as a communicative mechanism between social actors (Sayın & Bostancı Ege, 2013). According to research, music education has a good impact on kinesthetic and emotional behaviors as well as a sizable impact on cognitive learning (Şendurur & Barış, 2002). According to Erdem (2011), high school students use music to express themselves, demonstrate who they are, or declare how they want to be known. In this regard, he contends that music is the most effective form of expression for adolescents. In high school, students spend most of their days at school. The music education they receive in school or as amateurs outside of school contributes significantly to the personal skills of individuals (Acar, 2017; Alisinanoğlu, 2002; Şahin & Çövener Özçelik, 2016).

Kaya et al. (2016) found that university students' social intelligence scores were high, and communication skills scores were at a medium level. The study determined that students involved in an artistic activity had higher levels of social intelligence and communication skills than those who were not. Evaluating the literature shows that many studies assess social intelligence and communication skills. According to studies, those with higher degrees of social intelligence and communication abilities succeed more than those with lesser levels (Arifoğlu & Razı, 2011; Azar, 2006; Doğan et al., 2013; Ermiş et al., 2012). Social intelligence and communication skills make significant contributions to an individual's academic life (Akkuzu, 2019; Akman & İmamoğlu Akman, 2017; Ünal Karagüven, 2015) and personality development (Yüksel-Şahin & Şahin, 2017). At this point, it seems crucial to develop social intelligence and communication skills, especially at an early age.

According to the views mentioned above, it seems necessary to examine the contribution of music education in the development of social intelligence and communication skills of adolescents at the stage of gaining their personalities who are preparing for adulthood. For this reason, the aim of the study was determined as examining the effect of music education on adolescents' social intelligence and communication skills levels. In this context, the problem statement of the research was formed as follows: Do the levels of social intelligence and communication skills of high school students with and without music education show a significant difference? The sub-problems determined are as follows:

1. What is the social intelligence level of high school students?
2. What is the communication skills level of high school students?
3. Is there a significant relationship between social intelligence and the communication skills of high school students?
4. Do social intelligence and communication skills levels differ according to whether they receive music education?
5. Do the levels of social intelligence and communication skills differ according to the duration of music education?

METHOD

Research Design

The design of this study is a survey from quantitative research methods. The survey can be used to collect information on demographic characteristics, knowledge, and attitudes (O'Leary, 2017). For this reason, surveys are well-suited for studying observable social behaviors (Park, 2006). In this study, a survey study was preferred since the levels of social intelligence and communication skills, observable social behaviors, were to be determined.

Study Group

Students from five high schools functioning in Ankara/Çankaya during the academic year 2021–2022 made up the study group. The accessibility factor was taken into consideration while forming the study group. Table 1 shows the study group's descriptive data.

The majority of participants were female students, as shown in Table 1. The 9th and 10th grades were the most crowded group regarding grade level. The rate of students who stated they had received extra music education outside school was 29.5% of the whole group. Most of this group had received extra music training for more than one year.

The distribution of high school students according to the instruments they studied is shown in Table 2. Piano and

Table 1. Information about the study group

	Group	*f*	%
Gender	Female	343	58.4
	Male	244	41.6
Grade	9	181	30.8
	10	186	31.7
	11	129	22.0
	12	91	15.5
Did he/she receive extra music education outside of school?	Yes	173	29.5
	No	414	70.5
Duration of music education	Less than one year	59	10.1
	More than one year	114	19.4

Table 2. Instrument distribution of students

Instrument	*f*	%
Piano	58	33.5
Guitar	36	20.8
Drum	29	16.7
Violin	21	12.1
Flute	13	7.5
Baglama	8	4.6
Cello	6	3.5
Saxophone	2	1.3
Total	173	100

guitar are the most preferred instruments. These two instruments make up more than 50% of the whole group.

Data Collection Tools

The researchers' Personal Information Form was used to gather data on the participants' gender, grade, and music education.

Data on social intelligence were collected using the "Tromso Social Intelligence Scale" and data on communication skills were collected using the "Communication Skills Scale." Before using the scales, permission was obtained from the relevant researchers via e-mail.

Doğan and Çetin (2009) adapted into Turkish the Tromso Social Intelligence Scale (TSIS) created by Silvera et al. (2001). The adaptation studies were conducted with 719 participants. As a result of exploratory and confirmatory factor analysis, it was determined that the scale had a three-factor structure consisting of 21 items as in the original. Reliability coefficient values are as follows:.77 for 'Social Knowledge Process' sub-dimension.,84 for the 'Social Skills' sub-dimension.,67 for the 'Social Awareness' sub-dimension, and.83 for the whole scale. The first factor in this study had a Cronbach alpha value of.88, the second factor of.80, the third factor of.80, and the overall scale had a Cronbach alpha coefficient of.91.

