The importance of musical play for the development of musical abilities of First Grade elementary school pupils

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Abstract

In this study, we examine how musical play affect the development of musical abilities of first-grade pupils of elementary school. The research consisted of three parts: the initial testing of pupils' musical abilities, holding ten hours of music lessons in which the emphasis was placed on conducting musical play, and the final testing of pupils' musical abilities. With the Mann-Whitney U-test, we found that the difference in the results of the initial and final testing was statistically significant for all three musical abilities — reproducing rhythmic phrases, reproducing individual tones, and reproducing melodic phrases. In this way, we proved that the musical play that is conducted as part of music teaching contributes to the development of pupils' musical abilities.

Key words: musical play, musical abilities, music teaching

Introduction

Musical abilities

Psychology of music is a science that deals with music as a specific form of human experience and its subject, understood in the broadest sense, is a systematic, scientific study of the relationship between musical phenomena, rules and musical activity, and psychological laws of perception, cognition and affective response (Mirković-Radoš, 1996). Many prominent authors have so far dealt with the subject of defining musical abilities which is one of the most important problems of music psychology. We can talk about the existence of two types of definitions. Some of them are vague, like that of Seashore and Bentley. Seashore (1938) thus states that musical talent is not just one talent, but a hierarchy of talents branching within musical consciousness, while Bentley (1966, 1983) points out that musical ability is a characteristic or set of characteristics by which we distinguish musical from nonmusical persons, although the difficulty of distinguishing between musical and non-musical persons also arises. On the other hand, there are also operational definitions in which musical abilities are tried to be defined by descriptions of various activities that are characteristic of musical persons. Only such definitions, each from its particular point of view, manage to bring us closer to the concept and nature of musical abilities. Teplov (1966) points out that the possibility of successfully engaging in musical activity depends on a qualitative original combination of all abilities, while musical activities include composing, performing and listening to music. He states that the basic feature of a sense of music is the ability to affectively receive music and experience it.

Behaviorist Lundin (1967) distinguishes between musical ability and musical talent. According to him, musical abilities are acquired habits and include various discriminations such as pitch, intensity,

rhythm, harmonization of melody, playing an instrument and the like, while musical talent is the ability to perform within creative or artistic skills. Farnsworth advocates the use of the term musical ability because it is the broadest and safest of all as it claims nothing about heritage and refers to the existence of multiple abilities (Farnsworth, 1974). On the other hand, Révézs (1954) speaks of musicality, which he defines as the need and ability to understand and experience the autonomous effects of music and to evaluate musical expression based on its aesthetic content. He also mentions the characteristics of a musical person, the most important of which are sensitivity to the artistic quality of the work, the ability to aesthetically evaluate a musical work and musical performance. According to Mirković-Radoš (1983), musical abilities are a very complex phenomenon and include a number of abilities, such as understanding and remembering melody, rhythm perception, understanding tonality, determining intervals, perceiving the aesthetic meaning of music and absolute hearing.

Even today, there are discussions about the structure of musical abilities, which focus on the question of whether it is a single, unique ability or several abilities. The understanding of the structure of musical abilities has developed in two directions: elementarist and unitarian (Dobrota, 2012). The founder of the elementarist view of the structure of musical abilities, Carl E. Seashore, states that musical abilities are the sum of several independent properties that can be present to varying degrees. Musical talent is a hierarchy of talents that branch out within musical consciousness (Mirković-Radoš, 1983). In contrast, according to the unitarian point of view, musical ability is a general ability of the composite type, whose aspects are interconnected. A notable representative of this view, Geza Révézs (1954) argues that the most significant characteristic of a musical person is sensitivity to the artistic quality and ability to aesthetically evaluate the work and its performance. The problem in his claim is the part that refers to the exclusive innateness of musical abilities and his view that someone possesses musical abilities in full or does not possess them at all (Mirković-Radoš, 1983). Robert Lundin (1967) advocates a behaviorist view of the structure of musical abilities. He points out that musical ability is not a unique trait but consists of a whole range of interrelated behaviors that are created by a person's interaction with musical stimulation throughout life. Although he points out how musical behavior is acquired, he does not deny the existence of biological potential.

