

# Research of aesthetic development of preschool and primary school children

## Investigación del desarrollo artístico de los niños en edad preescolar y primaria

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#### ABSTRACT:

The focal point of the article is the results of the diagnostic assessment of musical and aesthetic development of children of 4-10 years of age. We conducted the assessment with the kindergarten and elementary school students. A key aspect of the paper is the concept of aesthetic development and the general experimental model of aesthetic abilities, which we designed. The paper presents the structure of children musical development assessment, which includes test tasks of 3 types: 1. measuring the development of musical skills as the ability to musical-auditory representations and the ability to repeat the rhythmic pattern; 2. the ability to simple intermodal visual-auditory synesthesia; 3. the development of aesthetic perception of expressiveness of musical form and artistic taste, which we describe as a sense of style. The analysis of the obtained data was central to our proposition of the following findings. One important finding is that the process of children's overall development naturally includes the development of the musical and aesthetic abilities. Another important finding is that the types of musical-aesthetic perception of children of 4-10 years of age may be of two types:

#### RESUMEN:

El punto focal del artículo es los resultados de la evaluación diagnóstica del desarrollo musical y artístico de los niños de 4-10 años de edad. Realizamos la evaluación con los estudiantes de Kindergarten y escuela primaria. Un aspecto clave del papel es el concepto de desarrollo estético y el modelo general experimental de habilidades estéticas, que diseñamos. El trabajo presenta la estructura de evaluación del desarrollo musical infantil, que incluye tareas de prueba de 3 tipos: 1. medir el desarrollo de habilidades musicales como la capacidad de representaciones auditivas y la capacidad de repetir el patrón rítmico; 2. la capacidad a la sinestesia visual-auditiva simple intermodal; 3. el desarrollo de la percepción estética de la expresividad de la forma musical y del gusto artístico, que describimos como un sentido del estilo. El análisis de los datos obtenidos fue fundamental para nuestra propuesta de los siguientes hallazgos. Un hallazgo importante es que el proceso de desarrollo general de los niños incluye naturalmente el desarrollo de las habilidades musicales y estéticas. Otro hallazgo importante es que los tipos de percepción musical y estética de los niños de 4-10 años de edad pueden ser

the 1st type is the development determined by children's interrelation of physical and cultural development. The 2nd type is the development, in which the system of instructors' impacts plays a significant role. Future research should, therefore, concentrate on the investigation of the aesthetic development dynamics of the children of younger age group. Cooperative research of teachers and physiologists with a view to combine the indicators of children's physical and aesthetic development would help us to establish more accuracy of the teaching of art.

**Keywords:** Aesthetic development, aesthetic abilities, musical abilities, musical-auditory representations, rhythmic pattern, the sense of style.

de dos tipos: el primer tipo es el desarrollo determinado por la interrelación de los niños en el desarrollo físico y cultural. El segundo tipo es el desarrollo, en el que el sistema de impactos de los instructores juega un papel importante. La investigación futura debe, por lo tanto, concentrarse en la investigación de la dinámica del desarrollo estético de los niños del grupo de la edad más joven. La investigación cooperativa de profesores y fisiólogos con el fin de combinar los indicadores del desarrollo físico y estético de los niños nos ayudaría a establecer una mayor precisión en la enseñanza del arte.

**Palabras clave:** desarrollo estético, habilidades estéticas, habilidades musicales, representaciones auditivas, patrón rítmico, sentido del estilo.

## 1. Introduction

A primary concern of the paper is the study of the instruction methods of children's aesthetic development. These methods include a special concept and an experimental model of children's aesthetic development in different age groups. The initial provisions of the concept and methodology were the contributions of experimental aesthetics, introduced by foreign psychological aesthetics in the middle of the previous century. A direct example of testing the aesthetic development of children were cross-cultural studies, introduced by I. L. Child, and the study of the aesthetic preferences of American, Japanese, and Russian children repeated according to this method (Child, 1981; Child I.L. and S. Iwao, 1977; Torshilova, 1993).

