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Teachers' Opinions on the Effect of Music Education on Social Skills of Children with Autism Spectrum Disorder

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Abstract

This study, which examines the effect of music education on the skills of children with autism spectrum disorder (ASD), is essential in terms of music education contributing to the social skills of children with ASD and improving their deficiencies, guiding teachers working in the field of autism, and providing resources for future research. This study is an action research conducted with an experimental approach. Data were obtained using the descriptive analysis method, one of the qualitative research techniques. The experimental group of the study consisted of 6 children between the ages of 7 and 12 diagnosed with ASD. Each child in the experimental group was given music lessons twice a week, each lasting 20-30 minutes for 12 weeks. Each lesson was recorded with a video. After the experimental process, the lesson videos from the recorded application videos for each child from the 1st, 6th, and 12th weeks were shown to 4 special education teachers and one music educator working in special education institutions. Then, these teachers obtained opinions about the student's development. The study results revealed positive developments in many areas, such as establishing relationships, managing emotions and behaviors, regulating emotions, making positive decisions, teacher communication, and other areas. The main recommendations within the scope of the study are providing music education to students with ASD in all special education institutions, using rhythm instruments and Orff instruments to reduce students' textural sensitivities, and having students with speech limitations singing children's songs.

Keywords: Music Education; Autism Spektrum Disorder; Social Skillsd

1. Introduction

Music is an artistic expression that has the power to affect human life at every moment of life. For this reason, music can be used as a lesson to develop students at every level of education and a method of educating individuals with special needs. The education of individuals who differ significantly from their peers in terms of their characteristics is called special education (MEB, 2006). Students with Autism Spectrum

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Disorder (ASD) are included in special education groups. "Autism is a neuropsychiatric disorder that begins in the early stages of life throughout life and is determined by delays and deviations in social relationships, communication, behavior, and cognitive development" (Yorbik et al., 2003, p. 67). As the name suggests, social skills are among the issues that students with ASD have the most difficulty with. The limitations experienced by individuals with ASD in terms of eye contact, interest in the environment and people, emotional closeness, playing games, and social rules are indicators of their social inadequacy and inability to socialize (Özbey, 2005, p. 49). Establishing relationships, managing emotions and behaviors, regulating emotions, making positive decisions, and teacher interaction are some learning areas for social skills courses in institutions where students with ASD receive education. Activities such as singing together, dancing, and playing instruments in music lessons not only allow children to interact with each other but also with their teachers. Music education can be considered a tool that can develop students' social skills in terms of its features. Many studies have concluded that music education improves children's social skills (Sökezoğlu, 2010; Öziskender, 2011). The study is different from other studies in that it includes experimental application, the entire process is evaluated by field experts who work with children with ASD, it is based on detailed observations that cannot be reached with quantitative studies, it examines

social skills, which are among the most limited issues in children with ASD, and it examines the development of 6 different children with ASD. Considering all this information, since the positive effect of music education on the social skills of students is also known, its effect on children with ASD is also a matter of curiosity. In this context, the answer to the question "What are the Effects of Music Education on the Social Skills of Children with Autism Spectrum Disorder?" was sought in this study.

2. Method

Within the scope of this research, six students with ASD were given music education for 12 weeks as an experimental process. The entire process was recorded with a video recording system. The lessons at the beginning, middle, and end of the experimental process were monitored by field experts. Opinions were received from field experts about the courses they watched. This research data was obtained using qualitative methods and interpreted with the descriptive analysis method. The descriptive approach includes features such as determining the themes in advance and directly including the opinions of the individuals (Yıldırım & Şimşek, 2006, p. 224). On the other hand, music lessons were given by the researcher himself and a different music educator. In this aspect, the research is also an action research. "Action research, which is shown among the professional qualifications that teachers should have today, is an important type of

research that requires people directly related to the situation that needs to be developed to work as researchers" (Büyüköztürk et al., 2014, p. 259).

2.1. Application

Music lessons, which lasted 12 weeks, were given twice a week, with a 1-week lesson time of 20-30 minutes for each student. The researcher and music educator who took part in the application have experienced in providing music education to students of all ages and groups. The school administration provided the necessary information about the individual characteristics of the students in the experimental group, and it was decided that the lessons would be given with the supervision of special education teachers in case of any possible negativities or unexpected behavioral problems. The 12-week course content during the implementation period of the research is as follows.