American music psychologist Edwin E. Gordon (2003) cites the existence of two forms of musical ability: developmental musical ability and stabilized musical ability. Developmental musical abilities stem from biological potential and develop between the fifth and eighth year of life, while stabilized musical abilities represent the full development of biological potential, that is, developmental musical abilities, and are formed around the ninth year of life under the influence of informal and formal influences. Gordon states that musical abilities are normally distributed which means that about 68% of people possess average musical abilities, 28% of them below average or above-average musical ability, and only 4% of people possess extremely high or low musical abilities. Also, Gordon points out that musical abilities are multidimensional. Namely, he determined the existence of more than 20 musical abilities by factor analysis. At least seven musical activities are extremely important for stabilized musical abilities, and two are the foundation of developing musical abilities. As a foundation of musical abilities, Gordon cites audition, that is, the immediate impression or intuitive response to a musical stimulus that a child is capable of without musical education (Cutietta, 1991; Gordon, 1987, 2003).

When it comes to factors of musical development, there is a divergence of opinion among psychologists. Some of them, like Seashore and Révéz, argue that both musical talent and artistic performance rest solely on inheritance. Others,

mostly proponents of behaviorism, state that musical behavior is acquired and emphasize the influence of the environment as an important factor in musical development (Mirković-Radoš, 1983).

Many music psychologists consider both the heritage and the influence of the environment to be important for musical development (Davidson, Howe & Sloboda, 1997; Howe, 1990; McPhee, Stollery & McMillan, 2005; Wing, 1971). In their view, although musical ability is partly innate, unless the environment encourages musical activity, musical talent cannot manifest. Thus, excellence in music depends not only on biological factors, but also on the environment in which children live, that is, on the possibilities for music learning as well as on the ways of music learning.

Research shows that musical abilities are affected by inheritance to a certain percentage. De la Motte-Haber (1999) cites data according to which if both parents are musically gifted, 70- 85% of children are also musically gifted. In 60% of children, musical talent is found when only one parent is musically gifted, and in 15- 25% of children if neither parent was musical.

A longitudinal study conducted by Kelley and Sutton-Smith (1987) showed that parents have a great influence on the development of a child's musical abilities. The research was conducted from the birth of three girls to the second year of their lives. The girls lived in three different families whose musical environment was different: the first pair of parents were professional musicians, the second parents were musically oriented but were not professional musicians, and the third parents were not musically interested and used little music during their upbringing. The differences between a family that did not use music in their upbringing and the other two families were immense. Two girls from a richer musical environment showed more developed musical behavior.

It is not disputed how these two factors interact and how musical abilities are the result of the interaction of heritage and the favorable influence of the environment. Although both basic musical abilities (sense of rhythm, pitch, duration and color of tone) and complex ones (musical memory, sense of chords, harmony, modulation, etc.) develop based on the combined influence of innate dispositions and environmental activities, the former are more determined by genetic inheritance, and the latter are largely determined by development (Dobrota, 2012).

Children's Play

Many authors emphasise the importance of play for the overall development of a child. Through play the child learns, acquires different skills and socializes. Swiss psychologist Jean Piaget (1962) considered play to be an essential element in a child's normal development. He interpreted the play as an assimilation or an attempt by a child to interpret stimuli from the environment based on the cognitive structures he possesses. According to his theory, play does not have to result in the creation of new cognitive structures and new ideas, it can be a reflection of what has already been learned, and its purpose is the satisfaction of the child (Smith, 2009). Unlike Piaget, Russian psychologist Lev Vygotsky (1978, according to Rubin, Bukowski and Parker, 2006) argues that pleasure as a feature of the play is flawed. According to him, through play children not only practice what they already know, but also learn new things, therefore, play facilitates the cognitive development of the child. It is also worth mentioning the theory of the American psychologist Jerome Bruner (1972) according to which play is a means of gaining information and experience with the environment. Play allows children to experiment with combinations of behaviors that would not otherwise be explored (Brown & Patte, 2013).

In contemporary literature, authors approach this topic differently. Thus Lindon (2001) describes play as any activity that a child chooses alone, resulting in enjoyment and satisfaction, and Miller and Almon (2009) say that play includes "activities that are freely chosen and directed by children and arise

from intrinsic motivation" (p. 15). Sturrock (2011, according to Else, 2014) points out that play does not have many definitions / functions: it has only one. It is a singularity. The sole purpose of play is to induce playing.

