

How Music Can Unleash Children's Cognitive, Creative Skills in Preschool and Early School Age — Interdisciplinarity and Music

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Abstract: It is indisputable that the relationship with music in the early years of children's lives plays an important role in their later development, having a positive impact on their cognitive development. According to Neuromusicology, listening to musical melodies activate areas of the brain that are directly related to their cognitive functions. More specifically, children of preschool and early school age by listening to music, singing, playing and making songs are prepared for the processes of learning that they will conquer during reading and writing in later years.

In addition, many more benefits could be added in terms of the beneficial effect of music, such as the development of creative expression, the improvement of memory and the development of their skills. In addition, studies have shown that learning processes in music can serve as a means of knowing how to work, study processes and other courses. The music that is taught at school aims to cultivate the aesthetic ability and release the creative potential of children. However, it is not an object that remains in isolation from the other areas of the curriculum. Many musical concepts can help to better understand concepts of other cognitive fields. Thus, with the interdisciplinary approach to teaching, learning develops through a process of continuous negotiation of all knowledge.

In particular, music, as an art but also as a lesson with a specific structure, has some concepts and elements, such as shapes, repetitions and contrasts. The combination of music with other lessons is based on the exploration of these basic concepts, elements and the relationships created by their interweaving. Interdisciplinary teaching, therefore, gives students more opportunities to create relationships and combinations that will make them better understand some content of all knowledge.

Key words: music, music and movement, interdisciplinarity, skills, preschool, protoschool

1. The Influence of Music in the Early Years of Man's Life — Special Reference to the Ages of 3–5 Years

Plato said that music is the soul of the universe, which gives wings to the mind. Aristotle identifies with Plato's view that music contributes to the moral perfection of man. But what is the real effect of music on humans and especially in the early stages of their development? Is it really beneficial and what emerged from the findings of the investigations? As is well known, Neuromusicology is the science that focuses on the research of the neural

bases of musical experience, thought and practice. The findings on the relationship between music and the brain have increased significantly, thanks to the evolution of neuroimaging methods and the findings of amusia. It turned out, therefore, that listening to, naming or comparing musical melodies activates areas of the brain that are directly related to cognitive functions, such as memory, attention or thought-judgment.

Shuppert in 2000 proved that both hemispheres of the human brain are responsible for the processing of musical information, with the right hemisphere processing the musical melody, and the left involved in rhythmic information and the recognition of modulation and melodic program. In addition, the age of the onset of music teaching and the type of education chosen plays an important role in the processing of music information. At this point, it is worth pointing out that most of the research that has been done on musical development concerns the preschool age, that is, the stage of pre-conceptual thinking, according to Piaget, in which the child uses symbols, images and movements, to describe the musical concepts of duration, intensity and tonic pitch. Among the general characteristics of musical behavior, Moog includes spontaneous vocal improvisation, imitation of the songs of the familiar environment and the gradual development of rhythmic coordination.

In general, preschoolers listen to, sing, discuss, play and make songs and thus prepare the learning processes they will use during reading and writing in the years to come. Music helps preschoolers to understand concepts such as: high and low, fast and slow, start and stop. The process of reading musical notes from left to right helps them later read words or write them. Also, keeping the rhythm and measure a piece of music, helps them understand the first mathematical concepts better.

A study done at McMaster University in Canada observed the development of the brain in children 4–6 years old using magnetoencephalograms for a year. The conclusions of this research, published in the neurology journal *Brain* of the University of Oxford, proved that children who took music lessons during this time, even learning to play simple tracks, showed greater development in the mental systems of their attention. That is, they could concentrate better on everything related to learning but also on their daily activities.

The improvement in concentration was also confirmed in a study conducted on more than 2,000 students of schools in New York, Connecticut, Virginia and South Carolina, USA. It was found, therefore, that the involvement with music positively affects children aged 9–12 years in the ease of expression of thoughts and feelings, in the willingness to try new things, in the collaboration with others, in the correlation of ideas and events, in self-confidence, in the ability to solve problems and in the performance in the lessons.

The same results were found in studies done on 144 six-year-old children in Toronto. The scholars created four groups, of which, one attended piano lessons, the other singing and the last one absolutely nothing for a year. In the first two groups the children had an improvement in intelligence tests.

The same results have been achieved in older children, such as students who were taught music from a young age, who were found to have higher performances in both theoretical and practical subjects. It turned out, that is, that the piano keys give children more brains than the computer keyboard!