The Communication Skills Scale (CSS) was created by Korkut Owen and Bugay (2014). For the scale developed with 384 participants, exploratory factor analysis, confirmatory factor analysis, and test-retest analyses were used. The 25-item scale's Cronbach alpha coefficient was calculated as.88. Internal reliability coefficients were.79 for the "Communication Principles and Basic Skills" factor.,72 for the "Self-Expression" factor.,64 for the "Active Listening and Nonverbal Communication" factor, and.71 for the "Willingness to Communicate" factor. The first factor in this study had a Cronbach alpha coefficient of.84, the second.69, the third.80, and the fourth.78. The full scale had a Cronbach alpha coefficient of.88.

After obtaining the necessary permissions, the researchers started collecting the data in April-May 2022. The study's goal was first explained to the pupils. Then the questionnaires were distributed to them by the music teachers. It took the pupils 10-15 minutes to respond to the questionnaires.

Data Analysis

The data collected through printed questionnaires were entered into the SPSS 21 program. In control, it was determined that 17 questionnaires were not filled to a great extent, so they were excluded from the data set.

In order to determine which type of statistical tests to be performed, normality was first checked. For this, normality tests, skewness, and kurtosis values were checked.

Table 3 shows the normality test results for social intelligence and communication skills variables. The test results of all groups except the "no" group in the communication skills variable were found to be insignificant ($p>0.05$). In addition, skewness and kurtosis values examined for normality control are given in Table 4.

The range of values expected for a normal distribution for the skewness (0.089-0.175) and kurtosis (0.057-0.330) coefficients was found to be within (±1) this range. (George & Mallery, 2019). After the normality test results, skewness, and kurtosis values were checked, it was accepted that the data showed normal distribution. As a result, the scores of two groups were compared using the Independent Samples t Test, and the scores of more than two groups were compared using the One-way ANOVA. The Pearson correlation analysis was used to examine the connection between social intelligence levels and communication abilities.

The scores obtained from the scale were based on arithmetic averages (M). The evaluation was made according to the criteria 1-1.80 shallow, 1.81-2.60 low, 2.61-3.40 medium, 3.41-4.20 good, 4.21-5.00 very good.

RESULTS

Findings Related to Social Intelligence Scores

The arithmetic mean (M) and standard deviation (SD) values were calculated to indicate the distribution of social intelligence scores among high school students. The results are displayed in Table 5.

Table 5 shows the mean scores of high school students obtained with the social intelligence scale. When we consider all the variables, we can see that the outcomes fall under the category of "good." According to the overall scale, the average is at a good level. According to these results, high school students have a good level of social intelligence.

Comparison of social intelligence scores by gender

According to Table 6, there is no discernible gender difference in student test performance [$t_{(585)}=0.43$, $p>0.05$]. The mean scores of female students (M=3.72) and male students (M=3.69) do not differ statistically significantly. Factor averages are also quite close to each other.

Table 3. Normality test results

	Extra Music Education	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Social Intelligence	Yes	0.047	173	0.200	0.986	173	0.084
	No	0.041	414	0.087	0.995	414	0.231
Communication Skills	Yes	0.050	173	0.200*	0.986	173	0.092
	No	0.046	414	0.039	0.994	414	0.139

Comparison of social intelligence scores according to grade

As seen in Table 7, the highest score is at the 11th-grade level, and the lowest score is at the 9th-grade level. It can be said that their social intelligence scores are close to each other.

Table 8 shows the one-way ANOVA results to determine whether social intelligence scores differed according to grade level. According to the table, social intelligence scores do not show a significant difference at grade level [F(3-583)=1.61, p>0.05].

