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The Effectiveness of Music Education in Psychomotor Development, Communication and Social Skills in Children with Autism Spectrum Disorders and Intellectual Disabilities-A Trend Study

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Abstract

The study aims to investigate the use of music education in inclusive classes in ordinary schools to show substantial evidence on how musical experiences may impact the various forms of development of children with Autism Spectrum Disorders and Intellectual Disability. The research synthesizes the advantages of music in education by examining several musical applications found useful for special needs students. However, presents some applied examples to fulfill this vision based on our dialogue about different music applications in the field of special education in Albania and highlights the efficiency to use music education as much as possible in inclusive classes. The study was conducted in a school in Vlora, Albania with five children attending this school (mean age 8-13 years) who presented ASD and ID or other related disorders. A structured checklist utilized to evaluate their progress over a three-month period, facilitated by music education sessions. Findings showed that children in the music group exhibited larger enhancement over time on rhythm performance, communication skills, and social behavior. The results raise an important subject about the value of integrating music within educational programs designed to help special needs children as it can serve as an effective tool in supporting all developmental domains. The findings from this paper suggest musical interventions may have further potential to support educational processes and development of children. More research is needed to uncover additional advantages and enhance music education instructional strategies for students with special needs.

Keywords: *Music and Special Education, Autism Spectrum Disorder, Intellectual Disabilities, Psychomotor Development, Communication, Social Development*

INTRODUCTION

The right to Education for all children has been written and assured in Albanian legislation, through the Law. No. 69.2012. Pre – university education (2012) and normative clauses (Normative Dispositions, 2013), which sets the ground for revision of the National Strategy for Pre-University Education. During the last decade considerable efforts have been made to promote and enable an inclusive learning environment in Albanian elementary and secondary schools, and many of these efforts targeted the pre - university education. Children with special needs in Albania are included in the regular classroom, receiving support from assistants and support teachers (Ministry of Education, 2014). One of the most concerning barriers for children with disabilities is the curriculum. (Cuko, Kulla, & Kasapi, 2012). This is mainly related to its inflexibility, which stops it meeting the different needs of children with disabilities. In Albania we still do not have a suitable literature for inclusive education, but the teachers adapt the topics of the program to the individual plan of education (PEI). In many cases it happens that in the field of music there is not much need for adaptation as art itself is a field that includes children without the need for academic and scientific knowledge. In the educational system along with other subjects, music engaged in educational activities have shown positive effects on children with ASD, and intellectual disabilities such as emotional engagement, social interaction, communication, motor skills, suggesting that musical activities can lead to positive changes (Sharda et al., 2018).

The purpose of the study is to investigate, describe and comment upon the meaning, efficacy and roles of music education for development of children with autism spectrum disorders (ASD) and intellectual disability (ID) in Albanian schools. This study examines how music teaching in inclusive classrooms can be accomplished in

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collaboration with special education teachers and music teachers using successful methods to integrate students with ASD and ID for social and communication problems, sensory sensitivities, and executive functioning psychomotor field and restricted or stereotyped behaviors. During the year 2023-2024 has been produced the first music guideline for special pedagogy in the framework of the project "The impact of music education in special pedagogy" -an applied research approach founded by National Agency for Scientific Research and Innovation (NASRI). This is available for all the music teacher and assistant (special teacher) to adapt music lessons through examples.

LITERATURE REVIEW

According to the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*, of the American Psychiatric Association, people with ASD often are characterized by, difficulty with communication and social interaction; restricted interests and repetitive behaviors; symptoms that affect their ability to function in school, work, and other areas of life. According to the same source (APA, 2022), people with intellectual disability are characterized by significant limitations in both intellectual functioning and adaptive behavior, where conceptual, social and practical domains are affected.