The authors offer different divisions of the play. Parten (1932) divides play according to the social level (unoccupied play, solitary play, onlooker play, parallel play, associative play, cooperative play), and Smilansky (1968) divides them according to the cognitive level (functional, constructive, dramatic play, games with rules). In addition, play can be shared with respect to the developmental functions they have (physical play, object play, symbolic play, pretend play, and rule play) (Whitebread et al., 2012). Based on Piaget's theory, Seefeldt and Barbour (1986, p. 256) singled out three categories of play:

- *Practice play* which is seen during a child's sensorimotor stage of development. At this stage, the child performs and practises newly acquired motor skills with pleasure.
- *Symbolic play*, which develops into dramatic play – whereby the child uses objects in his/her play to represent reality.
- *Games with rules* – where play becomes more adequately adapted to the real environment and is subjected to rules and order of the real world. Thus, the child reaches a stage where he/she is better able to accommodate and align his/her thinking to the real world.

Over the last few decades, researchers in the fields of education and child psychology have come up with new important insights into the importance of play in children's lives (Belsky, 1984; Egan, 1988; Howes & Matheson, 1992; Sigel, 2000). Research has shown that play is important not only for a child's enjoyment of play and for fun, but also for a child's development in basic skills and complex cognitive activities, and contributes even to proper brain development (Shonkoff & Phillips, 2000). So, the play is an important goal, but it is also important for other goals.

As numerous studies have shown the great impact of play on a child's development, play has increasingly begun to be conducted in elementary school classes as well. New research soon followed to find out the effectiveness of such teaching. It has been shown that learning through play achieves better results compared to classical learning, that the knowledge acquired through play is more lasting and that play creates a better atmosphere among children. In order for the use of play in teaching to be purposeful, play should be adapted to the age and abilities of pupils, and teachers must know the purpose of a particular play in teaching (Bodrova & Leong, 2007; Bognar, 1986; Boocock, 1971; Ginsburg, 2007; Marjanovic Umek & Zupančić, 2001; Nikčević-Milković et al., 2011; Sawyer, 2001; Smith & Simon, 1984).

Musical Play

If we look at children's play, we can see that it abounds in musical elements because children sing learned songs, but through play they also invent their own melodies. Children naturally respond to music, text, rhythms, and positive social interactions during musical play (Neelly, 2001).

In literature, musical play is most often described as an activity that children start on their own, and as an activity in which they can voluntarily get involved and participate together with other children. As with other forms of play, musical play is enjoyable for children and they are intrinsically motivated to participate in them (Isenberg & Jalongo, 2000; Marsh & Young, 2006; Rogers & Sawyers, 1988).

Many authors point out that musical play, like all other play, develops intellect, contributes to the development of a versatile personality, and enriches a child's mental health (Domonji, 1986; Kouvava et al., 2011; Manasteriotti, 1986, 1988; Wigram, 2002). Domonji (1986) states that through musical play we develop children's ability to experience, the ability to feel beautiful in music, and the ability to express music through movements. The value of musical play is also in the fact that it develops the ability of pupils to express music through movements,

primarily its character or one of its means of expression. For children to coordinate movements and music, they must actively listen to music and feel its pulsation. This also develops their ability to receive or experience music. According to Rakijaš (1961), when connecting music and movement, the child should be given full freedom of movement, because in this way his individuality and creative ability will be expressed. The sense of connecting music and movement, understanding it as a whole of aesthetic expression and introducing individual creative abilities, can be stimulated in various ways: by imitating the rhythm of people at work, animals on the move, various improvisations and fantasies in presenting some musical content.

Children's play is also an inexhaustible source of creative instinct and joy of life, where every day we encounter children's sense of rhythm and the richness of their imagination. We can develop children's tendency to express themselves through music in teaching through a series of activities, which means developing the musical-creative predispositions that children bring with them. By using certain musical play, we can contribute to the liberation and development of children's musical creativity, and we should keep in mind the fact that children enjoy participating in musical play very gladly (Požgaj, 1988).