Table 4. Skewness and kurtosis values

	Extra Music Education	Skewness	Kurtosis
Social Intelligence	Yes	-0.089	-0.275
	No	-0.060	0.118
Communication Skills	Yes	-0.175	-0.057
	No	-0.103	0.330

Table 5. Social intelligence scores of high school students

	M	*SD*
Social Information Process	3.88	0.578
Social Skills	3.63	0.598
Social Awareness	3.59	0.571
Total	3.71	0.494

Table 6. Comparison of social intelligence scores by gender

	Gender	n	*M*	*df*	*t*	*p*
Social Information Process	Female	343	3.89	585	0.40	0.68
	Male	244	3.87			
Social Skills	Female	343	3.64	585	0.79	0.42
	Male	244	3.60			
Social Awareness	Female	343	3.59	585	-0.05	0.95
	Male	244	3.60			
Total	Female	343	3.72	585	0.43	0.66
	Male	244	3.69			

Table 7. Distribution of social intelligence scores according to grade level

Grade	n	%	*M*
9	181	30.8	3.63
10	186	31.7	3.69
11	129	22.0	3.77
12	91	15.5	3.71

Findings Related to Communication Skills

In order to determine the distribution of high school students' communication skills scores, arithmetic mean and standard deviation values were calculated and shown in Table 9.

The results from the high school student's communication abilities scale are displayed in Table 9. It can be shown that the outcomes at the factor level fall within the category of "good." The average was assessed at a good level when considering the scale as a whole. These findings indicate that high school pupils' communication abilities are good.

Comparison of communication skills scores by gender

Table 10 shows that there is no statistically significant gender difference in student test scores [$t_{(585)}$=0.33, p>0.05]. The mean scores of female students (3.66) and male students (3.68) do not differ statistically significantly. The averages of the factors are also quite close to each other.

Comparison of communication skills scores according to grade

As seen in Table 11, the highest score is at the 12th-grade level, and the lowest score is at the 9th-grade level. Similar results were also observed in the factor-based analysis. It can be said that communication skills scores are close to each other.

Table 12 presents one-way ANOVA results to check whether communication skills scores differed according to grade level. According to the table, communication skills scores do not show a significant difference at grade level [F(3-583)=1.57, p>0.05].

The Relationship between High School Students' Social Intelligence and Communication Skills

The association between high school students' levels of social intelligence and their communication abilities was investigated using a Pearson correlation analysis. Table 13 displays the analysis findings.

Social intelligence and communication skills scores among high school students were significantly and favorably correlated. The strongest correlation between social awareness, communication principles, and basic skills was found. The link between social awareness and non-verbal communication skills was found to be at the lowest level.

High School Students' Social Intelligence Levels and Music Education

Social intelligence scores of high school students were grouped according to those who received extra music education outside of school and those who did not. A t-test was

Table 8. One-way ANOVA analysis results for social intelligence scores

		Sum of Squares	df	Mean Square	*F*	*p*
Grade	Between Groups	1.184	3	0.395	1.616	**0.184**
	Within Groups	142.385	583	0.244		
	Total	143.569	586			

Table 9. Communication skills scores of high school students

	M	*SD*
Communication Principles and Basic Skills	3.67	0.563
Personal Expression	3.59	0.578
Nonverbal Expression	3.70	0.551
Willingness to Communicate	3.72	0.567
Total	3.67	0.484

Table 10. Comparison of communication skills scores by gender

	Gender	**n**	***M***	***df***	***t***	***p***
Communication Principles and Basic Skills	Female	343	3.65	585	-0.56	0.57
	Male	244	3.68			
Personal Expression	Female	343	3.58	585	-0.29	0.77
	Male	244	3.59			
Nonverbal Expression	Female	343	3.69	585	-0.49	0.61
	Male	244	3.71			
Willingness to Communicate	Female	343	3.72	585	0.49	0.62
	Male	244	3.69			
Total	Female	343	3.66	585	-0.33	0.73
	Male	244	3.68			

Table 11. Distribution of communication skills scores according to grade

Grade	**n**	***%***	***M***
9	181	30.8	3.61
10	186	31.7	3.71
11	129	22.0	3.66
12	91	15.5	3.72

Table 12. One-way ANOVA analysis results for communication skills scores

		Sum of Squares	**df**	**Mean Square**	***F***	***p***
Grade	Between Groups	1.101	3	0.367	1.571	**0.195**
	Within Groups	136.197	583	0.234		
	Total	137.297	586			

conducted to measure whether the results were statistically different. The results are given in Table 14.

It can be seen that the group receiving additional music education has higher social intelligence scores on both the components and the overall scale. The social skills component is where there are the most differences. The t-test findings showed that only the social skill category showed a meaningful difference. The social skills scores of the students who received extra music education (3.80) were statistically significantly higher than the scores of the students who did not receive extra music education (3.56). No significant difference was found in the full scale [$t_{(585)}$=1.7, p>0.05].