According to the literature review music can be used as a reward by teachers or teaching assistants (most individuals enjoy listening to music), parents should likely more thoughtfully consider the use of this treatment for language and speech development in children with autism spectrum disorders and intellectual disability. Since music is a way of interaction, social and emotional connection for autistic people without involving verbal communication (Quintin, 2019). Nevertheless, music interventions are often claimed to have an effect on motor, language, social, cognitive and academic skills (Costa-Giomi, 2004; Schellenberg, 2004; Forgeard et al., 2008; Standley, 2008; Jentschke & Koelsch, 2009; Southgate & Roscigno, 2009; Yazejian & Peisner-Feinberg, 2009; Strait et al., 2010). The results from a meta-analysis done by Gold, Wigram and Elefant, 2006 is suggested that music therapy involving singing and music making can have a positive effect on the verbal and nonverbal communication skills of autistic spectrum disorder children. These results imply that music therapy is more beneficial than a similar type of therapeutic intervention without the use of music, suggesting there may be active ingredients in music within the practice executing measurable effects. Numerous studies in the literature support the idea for a strong connection between musical training and better communication skills in normally developing children and adults. In this sense music has even been described as a dynamic context for collective engagement and the development of social competences (Geretsegger et al., 2014; Hernandez-Ruiz 2020b; James et al., 2015; LaGasse, 2017; Simpson & Keen, 2011). A variety of RCTs have proven the efficacy of music therapy to facilitate numerous strengths including increased social interaction, joint attention, receptivity for verbal development and non-verbal communication skill (Gattino et al., 2011; Kim et al., 2008; LaGasse, 2015; Thomp-son, 2012). A large number of authors have given their opinions regarding the aspect of motor skills development for children with autism and intellectual disorder, rhythm as an essential element when it is possible to synchronize rhythmic movements involving the whole body. For example, musical experiences which implicate fine motor skills during playing of specific music instruments like piano and guitar will offer many exercises to practice, improve hand control over surroundings or praxis by permitting several opportunities for exercise finger movements appropriately time both force generation and application (Rodriguez-Fornells et al., 2012). A number of music education strategies that share features with the Dalcroze and Kodaly methods of musical learning emphasize gross motor performance (Findlay, 1971; Hurwitz et al., 1975; Bachmann, 1991; Frego et al., 2004). These interventions encourage the use of body movements as a means to learn music rhythms, but they enhance gross motor coordination and movement timing in the process (Findlay 1971; Hurwitz et al. 1975; Bachmann 1991; Frego et al.

Music education may be embedded in exploratory activities involving body percussion and song within a risk-taking environment (Campbell, 2010). Vocal (grunts, vocal slides, pitched yell) - (with Griffith strategies include vocal and non-vocal types of key response, the latter being: Standing/sitting, running, eye contact, moving body parts/fingers/hands- Griffith, 2009). In this sense music has even been described as a dynamic context for collective engagement and the development of social competences (Geretsegger et al., 2014; Hernandez-Ruiz 2020b; James et al., 2015; LaGasse, 2017; Simpson & Keen, 2011).

MATERIALS AND METHODS

Population and Participants

The study population consists of students with ASD and ID, who study in inclusive schools. From the data obtained from the Institute of Statistics in the Republic of Albania (INSTAT) in 2021, 4699 students with special needs attended inclusive education. However, there is a lack of descriptive data in regards to children with disabilities in early childhood settings.

Five children, 2 of them diagnosed with ID, 1 child diagnosed with Attention-deficit/hyperactivity disorder (ADHD) and 2 with ASD have been included in the study. The age of the students varies from 8-14 years old. 3 were boys and 2 girls. All the participants studied in the same 9-year school (primary and lower secondary education school "Lef Sallata" Vlora, Albnaia) in the city of Vlore. 17 students with special needs study in this school and the five students included in the study were chosen based on these criteria:

1. Be students diagnosed with ASD, ID and related disorders
2. To be students of primary and lower secondary education, in the age group of 7-15 years
3. To follow the subject of music education
4. To be supported by specialized teachers

Table 1. Participants' demographics

	Gender	Age	Diagnostic	School Grade	Nationality
Participant 1	Boy	8 years old	ADHD	2nd	Albanian
Participant 2	Girl	9 years old	ASD	3rd	Albanian
Participant 3	Girl	12 years old	ASD	6th	Albanian
Participant 4	Boy	13 years old	ID	7th	Albanian
Participant 5	Boy	14 years old	ID	8th	Albanian

Methodology

The study used the descriptive and linear quantitative method of time series measurements. The reason for using a quantitative approach is that the approach was used based on sequential descriptive and numerical characteristics as it attempts to prove the hypothesis.

