

MUSICAL ACTIVITIES AS A STIMULATING TOOL FOR EFFECTIVE EARLY YEARS EDUCATION OF A WHOLE CHILD

BY

AWOPETU ANNA, V. (Ph. D)

Department of Early Childhood Care and Education

College of Education, Ikere-Ekiti, Ekiti State, Nigeria

P.O.Box 1839, Akure, Ondo State, Nigeria

E-mail address: annawopetu@gmail.com

GSM (+234)-(0)803-857-13-78

Abstract

Early childhood learning has been identified as an important element in the puzzle of human development. Early childhood institutions in Nigeria traditionally have two extremes in care and learning approaches: “care-only” oriented or settings that are school-oriented with subject-matter approach. In both cases something of central importance is overlooked: the individual child, with his or her own greatness, strengths and potentials, and most importantly with his/her needs, not the needs of the adults. Music could be that stimulating tool providing positive results in early childhood development and learning.

The aim of this paper is to discuss hidden potentials of musical activities and their importance in early childhood education with the emphasis on holistic approach in early childhood education. The study provides some evidences of the benefits of using music not only for entertainment and relaxation purposes but for a child’s early learning, especially in the areas of development of language, mathematical and social skills.

The study will contribute new knowledge to the under-researched area of early childhood education in Nigeria.

Keywords: *Early childhood, early learning, holistic approach, musical activities, mathematical and communication skills, Nigeria.*

Describing Early Childhood: Care and Learning

In recent years, there has been great interest among educators in the links between arts-based learning and human development. Research initiatives of the past decades have linked arts participation to cognitive growth and academic skills, including the strengthening of long-term memory, language and communication, mathematical skills and reading abilities, creative thinking skills and writing fluency (Geist & Geist, 2008). All these abilities begin to develop during first years of life of every individual which constitute early childhood period, and this period lasts from birth (or from the moment of conception as some researchers advocate) till the age of 6-8 years.

The importance of early childhood period cannot be underestimated in terms of its role in the life of any individual. Educators and parents should remember that early upbringing involves much more than simply care and molding a child into future worker or a citizen. Every child is more than a future employee; every person's intelligence and abilities are far more complex than common indicators of academic performance (Rosemberg, 2000). Such ideas were widely discussed by educationists for many decades (Friedrich Froebel, Heinrich Pestalozzi, Maria Montessori, Rudolf Steiner, Loris Malaguzzi, etc.), and are known, from one perspective, as child-centered approach to early childhood education and also known, from another perspective, as the holistic education movement.

Early childhood institutions in Nigeria traditionally have two extremes in care and learning approaches. "Care-only" oriented settings are employing staff with low education levels, have tended to have a weak academic emphasis. Other settings that are shaped by a school-oriented, subject-matter approach are based on the school system. In both cases something of central importance is overlooked: the individual child, with his or her own greatness, strengths and potentials, and most importantly with his/her needs.

Recently introduced in September, 2015 by the international community, welcomed by UNICEF and accepted by the 70th United Nation General Assembly, "The Sustainable Development Goals (SDGs) up to 2030", added early childhood learning to the Global Agenda and recognized it as an important developmental milestone. Therefore, early childhood learning has been identified as an important element in the puzzle of human development.

When describing early childhood learning, it is very important to remember that young children learn through discovery and that they do not view learning and discovery in separate parts. When children learn they do not learn in pieces. The young child does not say, "Today I am going to be using critical thinking skills with the building blocks and tomorrow I am going to be expanding on my language as I sing finger play songs". When children engage with the environment as well as with peers and adults around them, they learn in holistic ways. In other words, young children develop physically, socially, emotionally, linguistically and cognitively **at the same time** and therefore the processes of care and learning cannot be separated in the early years.

1. Holistic Approach to ECCE

The holistic approach to early childhood education was deeply conceptualized, explained and put into practice by pioneers of the holistic education movement who strongly believed in focusing less on the traditional milestones of academic development, and more on the complete physical, emotional and psychological wellbeing of a child (UNESCO, 2002). Maria Montessori, for example, prescribed a "prepared environment" containing specific materials that children use, independently for the most part, to learn at their own pace, responding to particular readiness for

specific sensory and intellectual stimuli. Friedrich Froebel as the founder of the kindergarten movement, believed in a “children’s garden” environment for fostering optimal growth and development. Rudolf Steiner’s ‘Waldorf’ approach is based on intuitive understanding of the needs of the evolving soul at each level of development.

In opinion of Miller (2006), focusing broadly on children’s holistic development and well-being, rather than on narrow literacy and numeracy objectives – remains the major solution in reaching and meeting the needs of the whole child. Miller (2006) also characterized holistic education as grounded in a fundamentally different worldview, reflecting very different assumptions about education in the early years.

The “whole child” perspective includes the consideration of all developmental areas to be engaged within each interaction and experience provided for the child. By doing so we honor the children for who they are and what they have to offer each interaction. We honour their unique individuality, their desire to feel accepted and included, but most importantly, we honour *their* needs, not the needs of adults. These positive experiences within learning will transcend to all later learning, allowing for confidence to be built through the deeper understanding of who they are and all that they have to offer others throughout their lives.