The Relationship Between the Duration of Music Education and Social Intelligence

Students who stated they received extra music education outside of school were also asked how long they received it. Table 15 shows the findings of the t-test used to assess whether social intelligence scores vary with the length of music education.

The average scores of the groups determined according to the duration of music education were analyzed. It was observed that the factor and total scale scores of those who received music education for more than one year were higher. This result is not statistically significant [$t_{(171)}$=1.19, p>0.05].

The Relationship between High School Students' Communication Skills and Music Education

Communication skills scores of high school students were grouped according to those who received extra music education and those who did not. A t-test was conducted to measure whether the results were statistically significant. The results are given in Table 16.

When the results given above are analyzed, it is seen that the communication skills scores of those who received extra music education are higher than those who did not. The highest difference was observed in the self-expression factor, while the least was in the communication principles and basic skills factor. The basic skills and communication principles factor did not significantly differ, according to the findings of a t-test. A statistically significant difference was found in the other factors and the overall results of the scale [$t_{(585)}$=3.03, p<0.05]. Accordingly, it can be said that the communication skills of high school students who receive extra music education are at a better level than those who do not.

Table 13. Pearson correlation analysis results

		Communication Principles and Basic Skills	**Personal Expression**	**Nonverbal Expression**	**Willingness to Communicate**
Social Information Process	r	0.379**	0.249**	0.269**	0.275**
	p	0.000	0.000	0.000	0.000
Social Skills	r	0.402**	0.280**	0.243**	0.205**
	p	0.000	0.000	0.000	0.000
Social Awareness	r	0.533**	0.208**	0.198**	0.209**
	P	0.000	0.000	0.000	0.000

**. Correlation is significant at the 0.01 level (2-tailed).

Table 14. T-test results for the social intelligence and music education

	Extra Music Education	n	*M*	*df*	*t*	*p*
Social Information Process	Yes	173	3.90	585	1.2	0.22
	No	414	3.87			
Social Skills	Yes	173	3.80	585	4.6	0.00
	No	414	3.56			
Social Awareness	Yes	173	3.66	585	1.7	0.07
	No	414	3.57			
Total	Yes	173	3.77	585	1.7	0.08
	No	414	3.69			

Table 15. Comparison results according to the duration of music education

	Extra Music Education	n	*M*	*df*	*t*	*p*
Social Information Process	Less than one year	59	3.77	171	-1.14	0.25
	More than one year	114	3.87			
Social Skills	Less than one year	59	3.74	171	-0.92	0.35
	More than one year	114	3.83			
Social Awareness	Less than one year	59	3.58	171	-1.14	0.25
	More than one year	114	3.70			
Total	Less than one year	59	3.70	171	-1.19	0.23

Table 16. T-test results for communication skills scores

	Extra Music Education	n	*M*	*df*	*t*	*p*
Communication Principles and Basic Skills	Yes	173	3.69	585	0.71	0.47
	No	414	3.65			
Personal Expression	Yes	173	3.80	585	6.03	0.00
	No	414	3.50			
Nonverbal Expression	Yes	173	3.81	585	2.97	0.00
	No	414	3.66			
Willingness to Communicate	Yes	173	3.82	585	3.10	0.00
	No	414	3.66			
Total	Yes	173	3.76	585	3.03	0.00
	No	414	3.63			

The Relationship between the Duration Of Music Education and Communication Skills

The results of the t-test to determine whether communication skills scores vary according to the duration of music education are given in Table 17.

Table 17. Comparison results according to the duration of music education

	Duration	n	*M*	*df*	*t*	*p*
Communication Principles and Basic Skills	Less than a year	59	3.55	171	-2.03	0.04
	More than a year	114	3.77			
Personal Expression	Less than a year	59	3.73	171	-1.09	0.27
	More than a year	114	3.84			
Nonverbal Expression	Less than a year	59	3.76	171	-0.64	0.48
	More than a year	114	3.83			
Willingness to Communicate	Less than a year	59	3.80	171	-0.24	0.80
	More than a year	114	3.82			
Total	Less than a year	59	3.68	171	-1.34	0.18

As it is seen in Table 17, the mean score of the group that has received music education for more than one year (3.80) is higher than the mean score of the group that has received music education for less than one year (3.68). This situation is the same for all factors. As a result of the t-test, a statistically significant difference was found in the communication principles and basic skills factor. No significant difference was found in the other factors and the full scale [$t_{(171)}$=1.34, p>0.05].