The study investigates how the intervention through the music sessions has influenced psychomotor, communication (verbal and non-verbal), social development of the participants, evidencing the developmental trend that resulted after the implementation of the music education sessions.

Design and instruments: assessment of the level of psychomotor, communication (verbal and non-verbal), social development has been conducted to five students included in the study through the first measurement at the beginning of the intervention and then 2 more consecutive measurements were made every month. So in total, 3 measurements were made in a time series of 3 consecutive months. To measure psychomotor development, communication and social behavior, has been used the indicator "Observation and Teaching Indicator for Children with Mental and Physical Retardation" created by Department of Public Education, Office of Research and Pedagogical Documentation "La Gruyere" (1990), Sion, Martigny, Switzerland, which is widely used by students of Specialized Pedagogy Program in the Department of Education of the University "Ismail Qemali" Vlore, since 2004. From this indicator, which measures the cognitive, psychomotor, sensory, language and communication, social and autonomy domains, a checklist was created consisting of 35 items that measure psychomotor development (21 items), the development of verbal and non-verbal communication (9 items), and the development of social behaviors (5 items). The measurement of the values of each field was carried out using a five measurement scale for each item/field of development where 1= does not perform; 2 = performs with physical and verbal assistance; 3 = Performs with difficulty with verbal assistance; 4 = performs without difficulty with verbal assistance and 5 = performs without assistance.

The data obtained from the measurements have been entered into the SPSS database and descriptive and time series results have been generated for each area of development. The sums of the measurement scales were calculated according to the responses of each category/field of development, such as rhythm, motor skills, etc. and a score equal to their sum was calculated. Further, the sums of the scores of the five students, for each score, were averaged. Graphs have been created that summarize exactly the average progress of these indexes (scores) in each of the three measurements, as a way to measure, observe the progress and see the improvement of the sample in the three measurements.

The Manual "Guidelines for music teachers and supportive teachers for music education in inclusive education for children 6-14 age years old" was used for the realization of the music education sessions, which has 9 practical sessions of music education and which was published in the framework of the project "The study of the impact of music education in specialized pedagogy- An applied research approach" supported by NASRI and implemented by the researchers group.

Five teachers (general school special educators and the music teacher for every child) who conducted the assessment and intervention during music sessions and 4 lecturers of the Department of Education who conducted the training of the teachers to use the manual of music in special education have been engaged during this process.

Ethical Considerations

To carry out this research and to have access to the school setting, the researcher group requested a written permission from the Ministry of Education and Sports and the study protocol was approved on 14.04.2024. First, we informed the head of the school selected and the teachers and parents about the topic and importance of this research, and we informed them that their participation was free and not obligatory. All participants agreed to participate in the research voluntarily.

Informed Consent: Written informed consent has been obtained from the parents of the participants.

Any data obtained through this research is anonymous, coded and confidential.

Procedures

The study was conducted in 3 months from April to June in a total of 9 weeks. Participants were attending a public school in Vlora City.

After the completion of obtaining permission to conduct the study, the group of researchers held an information session with the teachers of the school where the study was conducted and there were selected 5 supportive teachers and one music education teacher, who are the teachers of the 5 selected children (children that meet the inclusion criteria in the study). They agreed to carry out the intervention together with 4 researchers of the study.

Two training sessions were held with teachers to familiarize themselves with the instruments used in the study and their use. A work calendar was drawn up for the evaluation and the intervention periods, as well as practical instructions for the realization of the music education sessions, and the tools that can be used.

The first measurement according to the instrument was carried out in collaboration between researchers and supportive teachers, while the other two measurements were made by supportive teachers. The musical intervention was performed by the music teacher, according to the established calendar. Each session lasted 45 min, and were held once a week for a total of 9 weeks.

At the completion of the study, researchers discussed with the teachers regarding student progress made toward their individual objectives. The data were administered by the support teachers and music teachers and were submitted to the group of researchers at the end of the intervention.

RESULTS

Psychomotor Development

To measure the psychomotor development of the students included in the study, a checklist was completed with 21 variables divided by fields: 1) rhythm performance (13 variables); 2) advanced motor skills (5 variables); and 4) ability to organize space (3 variables). These variables were assessed 3 times during the music education intervention: the first time at the beginning of the intervention, the second time after the first month of the intervention, and the third time after the intervention (at the end of the 9-week period). Below we present graphically the results of measurements according to the areas of psycho-motor development, described as above.