Kouvava et al. (2011) particularly emphasize the importance of musical play for the child's self-concept and development of social skills with the help of teachers who could be the facilitators and mediate peer interactions in the classroom through various activities:

> Music is an aesthetic expression, joyful, nonjudgmental, and noncompetitive. Everyone can join in a musical play at his/her own level of comfort. Musical activities can include all children, allow them to express themselves, their feelings and thoughts, and engage them as collaborators in joyful experiences, such as singing or vocalizing, playing various melodic instruments and listening to music. (Kouvava et al., 2011, p. 1661)

In music teaching it is possible to perform different types of musical play. Manasteriotti (1988) proposes conducting play with singing, play with instrumental accompaniment, musical dramatizations, and creative play. Play with singing is further divided into play with singing in a circle, play in a column, play of free forms, and play of mixed forms. Domonji (1986) still talks about play in which children move to music performed on instruments by their teacher. It can also be music played on a CD player or computer. It is important that children, before adopting and performing the movement, get to know the music well, "its rhythmic-melodic flow, as well as the tempo, dynamics, and even form. Only after they have mastered the music (as well as during singing) are movements added" (Domonji, 1986, p. 43). Children need to perform musical play with a variety of music. Thus, in addition to play, they get to know various compositions, learn to notice and recognize their character and the basic means of expression of music so that children can then express them with their movements. Thus, through musical play, we also develop children's ability to notice, experience and appreciate the beautiful in music, and thus lay the foundations for their elementary musical taste (Manasteriotti, 1986).

In Croatian elementary schools, within the teaching of music led by a class teacher (grades 1-3), various musical activities are carried out within four teaching areas: singing, playing an instrument, listening to music and elements of musical creativity. According to the *Elementary School Curriculum* (2006), it is envisaged that pupils develop their musical abilities (intonation, rhythm and musical memory) through all four areas. In singing, pupils will develop a sense of accurate intonation and rhythm and musical memory, by playing an instrument a sense of rhythm and meter, in listening to music the ability to concentrate, the ability to recognize sounds and colors of different voices and instruments, and in the area elements of musical creativity individual musical abilities (intonation, rhythm) and a sensibility for music. Musical play is not intended to be an independent teaching area in any of the first three grades, and it is mentioned as a recommended activity only in

the first grade program when talking in more detail about activities within the teaching areas of singing and elements of musical creativity. The results of research conducted in elementary schools in Osijek-Baranja County (Svalina, 2015) showed that musical play is performed in music lessons most often "with songs offered in textbooks, which provide for the movement of children or dramatization. In general, these are just a few types of musical play that appear in the classes of most teachers" (Svalina, 2015, p. 235).

Methods

Aim of the research

In this paper, we present an overview of research conducted to determine how musical play affects the development of musical abilities of first grade elementary school pupils. Through research, we sought to determine whether there would be improvements in the reproduction of rhythmic and melodic phrases and individual tones after pupils participated often in musical play in music teaching. Based on the stated goal, the following hypothesis was set: *Music teaching in which greater emphasis is placed on musical play contributes to the development of musical abilities of first grade elementary school pupils.*

We set up three additional hypotheses:

H1 – There is a statistically significant difference in the solution of the tasks of reproducing rhythmic phrases in the initial and final testing after the frequent involvement of first grade pupils in musical play.

H2 – There is a statistically significant difference in the solution of the tasks of reproducing individual tones in the initial and final testing after the frequent involvement of first grade pupils in musical play.

H3 – There is a statistically significant difference in the solution of the tasks of reproducing melodic phrases in the initial and final testing after the frequent involvement of first grade pupils in musical play.

Research participants

The research was conducted at the "Vladimir Nazor" Elementary School in Đakovo (Croatia). The participants in the research were first grade pupils (children aged 7 years). It is a class in which musical play has not been held as part of music lessons before. A total of 16 pupils participated in the study, of which eight were girls and eight were boys. Some of the pupils attended extracurricular music activities. Six pupils sang in the school choir, two attended piano lessons, and one pupil was included in a folklore group. Ethical issues and the voluntary consent of pupils to participate were considered during the research. The survey was anonymous, and pupils participated with the prior consent of parents, teachers, and school principals.

Methodological approach

The research consisted of three parts: the initial testing of pupils' musical abilities, holding ten hours of music lessons in which the emphasis was placed on conducting musical play, and the final testing of pupils' musical abilities. The data collection instrument used in the initial and final testing of musical abilities was the test. During the research, a research diary was kept in which all hours of music teaching and reflections were recorded. Quantitative analysis was used for data processing and analysis. During the processing and analysis of data, computer programs Microsoft Office Excel and Statistics 13 were used. The data are presented in tables and graphs.