In the first week, in the "Listening-singing-playing" learning area, in the first lesson conducted with the aim and behavior of "Listening to music according to its rules", national and international children's favorite music was listened to in order to familiarize the students and get to know their individual characteristics. Computer, piano, and various Orff instruments were used.

In the 2nd and 3rd weeks, in the “Listening-Singing-Playing” learning area, in the lesson conducted with the target and behavior of “Imitates the sounds played,” the sounds in the song played were imitated by using Orff Instruments and piano.

In the 4th week, in the "Music Culture" learning area, the lesson was conducted with the aim and behavior of "Recognizing different musical instruments". Piano, cajon, maracas, hand, the names of the instruments such as bells, drums, herringbone, xylophone, darbuka, tambourine with bells, etc. were taught. Afterwards, a guessing game was played (Orff instruments were introduced, while the learner was playing the instrument, the student turned his back and tried to guess which instrument the sound belonged to). In addition, the piano was played by the teacher and then the student was allowed to explore the piano freely.

In the 5th week, in the “Listening, Singing and Playing” learning area, “Keeps rhythm with Orff instruments” is a lesson that was aimed at target and behavior, maracas, hand the songs he learned were accompanied with instruments such as bells, drums, herringbone, xylophone, darbuka, tambourine with bells, etc. Simple melodies were tried with one hand on the piano.

In the 6th week, in the "Game and Movement" learning area, the songs learned in the " Ront studies" lesson focused on target and behavior were accompanied by dances.

In the 7th week, in the "Listening, Singing and Playing" learning area, the lesson was focused on the target and behavior of "Uses the voice correctly," the person with whom the person will work during the correct use of the voice exercise was made to sit with

their body upright and their feet flat on the ground, establishing eye contact, and breathing exercises were performed by breathing in through the nose and out through the mouth.

In the 8th week, in the "Game and Movement" learning area, "They do musical game activities." The songs and activities they learned in the lesson focused on targets and behavior were performed together with their peers.

In the 9th and 10th weeks, in the “Play and Movement” learning area, in the lesson that was conducted in line with the target and behavior, songs were sung about self-care and life skills that occur in daily routines.

In the 11th and 12th weeks, in the “Game and Movement” learning area, the lesson was conducted with the target and behavior of "Performs musical game activities". Songs previously taught were sung with appropriate body movements and accompanied with Orff Instruments.

All lessons held for 12 weeks were recorded. The 1st, 6th, and 12th videos were shown to 4 special education teachers and one music teacher working with students with ASD in special education institutions. Then, at least six interviews were conducted with field expert teachers.

2.2. Participant Group

The personal information of the students in the experimental group is as follows;

Table 1. Distribution of Personal Information of Students with ASD in the Experimental Group

Code	S1	S2	S3	S4	S5	S6
Gender	Male	Girl	Male	Male	Male	Male
Age	7	12	11	8	8	7

As seen in Table 1, the experimental group consists of 6 students, five male and one female. The oldest student in the experimental group is 12 years old, and the youngest is 7 years old.

The personal information of the teachers in the observation group of the research is as follows;

Table 2. Distribution Showing Personal Information of Field Experts

Code	E1	E2	E3	E4	E5
Professional Seniority	13	3	5	7	17
Educational Status	License	License	License	License	License
His duty	Special Education Teacher	Special Education Teacher	Special Education Teacher	Special Education Teacher	Music The teacher

The field experts in the observation group of the study consist of 4 special education teachers working in private educational institutions and one music teacher. As seen in Table 2, the most senior teacher in the observer group has 17 years of experience, and the least senior has 3 years of experience.

2.3. Data Collection Tools

In this study, a "Semi-Structured Interview Form Oriented to Social Skills" was used to collect data. "The recording of observation results should be done by writing them on certain forms by the prior planning and preparations" (Arıkan, 2013, p.71). The semi-structured interview form questions of the research were prepared by the researcher himself, by also taking the opinions of the field expert academicians, and inspired by the learning areas of the course named "Social Skills" from the special education 1st and 2nd stage curriculum prepared within the Ministry of National Education, "Semi-Structured Interview Form Oriented to Social Skills Field" was prepared. In order to test the data collection tool, the research questions were asked to an academician outside the research group and one teacher working in the field of special education. Considering the suggestions of the teacher and the academician regarding the interview questions, the questions were revised and finalized. The semi-structured interview form questions asked to the field experts within the scope of the research are as follows;

What are your observations about the student within the scope of the “building relationships” learning area?