There is much evidence that the tradition of understanding aesthetic as a form became the philosophical basis for the notion of aesthetic specificity (Plato, 1990, I. Kant, 1966). The model for the assessment of aesthetic development levels assumes that the overall aesthetic development is determined by the abilities of aesthetic perception and taste, and by measuring such ability as a sense of form. C. Seashore (1938) and H. Wing (1968) introduced the initial experiments to develop diagnostic techniques and approbation of their results in the field of musical perception. In recent years, there has been an increasing amount of literature on the development of the sense of style. One can mention the multifaceted and flawlessly logically constructed study by E.N. Piriازهva (Piriازهva, 2007) and the work of one of the authors of the article E. Boyakova (Boyakova, 2012). Over the past two decades, major advances in the semantic analysis of images by young children were described in the study by E. Boyakova, O. Stukalova, I. Lykova, O. Gaysina (Boyakova *et al.*, 2017).

## 2. Methods and materials

To evaluate the effectiveness of instruction and conduct the study, we developed "the methodology for the assessment of the development level of the musical and aesthetic abilities of children aged 4-10". The methodology included test tasks of three types: measuring the development of musical abilities, the ability for intermodal visual-auditory synesthesia, and the ability to perceive the expressiveness of the musical form combined with the development of musical taste.

To allow a deeper insight into the problem, the 1st type of test tasks included 3 diagnostic tasks. The 1st of these was the definition of the ability to musical-auditory representations, based on the task "Finish the Song".

The research of musical-auditory representations has a long history. B.M. Teplov described the ability to musical-auditory representations in the book "The psychology of musical abilities" (Teplov, 2003). There is much evidence that this ability is the reproductive component of a tuneful ear, underlying the inner ear, musical memory, and musical imagination. The content and the stimulus material of the 1st test task "Finish the Song" included the following assignment. We asked the children to listen to eight bars of the song "Little Christmas Tree" by

M. Krasiew and determine whether the song ended or not. The song was performed without words, the experimenter stopped at the 3rd step of the 7th bar. If the child answered that the song was not finished, he was asked to finish it. For the correct answer, we granted 2 points. We counted as a successfully performed task the utterance of two missing sounds with a falling intonation. Wrong answer got 0 points. If the child was singing the song in the right key, then we added 2 "prize" points.

We did not assess the purity of the singing intonation. It is known that the lack of coordination of hearing and voice in preschool childhood does not mean absence of musical ear. We used this approach to obtain in-depth information on children's ear for music.

Then we proceeded to the 2nd test task in the structure of assessment of musical abilities. We used a special approach to gain a detailed information about the musical-rhythmic feeling with the help of the task "Repeat the Rhythmic Pattern". We would define the musical-rhythmic feeling as the ability of the motoric experience of music. Along with a good sense of feeling, it forms the basis of emotional responsiveness to music. Rhythm is the most important means of musical expressiveness. The specific purpose of the test task was to determine the level of discrimination and reproduction of rhythmical arrangements. We asked the children to repeat the rhythmic pattern with the size of 2/4, which the experimenter patted with his hands.

For preschoolers, we proposed two rhythmic sequences of the following sizes: 1) a quarter – 2 eighths – a quarter – 2 eighths; 2) a quarter – 2 eighths – 2 quarters. For the students (7+) we introduced more difficult rhythmic complexes: 1) a quarter – two eighths – quarter – two eighths – 4 eighths – a quarter; 2) a quarter to an eighth with a point / 1 sixteenth – two quarters – four eighths – two quarters. We presented rhythmic patterns twice at a moderate pace. If the child was at a loss, we repeated the task for the 3rd time. Then we counted the mistakes. We gave 2 points for successful execution, 1 point for partially executed piece, 0 point for non-fulfillment.

We based the 3rd task, as well as the previous one, on the motoric component of the rhythmic feeling. The purpose of the test was to identify the possibility of hearing and transmitting in the movement theagogical deviations from the basic tempo (acceleration-deceleration). The researcher informed the child that when the music started, he would have to march on the spot. We didn't inform the child about the changes in the pace of music.

We granted 2 points for the rhythmic marching with an accurate reflection of tempo deviations. If the child heard and accurately transmitted in motion only acceleration or only deceleration, we would grant him only 1 point. 0 point for not rhythmic walking.