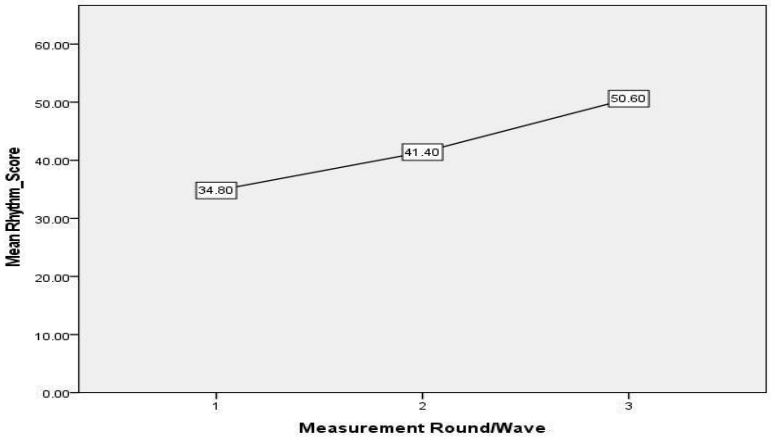

Figure 1. Trend of rhythm performance.

In this graphic, the measurements have shown significant improvements in rhythm performance that are related to structure motor movements in accordance with the rhythm. From the measurements of the 13 rhythm variables, the most improvement was evidenced to the adaptation of the movements to the musical rhythm (Mean = 4); accompanying rhythm with movement (Mean = 4); performing a simple spin or dance (Mean = 4); coordination of hand-foot movements (Mean = 3.67).

The scores for each rhythm task provides insight into overall performance: One of them "Coordination in the bilateral movements clapping and marching" the highest total (55), suggesting a collective strength in this area, while "Reproduction of simple rhythmic structure" has the lowest total (38), highlighting it as a significant area for improvement. The results from the rhythm measure indicate an overall positive trend of participants in multiple areas including responding to audio cues and reproducing a rhythmic impression.

Overall data analyses related to auditory cueing and imitation of rhythm show a strong positive trend in rhythmic abilities. But challenges persist in carrying out organized movements and sustaining attention, which need more study and instructional focus. This is important information in developing music education programs for children with special needs, based on data.

Table 2. Average values of measurements of rhythm.

		Falling regularly according to its true rhythm.	The adaptation of movements to the rhythm of the music.	Performing a movement according to the rhythm of the music.	Start of a movement when the sound signal is given."	The interruption of movement by a sound signal	Reproduction of Rhythm	Accompaniment of Rhythm	Maintenance of Rhythm	Reproduction of a Simple Rhythmic Structure	Graphic Reproduction of a Simple Rhythmic Structure	Performing a Turn or Structured Dance	Coordination in bilateral movements such as clapping or marching.	Indicating Increased Vigilance or Attention
N	Valid	15	15	15	15	15	15	15	15	15	15	15	15	
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	
Mean		3.47	3.13	3.27	3.60	3.53	3.07	3.27	3.27	2.93	2.53	2.93	3.67	3.60
Mode		4	4	3	4	4	3	4	3	3	3	2	5	4
Minimum		1	2	2	2	2	2	2	1	1	1	2	2	2
Maximum		5	4	4	5	5	5	5	5	4	4	4	5	5
Sum		52	47	49	54	53	46	49	49	44	38	44	55	54

Advanced motor skills

Table 3. Average values of measurements for advanced motor skills

	Placing Hands on Piano Keys and Striking Keys in Sequence:	Striking Instruments Such as Tambourine or Drum Skill in hitting percussion instruments accurately.	Placing with fingers the string instrument to produce sounds	Coordination of two hands in two percussion instruments	Tracing the figures with finger created by the symbol of musico-grama
N 15	15	15	15	15	15
0	0	0	0	0	0
Mean	2.73	3.53	3.40	3.13	3.07
Mode	3	4	3[a]	3	2
Minimum	1	3	2	1	2
Maximum	5	4	4	5	5
Sum	41	53	51	47	46