Results and Discussion

Initial testing of pupils' musical abilities

The initial testing of pupils' musical abilities was conducted individually according to a test consisting of 11 tasks. The tasks were divided into three groups from easier to harder: tasks of reproducing rhythmic phrases, tasks of reproducing individual tones, and tasks of reproducing melodic phrases. The tasks examined

the pupil's sense of rhythm, intonation, and melodic comprehension and reproduction. The total number of points that the pupil could achieve during the test was 28.

We set the tasks of reproducing rhythmic phrases by clapping two-bar rhythmic phrases which the pupils then had to repeat in the same way. In the task of reproducing individual tones, we assigned individual tones to the pupils first by playing the instrument and then by singing. The pupils had to repeat these same tones by singing the neutral syllable "NA". The tasks of reproducing two-bar melodic phrases were given in the same way. In each task, the pupil is given two opportunities to accurately reproduce a particular task. If the pupil reproduced the given rhythmic or melodic phrase incorrectly or partially correctly, that is, the individual tone in the first attempt, then we demonstrated the task again without emphasizing that the pupil did not reproduce the given phrase accurately. Testing was conducted on the principle of musical play "echo". We took care that the examination of musical abilities takes place in the form of play and in a cheerful mood so that children do not have a feeling of "examination" (Požgaj, 1988).

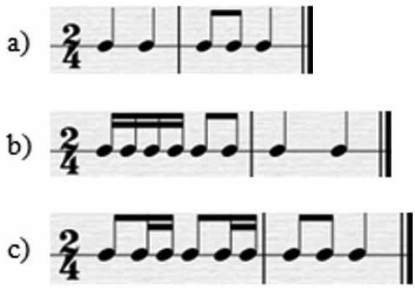

Figure 1. Tasks of reproducing rhythmic phrases.

The pupil's sense of rhythm was tested through three tasks in which pupils were expected to accurately reproduce two-bar rhythmic phrases (Figure 1). Each correctly reproduced phrase from the first attempt was scored with 2 points. The correctly reproduced phrase from the second attempt was scored with 1 point, while the pupil was not awarded points for the incorrectly reproduced phrase. The total number of points that a pupil could get for reproducing rhythmic phrases is 6. All 6 points were given to two pupils, 5 points were given to three pupils, 4 points were given to nine pupils, 3 points were given to 1 pupil, as well as 2 points. The average value of the results (N = 16) in the reproduction of rhythmic phrases was 4.25 (σ = 1.00) (Table 1).

The pupil's sense of intonation was tested through five tasks of reproducing individual tones. The default tones are c1, g1, e1, b-flat1 and f1. Each correctly reproduced tone from the first attempt was scored with 2 points. The correctly reproduced tone from the second attempt was scored with 1 point, while the incorrectly reproduced tone in both attempts was not scored. The total number of points that a pupil could get in the tasks of reproducing individual tones was 10. The maximum number of points was given to 2 pupils, 9 points were given to one pupil, and 6 points were given to 4 pupils. A total of 5 points were awarded to 3 pupils as well as 4 points, 2 pupils received 3 points, while one pupil received 0 points in the tasks of reproducing individual tones. The average value of the results (N = 16) in the reproduction of individual tones was 5.38 (σ = 2.63) (Table 2).

Table 1. Solution of rhythmic phrase reproduction tasks in initial testing.

	Total		First phrase		Second phrase		Third phrase	
	M	σ	M	σ	M	σ	M	σ
Reproduction of rhythmic phrases	4.25	1.00	2.00	0.00	1.25	0.58	1	0.63

Table 2. Solution of individual tone reproduction tasks in initial testing

	Total		First task		Second task		Third task		Fourth task		Fifth task	
	M	σ	M	σ	M	σ	M	σ	M	σ	M	σ
Reproduction of individual tones	5.38	2.63	1.06	1.06	1.19	1.19	1.19	1.19	0.81	0.81	1.13	1.13