DISCUSSION AND CONCLUSION

In this study, firstly, the levels of social intelligence and communication skills of high school students were tried to be determined. Then, it was questioned whether the data obtained varied according to the status of receiving extra music education outside of school. Five hundred eighty-seven high school students constituted the study group. Data were collected with personal information form, Tromso Social Intelligence Scale, and Communication Skills Scale.

It was determined that high school student's social intelligence and communication skills scores were good. This data does not differ according to the gender and grade level of the students. This situation is similar in all factors. According to the literature, it is seen that the effect of grade level on social intelligence and communication skills creates a significant difference in primary and secondary school students (Çakmak Yıldızhan & Çağlayan, 2019; Sağırkaya, 2013), while it does not create a significant difference at high school and university level (Bingöl & Demir, 2011; Erözkan, 2013; Gün, 2018). Research indicates that grade level will

be essential in determining social intelligence and communication skills in younger age groups. However, this difference will not be significant at the high school and university levels. There are some studies in which gender affects the level of social intelligence (Güllü & Tekin, 2009; Şahin & Çövener Özçelik, 2016). Despite this situation, it is mostly emphasized that the gender factor does not affect social intelligence and communication skills (Akman & İmamoğlu Akman, 2017; İşeri, 2016; Kaya et al., 2016). It can be said that the results obtained in this study are similar to the literature.

It was observed that the social intelligence scores of individuals receiving music education were higher in all factors. According to the analysis, a statistically significant difference was found only in the social skills dimension. The level of social skills determines the point where the level of social intelligence increases most significantly. Social skills are learnable behaviors that include cognitive and affective elements and enable people to establish mutual and healthy relationships with other people (Güven & Erol, 2019). Studies emphasize that social skill level, which is a sub-field of social intelligence, makes positive contributions to students in the areas of self-esteem (Yiğit & Yılmaz, 2011), self-efficacy (Balyan, 2009), media literacy (Aktı, 2011), parents' social anxiety (Tosun Sümer, 2008), personality traits (Şaşkın, 2010), cooperative learning (Bahadır, 2011), and academic achievement (Keskin, 2007). Based on these studies, it can be said that music education will contribute to developing social skills and, indirectly, social intelligence in many ways.

It was questioned whether communication skills scores differed between those who received music education outside school and those who did not. It was measured that the communication skills scores of those who received extra music education outside the school were higher than those who did not receive music education in all factors and the total scale. As a result of the analysis, a statistically significant difference was found except for the communication principles and basic skills dimension. The communication skills levels of the students who received out-of-school music education differed significantly and positively from the non-music education group. Individuals with high communication skills make connections with other people, other ideas, and other events (Erdoğan, 2002). Özmen (2007), in his study conducted with adolescents aged 15-18, concluded that young people with high communication skills have an effective and successful process in all areas of their lives, from family communication to friends at school. Young people, who will take on functional responsibilities as adults in society, will be able to develop into healthy individuals if they can express themselves, know that they are listened to, and, most importantly, that their opinions are valued (Şahin & Aral, 2012). All this can be realized through healthy communication. It can be said that the progress in communication skills of individuals who receive music education will be reflected in all areas of life.

When analyzed according to the duration of music education, it was observed that the social intelligence and communication skills scores of those who received music education for more than one year were higher than those who received music education for less than one year.

These studies have revealed that individuals receiving music education are at a better level than other students in terms of cognitive development (Şendurur & Barış, 2002), academic achievement (Ece & Bilgin, 2007), emotional intelligence level (Pektaş, 2013), self-concept (Deniz & Azeri, 2006), self-efficacy, self-esteem (Özmenteş, 2014), tendency to show violence (Uluçay, 2018), aggression level (Çeşit, 2016), empathic skills and adaptation level (Köksal, 2000). The results obtained from this study show that high school students receiving music education differ from other students in social intelligence and communication skills in addition to the studies mentioned above. Improved social intelligence and communication skills can lead to healthier relationships, academic success, stable family relationships, and positive behaviors that can affect students' lives.

The most critical variable in the study is that the students receive amateur music education outside of school. Music education courses are given in the schools where they study. However, this process covers general music education (MEB, 2018b). Students cannot learn any instrument in these lessons. They had the opportunity to learn an instrument through external private lessons or courses in line with the support they received from their families and their wishes. This study showed that individuals who received music education had higher social intelligence and communication skills than those who did not. Accordingly, it can be said that learning an instrument from an early age will contribute to social intelligence and communication skills.

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