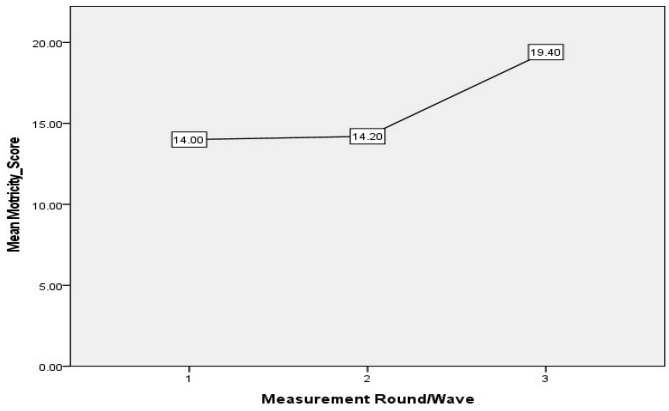

Figure 2. trend of advanced motor skills

Five variables were used to measure the advanced motor skills of the students included in the study. The table below shows the results of improvement of these skills during the music intervention. It is noted that the amount of the result that shows improvement is not as great as for other skills, which indicates the degree of difficulty in learning advanced motor skills to students with special needs.

As can be seen from table no.3 the 3 highest average values were achieved in the realization of: Striking Instruments Such as Tambourine or Drum Skill in hitting percussion instruments accurately (mean = 3.53); plucking the strings of the instrument to produce sounds (mean = 3.40); hand coordination in the use of two

hands on two percussion instruments (mean = 3.13) and the lowest values in the use of piano keys (an expected conclusion due to the difficulty).

Table 4. Average values of measurements for skills on space organizing

	Dance across the mirror following the drawing lines	Movement in the Room with Music, Stopping According to Music: Ability to move within a space in response to musical cues, including stopping as per the music.	Group Musical Movement, Following One Another Without Touching: Coordinated group movement following each other without physical contact.
N 15	15	15	15
0	0	0	0
Mean	3.07	3.33	3.47
Mode	3	4	4
Minimum	2	1	2
Maximum	5	5	5
Sum	46	50	52

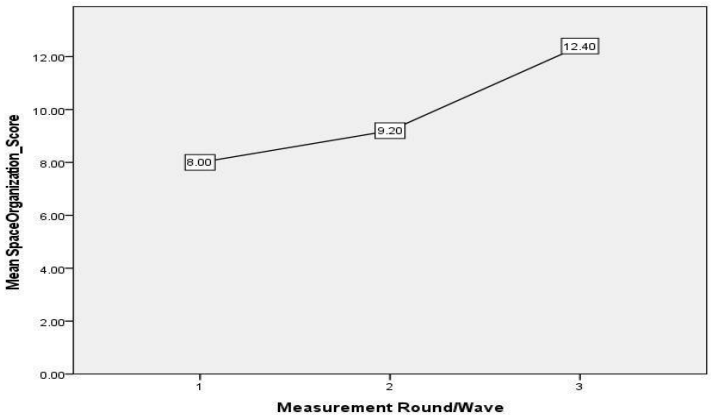

Figure 3. Trend of space Organizing.

From the description above of the graphic these benefits could be associated with involvement of children in activities that join movement to music. Activities like dancing in front of a mirror, imitating movements as they were led by music or group exercises where the children moved along without touching forms probably helped these functions to become better organized and coordinated.

Chart similarly shows the positive effect of musical and movement sessions on child organization, comparing this with control children who do not regularly conduct exercise. The improvement round by round shows there is value in these sorts of activities for developing the competencies. Motor Coordination: Activities that incorporate music with motor movement - i.e. dancing or exercises performed to a rhythm and beat - can result in improved motor coordination for children. This can be attributed to the rhythmic and repetitive characteristics of such activities, which are known for coordinating as well synchronizing movements.

Further Development of Cognitive and Social Skills: Such activities support additional cognitive capabilities like memory, attention; aids social skills through group involvement, imitation.

Communication

To measure the changes in the level of communication, a checklist with 9 variables was used where 4 variables were used to measure verbal communication and 5 variables to measure non-verbal communication.