The pupil's melodic comprehension and reproduction ability was examined through three tasks of reproducing melodic phrases (Figure 2). Each correctly reproduced melodic phrase from the first attempt was scored with 4 points. The correctly reproduced melodic phrase from the second attempt was scored with 3 points. If the melodic phrase is reproduced correctly, but intonationally different from the default, it is scored with 2 points. In the case where only one bar of a given phrase is correct in both attempts, it is scored with 1 point, and no points are awarded for an incorrectly reproduced melodic phrase. The total number of points that a pupil could get for the tasks of reproducing melodic phrases was 12. In this group of tasks, no pupil scored the maximum number of points. A total of 11 points were awarded to 2 pupils, 10 points were awarded to one pupil, 9 points were also awarded to one pupil, as well as 8 points. A total of 7 points were awarded to 3 pupils, 6 points were awarded to one pupil, and 5 points were awarded to two pupils. One pupil received 4 points, three pupils received 3 points, while one pupil received 2 points. The average value of the results of all 16 pupils in the reproduction of melodic phrases was 6.31 (σ = 2.94) (Table 3).

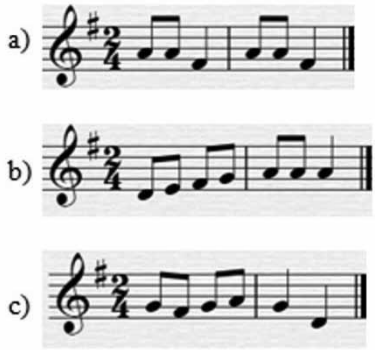

Figure 2. Tasks of reproducing melodic phrases.

The total number of points that could be achieved in the initial testing was 28. The highest total number of points was 26 (92.86%), while the lowest total number of points was 7 (25%). The average number of points achieved in this test was 15.94 points (56.93%).

According to the results of the initial testing, we can conclude that most pupils have a well-developed sense of rhythm. All pupils accurately reproduced a simple rhythmic phrase, but a few pupils were unable to accurately reproduce more complex rhythmic phrases. The sense of intonation was somewhat less developed in the pupils as well as the ability of melodic comprehension and memorization.

Conducting musical play as part of music teaching

After the initial testing, ten hours of music lessons were conducted in which various musical plays were conducted with the aim of improving the initial state of pupils' musical abilities. The authors

Table 3. Solution of tasks of reproduction of melodic phrases in initial testing.

	Total		First phrase		Second phrase		Third phrase	
	M	σ	M	σ	M	σ	M	σ
Reproduction of melodic phrases	6.31	2.94	2.69	2.69	1.88	1.88	1.75	1.75

Table 4. Solution of rhythmic phrase reproduction tasks in final testing

	Total		First phrase		Second phrase		Third phrase	
	M	σ	M	σ	M	σ	M	σ
Reproduction of rhythmic phrases	5.19	1.11	2.00	0.00	1.75	0.58	1.44	0.63

Table 5. Solution of tasks of reproduction of individual tones in the final testing

	Total		First task		Second task		Third task		Fourth task		Fifth task	
	M	σ	M	σ	M	σ	M	σ	M	σ	M	σ
Reproduction of individual tones	8.25	1.81	1.69	0.48	1.63	0.62	1.75	0.45	1.5	0.63	1.69	0.60

Table 6. Solving the tasks of reproducing melodic phrases in the final testing

	Total		First phrase		Second phrase		Third phrase	
	M	σ	M	σ	M	σ	M	σ
Reproduction of melodic phrases	9.06	2.49	3.38	0.89	2.81	1.11	2.88	1.15

of methodological manuals suggest a number of musical play for use in music teaching (Bognar, 1986; Janković, Mamić & Ambruš Kiš, 2015; Svalina, 2015; Šulentić Begić, 2016). For the purposes of this research, we selected plays that we estimated could contribute to the development of musical abilities in pupils. We divided the play into two groups. The first group consisted of musical play with rhythms that are normally conducted in the classroom with the aim of developing the pupil›s sense of rhythm. These are *Echo Play*, *Play with Rhymes*, *Remember Rhythm*, *Rhythmic Play with Words*, *Rhythm Circles* and *Telegraph*. The second group included games aimed at improving students' recognition of pitch, sense of intonation, musical memory, and melodic comprehension and reproduction. Such are the following play: *Bumblebee Pavo*, *Baker*, *Tone Pitch*, *Who Sings*, *Circling Song*, *Music Raffle*, *Hidden Object*, *Button* and *Melody Circles*.

Final testing of pupils' musical abilities

The test by which the final testing of pupils' musical abilities was conducted was the same as the test used in the initial testing for easier and more accurate comparison of results. Both the scoring method and the total number of points the pupil could score during the final testing were the same as during the initial testing of the pupil's musical abilities.