What are your observations about the student within the scope of the “Emotion and behavior management” learning area?

What are your observations about the student within the scope of the “Emotion regulation” learning area?

What are your observations about the student within the scope of the “positive decision making” learning area?

What are your observations about the teacher and communication?

What are your observations about the students who are outside the scope of the learning areas?

Data were collected by organizing online meetings with each individual in the study group. Creswel (2021) stated that collecting qualitative data over the internet provided advantages in terms of putting the data in writing and reaching the participants (p. 161). After the data obtained through the interviews was transferred to the computer environment, it was shared with field experts to confirm its accuracy.

2.4 Analysis of Data

Inter-rater reliability, which means giving the data to more than one researcher and asking them to analyze the data according to the organized categories, is a method used

in qualitative studies (Güler et al., 2015, p. 395). In this context, the analysis of the study was reviewed by more than one researcher, and the differences between the opinions were reviewed, and the problems were resolved. Then, the Miles and Huberman formula (Reliability = Consensus/Consensus + Disagreement X 100) was used, and the harmony between the codes was examined (Miles & Huberman, 2019). The calculation revealed that the reliability of the study was 97%.

It is known that the validity and reliability of qualitative research are discussed by some circles in the scientific world. For this reason, credibility, transferability, immutability, and confirmability have become important concepts in qualitative studies. In qualitative studies, the objective meanings derived from the data are some of the factors that increase validity (Güler et al., 2015, pp. 373-374). Field experts conveyed their observations by watching video-recorded lessons. The videos were recorded, which also means that the data was stored. This is a factor that increases the observational validity of the research (Güler et al., 2015, p. 376). The concept of credibility, which has the same meaning as internal validity in quantitative studies, is related to how much the results presented by the researcher reflect the views of the participants (Sandelowski, cited in Güler et al., 2015, p. 377). In interpreting the qualitative results of the research, the results should be objective and credible. In order to demonstrate this, sample sentences from the participating field experts have also been included.

Another factor that will increase the validity and reliability of the research is intense and it is a long-term participation. The researchers' long-term presence in the study field as both observers and interviewers helped to keep the studied topics on the right plane (Güler et al., 2015, p. 377). The fact that the entire application process of the research was video-recorded, the time the field experts watched and interpreted the videos was spread over a long period of time such as 1 year, and at least six interviews were conducted with all field experts were stated as factors that increased the validity of the research in this sense. Another method that will increase the validity and reliability of qualitative studies is diversification. It is the comparison of the results with data taken from different people, methods, and places (Güler et al., 2015, p. 378). What is intended to be measured in the study is the effect of music education on the social skills of children with ASD. In a similar study, the researcher investigated the effect of music education on the communication skills of children with ASD (Karakuş & Tufan, 2021). Since this study is similar both in methodologically and in terms of experimental group characteristics, it can be said that the current study is tested with this study. Another method related to validity and reliability is transferability. In order for the study to be transferable, detailed definitions should be made, and rich, detailed information should be provided about the place where the study was conducted, the participants, and all aspects of the study (Güler et al, 2015, p. 383). The number of the experimental group and field experts, information defining them, the place where the application was conducted, the content of

the music lessons applied and how long the application lasted, how long and how the interviews were conducted, and confirmation of the data obtained from the field experts are included in the study in full detail. For this reason, it can be said that this study is a strong study in terms of transferability. In addition to all of this, it is important to explain the data collection and analysis stages in detail in order to test the reliability of the study. After watching a video at the beginning, middle, and end of the application (weeks 1, 6, and 12) for each of the six students in the experimental group, the opinions of 5 field experts were obtained. Here, having five different field experts collect data about each student will ensure that the data reaches sufficient saturation and similarities and differences between the data emerge. This strengthens the study in terms of reliability. Another issue is the criteria by which the field experts are selected. Since the study is about ASD and music education, all five experts were selected from experts who are actively working in the field of autism in special education institutions and have professional experience in the field. Stating the criteria by which the participant group in the study was selected increases the validity and reliability of the study (Güler et al., 2015, p. 385).