As for verbal communication, there is an improvement from measurement to measurement, also shown in the graph below:

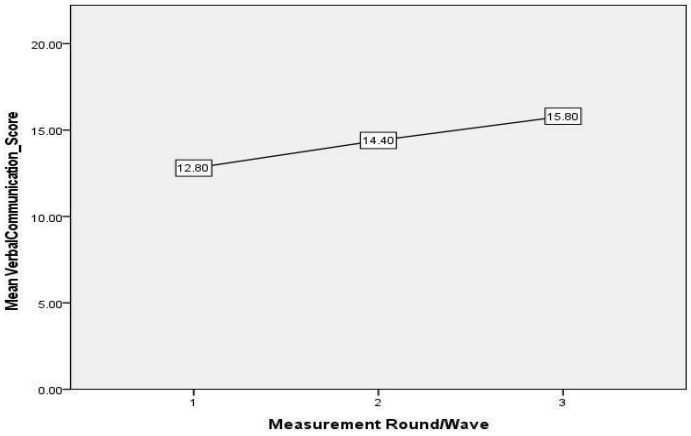

Figure 4. Trend of Verbal Communication.

Table 5. Average values of measurements for verbal communication.

		Demonstrates Developed Vocal Phrasing: Skill in expressing developed vocal phrasing	Expresses with Songs, Using Lyrics to Complete a Phrase: Using songs and lyrics to express and complete phrases.	Uses Song Phrases to Complete Sentences: Ability to use song phrases to articulate and complete sentences.	Shows with gestures, symbol
N	15	15	15	15	15
	0	0	0	0	0
Mean		3.53	3.67	3.67	3.47
Mode		3	3	3	3
Minimum		1	2	3	1
Maximum		5	5	5	5
Sum		53	55	55	52

According to the data provided in table 5, the slightly higher scores in verbal communication suggest a stronger ability in using language and song-based expressions. The variability in scores, particularly in completing phrases and articulating complete sentences indicates areas where participants might benefit from additional training or practice to achieve more consistent performance. Overall, these skills are crucial for effective musical and communicative engagement, highlighting the importance of developing both verbal and non-verbal communication abilities

Non-Verbal Communication - the data indicates that participants generally exhibit strong non-verbal communication skills, particularly in using drawings for expression, and strong social behaviors, especially in sharing and participating in organized activities. The high scores across these domains highlight a well-developed ability to engage with others and express themselves non-verbally. However, the variability in eye contact and interaction suggests that some participants may benefit from targeted interventions to enhance these specific social skills. Overall, these findings underscore the importance of fostering both expressive and interactive abilities in educational and developmental contexts.

Table 6. Average values of measurements for non-verbal communication.

		Using facial expressions to show joy	Using facial expressions to show boredom..	Using facial expressions to show annoyance	Using side of the head signs to indicate negation or affirmation	Use of Drawings as a Means of Expression: Ability to use drawings to express ideas or emotions.
N	15	15	15	15	15	15
	0	0	0	0	0	0
Mean		4.53	4.53	4.53	4.33	4.00
Mode		5	5	5	5	5
Minimum		3	3	3	3	2
Maximum		5	5	5	5	5
Sum		68	68	68	65	60

Also the measurement values shown in graph no. 5 a significant improvement in non-verbal communication skills, measured in successive measurements:

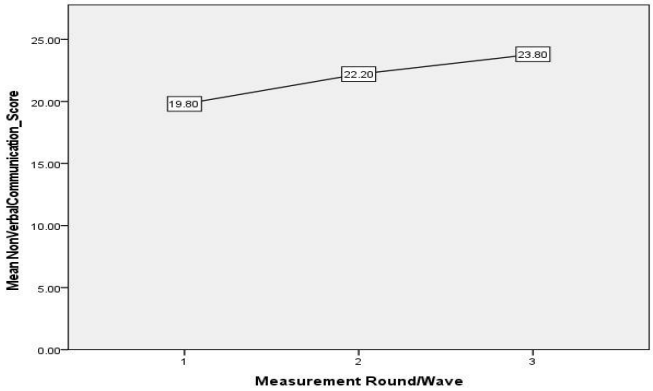

Figure 5. Trend of Nonverbal-communication.