Out of a total of 6 points that could be achieved in the tasks of reproducing rhythmic phrases, in the final test of musical abilities 8 pupils achieved all 6 points, 5 pupils achieved 5 points, 2 pupils achieved 4 points and one pupil achieved 2 points. The average value of the results (N = 16) in the reproduction of rhythmic phrases was 5.19 (σ = 1.11) (Table 4).

Out of a total of 10 points that could be achieved in the tasks of reproducing individual tones, 6 pupils achieved the maximum number of points. Two pupils scored 9 and 8 points each, four pupils scored 7 points, and one pupil scored 6 and 4 points. The average value of the results (N = 16) in the reproduction of individual tones was 8.25 (σ = 1.81) (Table 5).

The total number of points that could be achieved in the tasks of reproducing melodic phrases was 12. All 12 points were achieved by 4 pupils, 11 points were achieved by one pupil, 10 points were achieved by 2 pupils, while 9 points were achieved by 4 pupils. A total of 7 points in the tasks of reproducing melodic phrases were scored by 2 pupils, 6 points were also scored by 2 pupils and one pupil scored 4 points. The average value of

the results (N = 16) in the reproduction of melodic phrases was 9.06 (σ = 2.49) (Table 6).

The total number of points that could be achieved in the final test of musical abilities was 28. The highest number of points in the final test was 28 points (100%), while the lowest number of points was 13 points (46.43%). The average number of points achieved in the final testing was 22.5 points (80.36%).

Comparison of the results of the initial and final testing of pupils' musical abilities

When we compare the total number of points that pupils achieved in the tasks of reproducing rhythmic phrases during the initial and final testing, we can see that there has been some progress (Figure 3). Namely, the total number of points that pupils could achieve together in the tasks of reproducing rhythmic phrases was 102. When we add up all the individual results of pupils achieved in the tasks of reproducing rhythmic phrases during the initial testing, it is 68 points, that is, the pupils achieved 66.67% of the total number of points that could be achieved in the tasks. In the same tasks during the final testing, pupils achieved a total of 83 points, or 81.37%. The difference between the results in the tasks of reproducing rhythmic phrases during the final and initial testing is 15 points, that is, 14.7%. By Mann-Whitney U-test, we found that the difference in the results of the initial and final testing in the reproduction of rhythmic phrases was statistically significant (Z = -2.681, p = 0.010) at the level of 0.01. From this it can be seen that the pupils' sense of rhythm improved and the first hypothesis (H1) was confirmed.

By comparing the total number of points achieved in the tasks of reproducing individual tones during the initial and final testing, we can also see how there was a shift in the results (Figure 3). The total possible number of points in these tasks was 170. After summing up the individual results of all pupils obtained in the initial testing, we come to the result of 86 points, that is, pupils achieved 50.59% of the total number of points they could achieve in the tasks of this type. In the final testing, pupils achieved a total of 134 points, or 78.82% of the total number of points that could be achieved. The difference between the points achieved in the final and initial testing in the tasks of reproducing individual tones is 48 points, or 28.24%. Mann-Whitney U-test found that the difference in the results of the initial and final testing in the reproduction of rhythmic phrases is statistically significant (Z = -3.148, p = 0.001) at the level of 0.01. Thus, we can say that the sense of intonation improved after the research was conducted, and the second hypothesis (H2) was also confirmed.

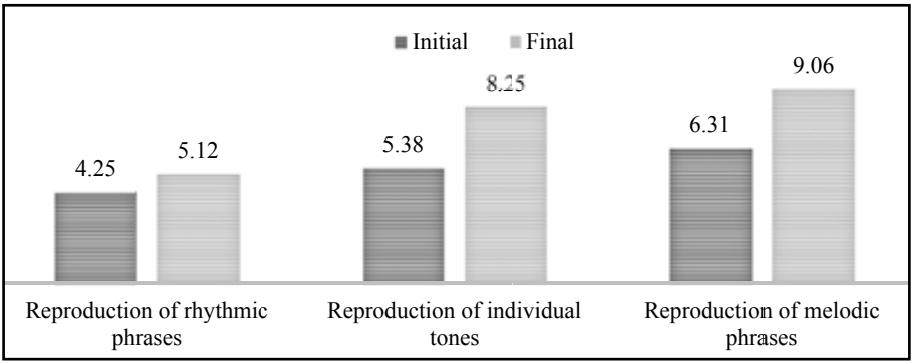

Figure 3. Results achieved in tasks in the initial and final testing of pupils' musical abilities.