On the other hand, "The data collection phase and recording should be clear" (Güler et al, 2015, p. 385). Video recording of not only the 1st, 6th and 12th weeks but also the entire week's lessons, and planning the interview immediately after watching the recorded data, ensured that the data was analyzed more reliably. In order to interpret the research data in a healthy way, tables including themes and subthemes are included. The explanation of each table is provided in an understandable way under the tables.

3. Findings

In this section, based on teachers' opinions, data on students from lessons I to XII with negative differences, no differences and positive differences in their development were interpreted. Field expert opinions showing the development of a different student in each learning area were exemplified.

3.1 Relationships Building

Findings regarding developmental differences related to the "Relationship Building" learning area are shown in Table 3.

Table 3. *Distribution Showing Findings Regarding Developmental Differences Regarding the "Establishing Relationships" Learning Area*

Theme	Child Theme	Students with Negative Differences in Their Development	Students Whose Development Cannot Be Differentiated	Students with Positive Differences in Their Development
Building Relationships	Eye	-	**S5, S6**	**S1, S2, S3, S4,**
	Side view	-	-	**S1, S6**

As seen in Table 3, in the theme of establishing relationships,

- While a positive difference is observed in the development of students coded **(S1, S2, S3, S4)** regarding the eye contact sub-theme, no difference is observed in students coded **(S5, S6).**
- Regarding the sub-theme of sideways glance, there is a positive difference in the development of the student coded **(S1, S6)**. The field experts about the other students gave no opinion.
- There is no student with a negative difference in development for all sub-themes.

The opinions of field experts' opinions regarding the student coded "S1" from courses I, VI and VII are given below.

- *"There was very little eye contact throughout the lesson, and a lot of sideways glances" (E1).*
- *"Eye contact has increased compared to video 1 and there is almost no sideways gaze." (E5).*
- *"As soon as the music ends, our student stands up and has independent movements, but as soon as the music starts, I observed a huge increase in eye contact" (E1).*

3.2 "Emotion and Behavior Management"

Findings regarding developmental differences related to the "Emotion and Behavior Management" learning area are shown in Table 4.

Table 4

Distribution Showing Findings Regarding Developmental Differences Regarding the Learning Area of "Emotion and Behavior Management"

Theme	Child Theme	Students with Negative Differences in Their Development	Students Whose Development Cannot Be Differentiated	Students with Positive Differences in Their Development
Emotion and Behavior Management	It fits into planned events	-	-	**S1, S2, S3, S4, S5, S6**
	Happiness Status	-	-	**S1, S2, S3, S4, S5, S6**
	Attention span	-	**S5**	**S1, S2, S3, S4, S6**
	Adaptability in event	-	-	**S2, S3, S4, S5, S6**
	Appropriate behavior	-	**S5**	**S2, S3, S4**
	Waiting Behavior	-	-	**S1, S2**
	Imitation	-	-	**S6**
	Instruction follow	-	-	**S3**
	Stereotypical movements	-	-	**S6**
	Turn-taking behavior	-	-	**S4**

As seen in Table 4, in the theme of emotion and behavior management;

- A positive difference is observed in the development of **all students** in terms of the sub-theme *of compliance with planned activities and happiness.*
- *Attention span*, the students coded as (**S1, S2, S3, S4, S6)** Although a positive difference is seen in the development of the student coded **(S5),** no difference is seen in the development of the student.
- Regarding the sub-theme of *harmony,* the student coded (**S2, S3, S4, S5, S6)** There is a positive difference in the development of **(S1).** No opinion was expressed regarding this.
- Regarding the *appropriate behavior sub-theme,* a positive difference is observed in the development of the student coded **(S2, S3, S4), while no difference is observed in the student coded (S5)**. No opinion was expressed regarding the other students.
- Regarding the sub-theme of *waiting behavior, a positive difference is observed in the development of the student coded* **(S1, S2)**. No opinion was given by the field experts about the other students.

- The sub-themes of *imitation* and *stereotypical movements were coded in the student* **(S6)**, the sub-theme *of following instructions was coded in the student* **(S3)**, and there is a positive difference in the student coded as **(S4)** regarding *turn-taking behavior. No opinions were given by the field experts regarding other students on these issues.*

The opinions of field experts' opinions regarding the student coded "S2" from courses I, VI, and VII are given below.