Social Behavior

Enhanced Eye Contact and Interaction there is a positive slightly lower average score in enhanced eye contact and interaction with peers compared to other measures, indicating variability among children. Children generally stay engaged in choral group activities, although there is a notable number (mode at 3) who might be less engaged than others. Sharing Musical Instruments. High scores in this area indicate strong engagement in social interactions involving sharing, which is a positive outcome of the intervention. Data is indicated with typically high scores across all dimensions, as means of the measured attributes range from 3.67 to 4.53 (Table 7). The result indicates an overall positive response to the intervention, but in particular with respect of non-verbal communication through drawings and social interactions. The mode being 5 in most categories suggests that many children are performing at or near the maximum level, indicating a strong overall effect of the intervention. The reduced eye gaze and socialization score could be an area for improvement, or a specific approach to help those with low skills.

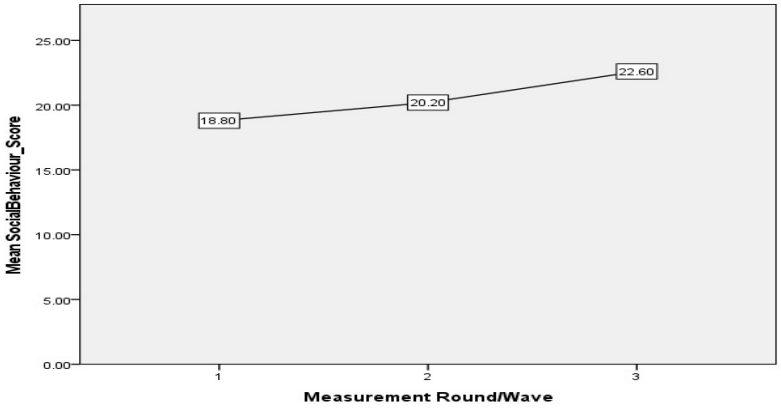

Figure 6. Trend of Social Behavior.

Table 7. Average values of measurements for social behavior.

		Displays Increased Eye Contact, Contact with Parents, Peers: Enhanced eye contact and interactions with parents and peers	Stays in Choral Group for Extended Duration: Ability to remain engaged in group choral activities for extended periods.	Interacts, Shares Musical Instruments and Tools: Engagement in social interactions, including sharing musical instruments.	Shows Increased Motivation to Participate in Organized/Directed Activities: Motivation and willingness to participate in structured activities.	Respecting others during their musical activity in the ensemble choir
N	15	15	15	15	15	15

0	0	0	0	0	0
Mean	3.67	3.87	4.47	4.53	4.00
Mode	5	3	5	5	4
Minimum	2	3	3	3	2
Maximum	5	5	5	5	5
Sum	55	58	67	68	60

DISCUSSION

Psychomotor Development. The data suggests a generally moderate to high level in reproducing simple rhythmic structures among the participants, with the majority scoring in the mid to upper range. However, the presence of lower scores indicates that some participants may benefit from additional practice or instruction to improve their rhythmic skills. This distribution highlights the variability in rhythmic abilities within the group, suggesting a potential area for targeted skill development.

Nonetheless obstacles still exist in identifying their ability to implement structured movements and remain engaged, each of which deserves further exploration as well as actionable practice. The data sets a great foundation for creating specific music education programs catered to children who have these disorders.

These results also confirm that the interactive and movement engaging musical activities are effective to stimulate rhythmic capacities, synchronized with physical movements for children.

These techniques not only serve to understand the rhythmic concepts, but also assist in general coordination of gross motor and timing as discussed by earlier studies (Findlay 1971, Hurwitz et. al., 1975; Bachmann, l991; Frego et.al.l2004).

Communication Skills. After 9 sessions of music education sessions, it was observed that the students expressed improvement in verbal and non-verbal communication, the progress was evident mainly when they moved on to learning new songs, the phrases were also understood in a new story for each song. Music intervention is also reported to have a significant effect on developing communication skills. Studies have demonstrated that music practice interventions are used as a tool to improve non-verbal and gestural communication outcomes. Numerous studies suggest that music therapy can be an effective method for developing communication skills in individuals with Autism Spectrum Disorder (Whipple, 2004).