What should be pointed out is, of course, that music benefits the development of mental functions and not the “passive” simple listening. Learning music requires the acquisition of various skills that improve intelligence, such as having one's attention focused for long periods of time, reading notes, memorizing pieces and practicing the craftsmanship of one's hands.

When we just listen to music, according to Don Campbell's book *The Mozart Effect* and the research it contains from all over the world, again there are beneficial effects, especially from listening to certain kinds of music, the most important of which are Mozart's compositions, hence the title of the book. According to these data,

music can unify the two hemispheres of the brain for better learning, increase the IQ by 9 points, according to a study by the University of California, improve test performance, reduce learning time, calm hyperactive children and accelerate recovery from illnesses or accidents.

According to many experts, listening to music increases performance in mental processes.

In addition, studies have shown that learning processes in music can serve as a means of knowing how to work in study processes and other subjects.

2. Interdisciplinarity and Music

Music which is taught at school aims to cultivate aesthetic ability and release children's creative potential. However, it is not an object that remains in isolation from the other areas of the Curriculum. There are parameters of other areas, which are either related to various concepts of Music and help their better understanding, or reinforce the positive attitude of children towards Music. Of course, the reverse is also true. Many musical concepts can help to better understand concepts of other cognitive fields. Thus, with the interdisciplinary approach to teaching, knowledge is developed through a process of continuous negotiation of all knowledge.

In fact, many philosophers have long pointed out the importance of the arts, in general, and music, in particular, for education. Specifically, Plato argues that musical education is so important, because rhythm and harmony penetrate deep into the innermost soul and exert the most powerful influence on it. Also, for Dewey, several years later, the arts should be an integral part of the child's education to form a complete personality.

The arts as a means of expression and communication include processes of thought, such as the interpretation of symbols, muscle-motor coordination, the activation of imagination and the refinement of aesthetic perception that help in other subjects.

Music, therefore, as an art, through its various activities, offers psychomotor experiences that contain materials for a better understanding of concepts. Jeffrey Aaron argues that, by completing some music lessons in combination with other core lessons, we help children develop their productivity, perception and reasoning. We can come, then, to the theory of the "transfer of learning", the phenomenon in which learning a topic or a skill affects the learning of a new topic or a new skill.

Wolff also argues that studying and practicing music can be seen as a mental exercise that hastens the learning of other subjects. Through this view, the processes of learning in music can serve as a means of learning the way of working and the processes of studying other subjects.

Bresler mentions four levels at which it is possible to approach interdisciplinarity and where the arts, and in particular music, are used to teach other subjects or to make them more interesting. That is, music and the arts can also be used to create a more pleasant mood in the classroom. The four levels are, then, as follows: in the first one discipline serves another by giving them a means that helps to learn some information more easily. This level is related to the teaching of concepts. At the second level, there are associations of topics, thus helping one lesson to clarify another. At the third level, the correlations of topics take the form of integrated thematic units. Finally, there are the correlations between related concepts. For example, the concept of the prologue in reading is similar to that of calculation in mathematics and hypothesis in science. Students will better understand the content of each lesson if they understand how these concepts apply to each field. They will also use the knowledge they learned from one lesson to understand another unknown subject that is similarly constructed to the previous topic.

Music, therefore, as an art but also as a lesson with a specific structure, has some concepts and elements, such as shapes, repetitions and contrasts. The combination of music with the other lessons is based on the exploration of these basic concepts and elements and the relationships created by their interweaving. Interdisciplinary teaching, therefore, gives students more opportunities to create relationships and combinations that will make them better understand certain content.

3. General Objectives

The didactic approach based on interdisciplinarity and Music aims to make students listen, feel, represent gesturally, see. Also, to perceive and perform in direct connection with listening and develop their imagination. To satisfy their tendency to discover, explore and enhance personal expression and through various musical and other activities to gain confidence, a sense of responsibility, cooperation, self-discipline, team spirit and to socialize. Moreover, to make music with improvisation a creative way of expression for them and to become good listeners, understanding the details of each work and knowing the graphic symbols.

In general, the goals are cognitive, emotional and psychomotor. As far as cognitive goals are concerned, one would think that children understand better the concepts of a musical composition but at the same time the concepts of another subject. They also understand the building blocks of both music and the other object, such as shape, organization, structure, coherence, repetition, contrast, dynamics, intensity, rhythm and more. As for the emotional goals it could be said that the student can hear through another art, for example painting and experience kinesthetically both forms of art. Also, the student can feel the fullness through creation. Finally, regarding the psychomotor goals, the student is called to move according to the flow of the melody by participating with his body and transferring the movement to all his members as well as to connect this movement with any other cognitive field of occupation.

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