- *"In the first 15-16 minutes of the activity, he never follows the directions and behaves in a completely uncommunicative manner. He was not happy to be in the environment. He tires his teachers too much and neither follows the planned activities nor the activity transitions" (E3).*
- *He participated in the planned activities with pleasure. He had difficulty using his body in the activities, but he was more successful when musical instruments were used. There was an increase in his waiting behavior compared to the first video. He continued to watch his teacher during transitions" (E4).*
- *"The student accompanied his peers in the planned activities. It was observed that the student's attention span increased. He was able to happily reflect the songs and rhythms he learned in the activities he participated in individually with his peer group" (E2).*

3.3. "Emotion Regulation"

Findings regarding developmental differences regarding the "Emotion Regulation" learning domain are shown in Table 5.

Table 5. Distribution Showing Findings Regarding Developmental Differences Related to the Learning Area of "Emotion Regulation"

Theme	Child Theme	Students with Negative Differences in Their Development	Students Whose Development Cannot Be Differentiated	Students with Positive Differences in Their Development
Emotion Regulation	Indicate your preference	-	-	**S1, S2, S3, S4, S5, S6**
	Coping with negative situations	-	-	**S1, S2, S3, S5, S6**
	Keeping in touch	-	-	**S2, S3, S5, S6**

As seen in Table 5, in the emotion regulation theme;

- A positive difference is seen in the development of **all students** regarding the sub-theme of *expressing one's preference appropriately.*
- Regarding the sub-theme of *coping with negative situations,* no positive difference is observed in the development of the students coded **(S1, S2, S3, S5, S6).** No opinion was expressed regarding **(S4).**
- Regarding the sub-theme of *maintaining communication,* no positive difference is observed in the development of the students coded **(S2, S3, S5, S6).** No opinion was expressed regarding the other.
- *There is no student with a negative difference in development for all sub-themes.*

The opinions of field experts' opinions regarding the student coded "S3" from courses I, VI, and VII are given below.

- *"I observe that he gets tense when he does not want to continue the activity and that stereotypical behaviors (jumping) emerge at such times. He has difficulty adapting when the activities change. He does not want the teacher to continue the activity with the musical instrument and makes him put down what he is holding" (E4).*
- *"When we look at the video, he is sitting, there is an activity that he does not prefer, but we observe that the student does not have the behaviors that are normally observed such as throwing himself on the ground, shouting and hitting. There is an activity that he does not want and he refuses it with appropriate body language. Although it seems negative that he does not want the activity, I observe that it is a positive development for a student who cannot speak to physically express that he does not want it" (E1).*
- *"It was observed that the student did not show any behavior of moving away from or abandoning the material while leaving the musical instrument that he did not prefer in the previous sessions, in the group with his peers and with his teacher, but followed and carried out the instructions" (E2).*

3.4. "Positive Decision Making"

Findings regarding developmental differences for the "Positive Decision Making" learning area are shown in Table 6.

Table 6. Distribution Showing Findings Regarding Developmental Differences Related to the Learning Area of "Positive Decision Making"

Theme	Child Theme	Students with Negative Differences in Their Development	Students Whose Development Cannot Be Differentiated	Students with Positive Differences in Their Development
Positive Decision Making	Flexibility in routines	-	-	**S1, S2, S3, S5, S6**
	Refusal	-	-	**S2, S4, S5, S6**
	Acceptance	-	-	**S1, S6**

As seen in Table 6, in the theme of positive decision making;

- *Flexibility in routines*, the development of students coded **(S1, S2, S3, S5, S6)** is seen as positive. No opinion was expressed regarding **(S4).**
- There is a positive difference in the development of the students coded **(S2, S4, S5, S6)** regarding *the rejection sub-theme.* No comments have been expressed about the other students regarding the matter.
- There is a positive difference in the development of students coded **(S1, S6)** regarding *the acceptance sub-theme.* No comments have been expressed about the other students regarding the matter.
- There is no student in whose development there is a negative difference and in whose development no difference can be made in all sub-themes.

The opinions of field experts' opinions regarding the student coded "S4" from courses I, VI, and VII are given below.