In younger age group, the 2nd type of the aesthetic musical development assessment was the definition of the ability to intermodal perception, which we developed with the help of the test of elementary synesthesia (see Torshilova, E. and T. Morozova, 2001).

The experimenter offered the child to watch two pictures depicting "fairy" beings of rounded and angular abstract forms. The child had to pick up for each creature "its own" music from two different musical pieces that were offered in different ways: Dmitry Kabalevsky "Waltz" opus 39, no. 13 and opus 89, no. 9 "Hedgehog". In this way, the child established an inter-sense correspondence between the graphic and the musical image. We granted 2 points for the successful completion of the task. 0 point for a failure.

The 3rd type of test tasks had the purpose to evaluate children's emotional-aesthetic perception of music and the development of their artistic taste. The 1st task in this type of diagnosis was "Major-Minor".

The task was to identify emotional and aesthetic preferences. We offered for listening two different types of fragments: one joyful, motoric, written in major key (value – 0 point), the other – sad, slow, written in minor key (value – 2 points). We invited the children to listen to both passages and name the music that they liked best. The central idea of the assignment was the theoretical assumption that the preference of sad, minor music by the child (person) indicated higher aesthetic sensitivity.

We tested the development of the ability to perceive the aesthetic expressiveness of the musical form with the help of two other test tasks, which general diagnostics' experts regard as the sense of style. These tests were "Beethoven" and "Chopin".

B. Asafev in the book "Musical Form as a Process" wrote that each historical epoch gave birth to its own intonations, which were different from the previous ones. A group of experts created the "music-intonational dictionary" of the era. New people, new historical events inspired new intonations and / or reinterpreted the usual ones (Asafev, 1971).

In the tests "Beethoven" and "Chopin" the children were offered to listen to 3 plays or fragments, two of which belonged to one musical period, and one - to the other period. The correct answer in the "Beethoven" test was estimated at 2 points, in the "Chopin" test - 4 points, the wrong answer - 0 points. In the "Chopin" test, the selected works were more similar in general mood.

The test "Beethoven" included the following pieces: J. Haydn "Menuet", S. Prokofiev "Rain and Rainbow", L. Beethoven "German Dance". The test "Chopin" included the following pieces: F. Chopin "Nocturne" in C Major (C-Dur), L. Boccherini "Minuet" from Quintet in E Major (E-Dur), F. Chopin "Waltz" in B Minor (h-moll). An experimental pianist performed the pieces.

### 3. Results

The study involved 278 children aged from 4 to 10, attending a state kindergarten and primary school. We conducted the test individually with each child. In three types of tasks we used the recommended methodology for studying the musical and aesthetic development of children aged 4-10.

The results of the test "Finish the Song" describe the level of the ability to musical-auditory representations. The results show that with the passage of time the indicators improve. More than half of the children could distinguish the gravity toward the tonic in tonality. Small children had poor coordination of voice and hearing, which is a feature of the functional development of the vocal apparatus. Older children more often performed the task with a confident "clean" intonation (Table 1).

**Table 1**

The results of testing the musical abilities of children aged 4-10 with the tests "Finish the Song", "Repeat the Rhythmic Pattern", "Acceleration-Deceleration".

	Age						
	4—4.11	5—5.11	6—6.11	7—7.11	8—8.11	9—9.11	10-10.11
The number of children	21	30	49	55	47	51	25
The average score in the group for the test "Finish the Song" (the maximum score - 4).	1,2	2,2	2,3	2,7	2,9	3,2	2,9
The average score in the group for the test "Repeat the Rhythmic Pattern —	0,5	0,7	1,1	1,3	1,7	1,8	1,8

1" (the maximum score – 2).							
The average score in the group for the test "Repeat the Rhythmic Pattern – 2" (the maximum score – 2).	0,5	1,2	1,4	1,3	0,8	1,6	1,4
The average score in the group for the test "Acceleration-Deceleration" (the maximum score – 2).	1,3	1,6	1,7	1,9	1,9	2,0	2,0

Testing the development of musical-rhythmic feeling "Repeat the Rhythmic Pattern" showed that at the age of 4 only 25% of children could reproduce even simple rhythmic patterns. By the age of 7, the figure had reached the level of 50%. At school age, the positive dynamics were clearly visible in the task of reproducing a rhythmic pattern with uniformly alternating fourth and eighth durations. The rhythmic pattern, which included the dotted rhythm, caused difficulties even for 10-year schoolchildren. It can be assumed that the sense of the rhythm develops successfully with specially organized training (Table 1).