When it comes to the tasks of reproducing melodic phrases, a comparison of the total number of points achieved in the initial and final testing of pupils' musical abilities showed that in this case, too, there was an improvement in the results (Figure 3). The total number of points that pupils could achieve together in the tasks of reproducing melodic phrases was 204. During the initial testing of musical abilities, pupils achieved a total of 101 points, or 49.51% of the total number of points that could be achieved in the tasks of reproducing melodic phrases. During the final testing, pupils achieved 145 points, or 71.08%. The difference in points achieved during the final and initial testing of pupils' musical abilities is 44 points or 21.57%. By Mann-Whitney U-test, we found that the difference in the results of the initial and final testing in the reproduction of rhythmic phrases was statistically significant ($Z = -2.522$, $p = 0.011$) at the level of 0.05. Thus, there has been a certain positive shift in the development of the ability of melodic comprehension and reproduction. Based on the obtained statistical indicators, and the third hypothesis (H3) was also confirmed.

By analysing the data obtained from the research, we can see that the examined musical abilities of pupils (sense of rhythm, intonation, and melodic comprehension and reproduction) significantly improved during the music lessons in which musical play was conducted. On the one hand, the results may support the claim that musical play affects musical abilities and their development. However, other possible factors that may have led to the development of musical abilities should also be considered. Development itself is possible because children's abilities, in general, develop according to their age. The development could have been due to a different way of teaching music culture than the one the pupils were taught.

Conclusion

The very notion of musical ability has not yet been fully defined or explored. There are numerous theories that explain this concept and the factors important for their development. Given the current knowledge related to these issues, we will agree with those theories in which it is explained that these are a number of abilities for the development of which, in addition to heritage, the environment is important (parents, family, educators, teachers), or with theories emphasizing the importance of music education in the early years of life (Davidson, Howe & Sloboda, 1997; Howe, 1990; McPhee et al., 2005; Wing, 1971).

The results of the research we presented in this paper showed that more intensive involvement of first grade pupils in musical activities within music teaching can achieve a lot in terms of developing pupils' musical abilities. The tested musical abilities (sense of rhythm, sense of intonation, and melodic comprehension and reproduction) were improved precisely by conducting musical play in music teaching. It is interesting that significant progress has been made after several months of more intensive work. Previously conducted studies (Howe et al., 1995; Sośniak, 1985, 1990) have shown that successful musicians in early childhood did not differ significantly in their musical abilities than other children that age and very few of them showed signs of future excellence. "It was more often the case that they made extremely fast progress after a combination of good opportunities and strong encouragement from their parents and teachers" (Hargreaves, & Lamont, 2017). As children still develop musical abilities at a younger school age, some of them faster, some slower, it is not good to focus only on those pupils who are considered to be musically gifted or to leave the musical development of pupils to extracurricular musical activities or musical schools. Many children have the opportunity to develop their musical abilities well in elementary school if teachers often involve them in appropriate musical activities and provide them with an appropriate way of teaching music.

So, the earlier the children are involved in musical activities, the greater the chance that their musical abilities develop and the greater the chances that the children develop a greater interest in music. In this sense, the schools and teachers play a very important role.

Earlier research has shown that musical play develops the intellect, enriches mental health and contributes to the development of a versatile personality (Kouvava et al., 2011; Wigram, 2002). Given the results obtained in this research, we would add that they also contribute to the successful development of musical abilities. Play is an integral part of every child's life. Their instinct for play can be used in any subject, even in music lessons. Since the development of musical abilities is one of the important tasks of music teaching, these activities should have a more significant place in music teaching at the elementary level of education. By introducing musical play in the classroom, we make the classroom much more interesting, create a pleasant atmosphere in the classroom, increase pupil attention and motivation, but also encourage the pupil's own activity. The movements of children performed with musical play are rhythmic and harmonious if they derive from the music and if they are in harmony with the music. Manasteriotti (1986) states that this is precisely the reason why we influence the development of children's musical abilities through musical play, primarily the development of hearing and sense of rhythm. This was also shown by the results of our research.

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