- *"It was observed that he sometimes left the environment to avoid doing the activities that were told to him, and this caused the activity to be interrupted" (E2).*
- *"Most students expressed themselves by saying that they accepted the routine and in cases where they did not accept it, they said that they did not want it" (E2).*
- *"Unlike other videos, the student does not exhibit any behavior of leaving the environment or objecting. Signs of boredom that start at the 9th minute in other videos start at the 20th minute in this video and are not expressed as frequently as in other videos" (E3).*

3.5. "Teacher Interaction"

Findings regarding developmental differences in students regarding the "Teacher Interaction" learning area are shown in Table 7.

Table 7. Distribution Showing Findings Regarding Developmental Differences Regarding the Learning Area of "Teacher Communication"

Theme	Child Theme	Students with Negative Differences in Their Development	Students Whose Development Cannot Be Differentiated	Students with Positive Differences in Their Development
Teacher Communication	Communication with the	-	**S3, S4, S5**	**S1, S2, S6**

As seen in Table 7, in the theme of teacher communication;

- While a positive difference is observed in the development of students coded **(S1, S2, S6)** regarding the sub-theme of *communication with the implementing teacher,* no difference is observed in students coded **(S3, S4, S5).**
- There is no negative difference in the development of students regarding the sub-theme of teacher interaction.

The opinions of field experts' opinions regarding the student coded "S5" from courses I, VI, and VII are given below.

- *"You made the student's desire to stand up for no reason meaningful, you planned the activities while standing, and this opened communication channels with the student" (E1).*
- *"The interaction with the teacher is very enjoyable and fun" (E3).*
- *"The student responds to and initiates interactions from the teacher" (E4).*

3.6. Findings on Developmental Differences in Students Related to Subjects Outside the Scope of Learning Areas

Findings regarding developmental differences in students regarding subthemes outside of learning areas are shown in Table 8.

Table 8. Distribution Showing Findings Regarding Developmental Differences Regarding Sub-Themes Outside the Scope of Learning Areas

Theme	Child Theme	Students with Negative Differences in Their Development	Students Whose Development Cannot Be Differentiated	Students with Positive Differences in Their Development
Outside of learning areas	Peer Interaction	-	-	**S1, S2, S3, S4, S5**
	Socializing	-	-	**S1, S2, S3, S4**
	Speaking and language skills	-	-	**S1, S3, S6**
	Motivation	-	-	**S2, S4, S6**
	Affective domain	-	-	**S2**
	Learning and	-	-	**S2**
	Creativity	-	-	**S5**
	Rhythm replaces problem	-	-	**S3**

As seen in Table 8, in the theme outside of learning areas;

- *The peer interaction* sub-theme, a positive difference was observed in the development of the students coded **(S1, S2, S3, S4, S5).** No opinion was expressed regarding **(S6).**
- Regarding *the socialization sub-theme, a positive difference was observed in the development of the students coded* **(S1, S2, S3, S4)**. No opinion was expressed about the other students.
- Regarding the sub-theme of *speaking and language skills, a positive difference was observed in the development of the students coded* **(S1, S3, S6)**. No opinion was expressed regarding the other students.
- Regarding *the motivation sub-theme, a positive difference was observed in the development of the student coded* **(S2, S4, S6)**. No opinion was expressed about the other students.
- **(S2)** regarding *the affective domain and the sub-theme of learning and understanding*. No opinion was expressed regarding the other students.
- **(S5)** regarding *the creativity sub-theme*. No opinion was expressed regarding the other students.
- Regarding the sub-theme of *rhythm replacing problem behaviors, a positive difference was observed in the development of the students coded* **(S3)**. There is no opinion given regarding the other students.
- There is no student with a negative difference in development *for all sub-themes.*

The opinions of field experts' opinions regarding the student coded "S6" from courses I, VI and VII are given below.

- *"The student is a child with a weak expressive language, who can communicate word by word. However, this really needs to be supported. Music has become an alternative means of communication for him. It was a very impressive development that musical instruments and children's songs supported his speech and that his individual teacher also stated that he was doing activities for this purpose. We observe that the student is trying to say more words in terms of speaking the language" (E1).*

4. Conclusion, Discussion and Recommendations

According to the information obtained from the research findings, music education for students with ASD ;

It was concluded from the data obtained from this study group that there were positive effects on 4 students regarding eye contact and 2 students regarding side gaze. Related literature When examined, it was revealed that activities with music education contributed to the communication skills of students with ASD (Eren, 2012; Kılıç, 2019).