The test "Acceleration-deceleration" did not cause any difficulties. Almost all participants in the study heard the metric pulsation. The slow down of the tempo was evident to all the participants. With the acceleration of the pace, the marching children lost the rhythm. This feature was especially widely spread among kindergarten children (4-6.12). We explain the fact from two points of view: because of the underdevelopment of the sense of rhythm, and the unformed motor skills. Among young children, there was slight disruption in the coordination of movements while accelerating the pace of walking. Full automation and coordination of walking skills among schoolchildren (7-10.11) allowed to achieve 100% score for the test (Table 1).

The 2nd type of the test tasks was the ability for intermodal perception, which we tested in younger age groups by the way of comparing the sound aesthetic image with the visual image, given in the form of two abstract figures.

The execution of this test task was not difficult. The analysis of the results clearly showed the age dynamics. At the age of 4 – 50% of the children successfully completed the assignment. At the age of 10 the indicator reached the mark of 100%. There were no significant differences between boys and girls (Table 2).

**Table 2**  
Results of testing the abilities for intermodal perception among the children aged 4-10.

	Age						
	4–4.11	5–5.11	6–6.11	7–7.11	8–8.11	9–9.11	10-10.11
The number of children	21	30	49	55	47	51	25

The average score in the group (the maximum score – 2)	1,0	1,2	1,2	1,4	1,4	1,6	1,8
Boys (average score)	0,9	1,1	1,0	1,2	1,6	1,6	2,0
Girls (average score)	1,0	1,3	1,4	1,6	1,5	1,6	1,7

The 3rd type of test tasks related to the children's taste attitudes to music and included 3 tests with conditional names: "Major-Minor" (the test described musical preferences of children); "Beethoven" and "Chopin" (the tests revealed the development of the sense of style).

The results of the test "Major-Minor", determining emotional and aesthetic preferences, showed that less than half of children chose sad music. We observed no significant regularities of choice among boys and girls.

There is much evidence that the emotion of "joy" comes in ontogenesis before the emotion of "sadness", and the perception of minor key combinations requires large expenditure of energy from the human body. In everyday life, children listen more often to musical works of "mass culture" of a cheerful dance character. This type of sound environment consolidates the reactions of children, makes them familiar and desirable. This study has set out that only in the process of specially organized training, bringing the enrichment of musical environment, the child could develop the ability to respond emotionally to music of a different nature (Table 3).

**Table 3**  
The results of the test task "Major-Minor"

	Age						
	4–4.11	5–5.11	6–6.11	7–7.11	8–8.11	9–9.11	10-10.11
The number of children	20	29	49	55	47	51	25
The average score of the group (the maximum score – 2)	0,7	0,6	0,4	0,6	0,9	1,3	1,3
Boys (the average score)	0,3	0,5	0,5	0,4	0,8	1,2	2,0
Girls (the average score)	1,0	0,8	0,4	0,8	1,0	1,4	1,0

We also referred to the 3rd type of test tasks the assignments for revealing the sense of style. The test "Beethoven" was not difficult for children of all ages. Only the children of 4 years of age found it difficult to choose the right answer. The results of testing children of 5 and 10 years of age did not have any significant differences (Table 4). The ability of children to distinguish the "transparent" texture of the works of the Viennese classics from the dissonant

harmonies of the composers of the 20th century with the coinciding nature of the music (light, calm) was evident.