As can be seen from the measurements shown in the tables above, one of the most important areas for the development of students with different needs is communication, which is not easy for students with autism spectrum disorder and those with intellectual disabilities. From the various studies it's known that children with ASDs and ID have significant communication impairments despite relatively preserved musical skills (Bonnel et al., 2003; Heaton, 2003). Music intervention has been used to facilitate verbal and gestural communication skills in children with ASDs (Edgerton, 1994; Buday, 1995; O'Loughlin, 2000; Farmer, 2003; Gold et al., 2006; Lim, 2010; Tindell, 2010; Gattino et al., 2011; Lim and Draper, 2011; Simpson and Keen, 2011; Wan et al., 2011)

Musical sessions not only enhance music and speech perception but also directly impacts expressive language.

Social behavior. However, it was observed the upward trajectory of measures and interpreted that socially embedded music- movement contexts involving listening, vocalizing,-moving-verbalizing as well playing instruments provided great opportunities for cultivating social connections and facilitated communication and ultimate emotional attunements with children diagnosed on autism spectrum disorder (ASD) or intellectual disability (ID). Children engaged in interaction with their peers in class shared musical instruments whilst playing and singing together as part of a choral group for an extended duration. This was also enhanced by how respectful they were of others during the musical games in the ensemble. The measurement showed that children during the period of learning music by interacting and sharing simple instruments with their group mates at school also increased the musical games they had by cooperating with others.

CONCLUSIONS AND RECOMMENDATION

This study is the first of its kind in Albania which highlights the study trend of the development of general skills improvements as a result of using music for development of motor skills, communication and social

development for children with ASD and ID. Future research is needed to use more rigorous study designs, such as randomized controlled trials (RCTs), to better evaluate the efficacy of music sessions on the core deficits and comorbidities associated with ASD. In the collaboration with music and special educators during the research, music activities were realized adapting the music programme in school. After examining the results, it is evidenced that teachers are willing to tailor music and curriculum needs around students with disabilities. Those changes, along with whatever supplementary resources are needed and the occasional training can deliver better results. Results showed that students were integrated into class groups and received their musical education effectively. VanWeelden and Whipple (2014) indicate in their research that teachers are willing to adapt music curricula to better support students with special needs for the inclusion of auxiliary resources.

From the reference material in this study and the generated experience through musical intervention in the School "Lef Sallata" it is confirmed the importance of music in the global development of children through the following conclusions:

From the first measurements to the third one it is noticed that musical experiences as a tool for stimulation influenced the improvement or enhancing the psychomotor development of children with ASD that attend the music classes. During the measurement process by the checklist in the research group we noticed that by using different musical experiences, based on a sequential systemic educational process that respects the individualities of each child, there was an impact in their psychomotor development, increasing their Development Quotient.

Music was beneficial in the intervened group by opening up different communication channels between the child, educators and peers. It also developed motor and social skills.

More elaborate multisystem, music interventions are greatly needed for the treatment of communication, social-emotional behavioral and perception-motor capabilities in students with ASD. In addition to that, we outline a number of specific recommendations regarding the type, duration and frequency of music interventions. First of all is that the active music interventions of group singing, playing instruments, rhythmic games and synchronized giving-and-taking should be encouraged over passive listening. We know that it's not easy for the teachers to work musically with children with ASD and ID but through the light of music activities benefits observed with socially embedded activities the children are included in groups. It's very important to encourage people to move away from pure improvisational music-based activities towards better content development.

It's the necessity to measure skills to new contexts or standard assessment scores, and demonstrating maintenance after a long follow-up period. Interventions should be implemented in the school environments or home. With respect to the intensity of interventions, a minimum frequency of music-based interventions should be no less than 2 times per week with each session around 35 min. It is very important to review the music curriculum in Albanian schools once again because the music education is 1 hour per week. As it is proven according to the literature and this modest study that the values for the development of children with special needs are undisputed in all areas. It would be more valuable to add an hour of music lessons either within school hours or outside of school hours to improve the skills of children with ASD and ID, in the meantime a primary need is to complete the classrooms with didactic tools, musical instruments used as an educational and inclusion tool.

Hypothesis

Musical education in school influences improvement of psychomotor, communication and social development in children with autism spectrum disorder and intellectual disability.

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