All students are expected to comply with planned activities, It was concluded from the data obtained from this study group that it had a positive effect on 5 students in terms of adaptation, happiness and attention span during activity transitions, 3 students in terms of appropriate behavior, 2 students in terms of waiting behavior, and 1 student in terms of imitation, following instructions, stereotypical movements and turn-taking behavior. When the literature is reviewed, it has been revealed that students with ASD follow the instructions in music lessons and accompany the music played by the teacher (Gökmen, 2010, p. 66) and that music education applied to individuals with ASD contributes to the elimination of the individual's problematic behaviors (Bağı, 2022, p. 53; Önal, 2010, p. 226).

All students can appropriately communicate their preferences and cope with negative situations. It was concluded from the data obtained from this study group that it had a positive effect on 5 students in terms of communication and 4 students in terms of maintaining communication. In the study conducted by Yılmaz et al. (2014) on this subject, It has been shown that individuals with autism make improvements in complying with planned activities and expressing their wishes with music education (p. 261, 268).

The data obtained from this study group revealed that flexibility in routines had a positive effect on 5 students, rejection on 4 students, and acceptance on 2 students. In the study by Yılmaz et al. (2014), it was revealed that although students with autism did not

want their routines to be disrupted, significant improvements were made by students with ASD taking the stage in different places and performing music in front of large groups thanks to group music activities (p. 269).

5 students had problems with peer interaction, 4 students had problems with socialization, and communication with the implementing teacher It was concluded from the data obtained from this study group that there was a positive effect on 3 students in terms of speaking and language skills and motivation, rhythm replacing problem behaviors, and 1 student in terms of affective area and creativity. When the literature is reviewed, it is seen that music is a source of happiness for individuals with autism (Altıncıoğlu, 2023, p. 34; Özorak, 2019, p. 64), musical activities with children with special needs contribute to their mental development (Pektaş et al ., 2016, p. 16), skills such as eye contact, attention, direction tracking, verbal imitation, memory, and auditory discrimination are simultaneously developed with a simple song or finger play (Hanser, 1999), music has a motivating effect on autistic children in learning non-musical information (Çoban, 2015, p. 124), developing creativity is one of the aims of music therapy (Campbell, 1994; Gökmen, 2010, p. 19), the expressive power and creative abilities of children interested in music develop (Çilingir, 1990), and speech function is achieved at the age of 3. It has been revealed that results were obtained from music therapy applications carried out with a girl with hearing loss (Beathard & Krout, 2008), that children 's songs can be a supportive application in the education of autistic children with speech disorders (Oyman- Özorak, 2019, p. 91), and that the use of music is an effective way to increase language development in autistic children (Lim, 2007, p. 49; Sağırkaya, 2014, p. 17).

It has been concluded from the data obtained from this study group that there is no negative impact on all learning areas related to social skills. When the literature is examined, it has been revealed that music activities have a positive effect on children's socialization processes (Kern, 2006; Yılmaz et al., 2014, p. 269; Berrakçay, 2008, p. 21; Tatlı, 2023, p. 57). It is seen that the studies conducted on the effect of music education on the social lives of students with ASD support all the results examined within the scope of the research.

Suggestions regarding the research results can be put forward as follows:

That music education be given to students with ASD in all formal and informal educational institutions in our country and that music rooms with Orff instruments and pianos, which are physically and technically equipped, be created in these institutions.

Various rhythm instruments and Orff instruments in music lessons in order to reduce the textural sensitivity of students with ASD and increase their motivation.

In music lessons with students with ASD, it is recommended that activities be selected in accordance with the individual characteristics of the students and that these activities be planned with easy targets in mind.

Within the scope of the research, it was revealed that students with speech limitations made progress by singing children's songs. In this context, it is recommended that teachers who work with students with speech limitations include children's songs in their lessons.

It is known that lessons conducted with students with ASD are conducted both individually and in groups (MEB, 2010). However, research results also show that music activities conducted with students in groups benefit their socialization processes. For this reason, it is recommended that music activities and music lessons be planned in small groups with students with ASD.

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