**Table 4**  
The results of the test task "Beethoven"

	Age						
	4—4.11	5—5.11	6—6.11	7—7.11	8—8.11	9—9.11	10-10.11
The number of children	20	29	49	55	47	51	25
The average score of the group (the maximum score – 2)	0,7	0,6	1,7	1,8	1,8	1,9	1,8
Boys (the average score)	1,0	1,7	1,5	1,7	1,8	1,9	1,4
Girls (the average score)	0,5	1,5	1,8	1,9	1,8	1,9	2,0

Surprisingly, the test "Chopin" was less effective. Children often combined works of classical and romantic periods. Only 25% of children of 4 years of age gave the correct answer. By the age of 10, this figure had reached 75%. But in general, the growth of the sense of style was obvious (Table 5).

**Table 5**  
The results of the test task "Chopin"

	Age						
	4—4.11	5—5.11	6—6.11	7—7.11	8—8.11	9—9.11	10-10.11
The number of children	20	29	49	55	47	51	25
The average score of the group (the maximum score – 2)	1,0	1,4	1,4	2,3	2,5	2,7	3,0
Boys (the average score)	1,0	1,8	1,3	1,8	2,3	2,8	3,0
Girls (the average score)	1,0	1,0	1,4	2,9	2,7	2,8	2,7

## 4. Discussion

The results of the study indicate the mutual influence of the visual, motor, musical abilities of growing children in the context of their perception of different arts. The present study confirmed the fact that the child could develop intermodal perception from the age of 4. Primarily, this ability refers to the recognition of aesthetic property as the sense of form, and secondly, does not confuse small children who have not yet been trained to decipher only the semantic meaning of the image. In the above study, children quickly compared the sound of music with a graphic image. In the experiment conducted by E. Torshilova, T. Morozova, and the test task by B. Galeev, preschool children selected from a pair of figures a suitable name, color, tactile texture, talk and had to repeat the figure's pose. And, as a rule, they succeeded with all these things (B. Galeev, 1987; Torshilova, E. and T. Morozova, 2001). And in the experience with the children of primary school age, 60% of them accurately picked up reproductions of genre painting and still lives for 3 poetic examples. But there is much evidence, that with the passage of time, this ability of a holistic emotional-aesthetic vision disappears, substituting for the search for identical words, subjects, and objects of the image.

The limitation of the current study is that we cannot describe to what extent such negative dynamics depend on age or sociocultural influences. This is a separate problem. But in general, it seems obvious that it is necessary to improve the methods of aesthetic development and art teaching system, which would compensate for the narrowness of the intellectually oriented general education.

Previous studies revealed and confirmed the idea that young children suffered from the inadequate development of the sense of rhythm. The current study supports this idea, which revealed itself in the inadequate transmission of rhythmic movements and perception of the actual and musically organized rhythm. In a similar study of the sense of rhythm in the perception of poetry, conducted with adolescents, it was found that with the passage of age this ability develops, but not 100% effectively (E. Torshilova, E. and I. Polosukhina, 2016; Polosukhina, 2016). Adolescents, as evidenced by individual diagnosis, experience difficulties with the search for a conceptual meaning, when assigning a stanza or a line to a poem. In this case, adolescents prefer to offer the final line "stressing the meaning", rather than rhythm and rhyme.

Several reports have shown that children and adolescents prefer cheerful music, rather than sad. This attitude toward the perception of art obviously depends on the external sociocultural conditions and on the understanding of the functions of art. It stems from the prevailing view that art serves to reach entertainment, rest, relaxation, and peace.

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## 5. Conclusion

The empirical findings in this study provide new understanding of several factors. The most important factors are as follows.

1. The process of children's overall development naturally includes the development of musical and aesthetic abilities of children.
2. The results of children's aesthetic perception studies of different arts testify to the general ability of children to intermodal perception. This process ensures the relative value of the figurative vision of the artistic image in music, painting, and poetry.
3. The types of musical-aesthetic perception of children of 4-10 years of age may be of two types: the 1st type is the development determined by children's interrelation of physical and cultural development. The 2nd type is the development, in which the system of instructors' impacts plays a significant role.
4. Future research should, therefore, concentrate on the investigation of the aesthetic development dynamics of the children of younger age group. There can be an interdisciplinary



diagnosis of the interrelation between children's physical and educational development.

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