Holistic approach encompasses, as the name suggests, a broad range of teaching goals and aspirations for children’s learning that extends well beyond academic learning into fields of social and emotional wellbeing (Escobar, 2011). While this can at first seem overwhelming, caregivers can find the small opportunities in their day to day practice to incorporate and extend ideas that promote connection, wellbeing and integral experiences. These opportunities can be of different kind, from wide range of materials, resources, or activities. There are big potentials can be found in music when we talk about effective education in early years.

Hogenes (2015) stated concern over the lack of research currently being carried out in the field. In his opinion, educators across different countries face very similar challenges in underlining the important role that music and the arts play in a child’s holistic education. In his observations and communications, early childhood caregivers often believe that music is an activity which should be handled by purposively trained people with a special gift or a talent to use music in their daily work as a tool for language development, social training, enhancing of mathematical and motor skills. It seems therefore, very important to re-emphasize on some of the potentials that music activities have from the perspective of holistic development and education in early years.

2. Hidden Potentials of Music Activities

Music is a highly social, natural, and developmentally appropriate and stimulating way to engage young children in learning. Since one of the major needs of pre-school children is a need for a stimulating environment, the importance of music in early years is becoming clear. Music stimulates memory, attention, language skills, gross and fine motor skills, social and communication skills as well as improves achievements in mathematics and reading (Du Sautoy, 2004, Henriksson-Macaulay, 2014).

According to the Music Curriculum by the National Commission for Colleges of Education in Nigeria, “the importance and role of music in the growth of a child cannot be over- emphasized. The Nigerian child in particular is born and nurtured in music. He grows and learns in the society and he takes his exit from the world with music” (Federal Republic of Nigeria, 2009). But apart from direct use of music for recreation, pleasure and even in teaching, there are hidden pedagogical potentials that music carries.

There are lots of learning/teaching materials of the various choices available for early childhood. But to our surprise, these materials tend to be mostly visual/ spatial in nature, such as colored blocks, shapes of different sizes or texture, manipulative tools, art materials, books or play toys. They are meant to be perceived by the eyes. However, one of the first experiences children encounter as early as infancy is through their sense of hearing or touch (Meltzoff, Kuhl, Movellan, & Sejnowski, 2009). Hearing especially can be provided not only through listening to speech sounds but also by involvement in music activities.

Such activities as singing, finger play-songs, dancing, choreography, musical dramatization, playing musical instruments, etc can be and should be used in early education to create interest in learning and to stimulate holistic development through indirect means. In other words, music activities should be considered as a unique tool for effective and easier way of development of a whole child in general and his/her mathematical and language skills, social and communication skills in particular.

3. Music & Mathematics

Research on music and music therapy suggests that music influences brain development from very early in life (Burack, 2005). Musical elements such as steady beat, rhythm, melody, and tempo (pace) also possess inherent mathematical principles such as numbers, proportions, ratios, spatial properties, sequencing, counting, patterning, and one-to-one correspondence. They are just some of the concepts that are mastered by both mathematicians and musicians. Our bodies cannot help but react physiologically to musical input (Thaut & Kenyon, 2003). This implies that even the youngest children have the potential to inherently respond to music and the mathematical constructs it contains. Therefore, it is conceivable that listening to a steady beat pattern in the early childhood classroom could promote better attention and increased engagement in young children.

Many researches clearly indicated that an isolated “skill and drill” approach to mathematics in early years is not considered the best practice (Henriksson-Macaulay, 2014, Gardiner, 2000, Vaughn, 2000). Rather, they advocate for math learning in contexts that promote other types of thinking and problem-solving at the same time. Music is certainly one such context. Therefore, to promote important mathematical concepts in early years learning becomes very easy through music activities when those concepts are introduced to the child indirectly.

Gardiner (2000) is one of the researchers who explicitly explored specific early math concepts that tie to music, including a “pitch line” similar to a number line. The table below demonstrates some of the connections.

MATHEMATICAL CONCEPTS	HOW IT RELATES TO MUSIC
Number and Operations: Developing an understanding of whole numbers, including concepts of correspondence, counting, cardinality, and comparison.	Counting beats (“how many” in a rhythmic pattern)
Geometry: Identifying shapes and describing spatial relationships.	Comparing beats (“more,” “less”). Notation (notes are “higher” or “lower” on the staff).
Measurement: Identifying measurable attributes and comparing objects by using these attributes.	Organizing patterns of sounds. Tonality (“higher” or “lower”). Pace (“faster” or “slower” rhythms).

These are only few basic examples. Many more links exist. Gardiner (2000) believed “mental stretching” can occur in children when music-math links are recognized and exploited. His multiple research studies have shown promising connections between progress in pitch and rhythm and progress in math.

One of the mathematical concepts is “pattern”. Therefore, the ability to identify patterns is a key for success in mathematics. Geist, Geist and Kuznik (2012) identified **three types of patterns in elementary mathematics**. *Repeating patterns* are patterns with sequences (red, blue, red, blue). Gradually, repeating patterns become more complex as they may have three or more properties in the sequence. *Growing patterns*, such as 1, 2, 3, 4 or 2, 4, 6, 8, comprise numbers as the central element. Growing patterns can be demonstrated with numerals or with groups of objects. With these patterns, there are numerical or mathematical rules that govern the growing relationship of the groups. It can be “add one more” for 1, 2, 3, 4 or “count by twos” for 2, 4, 6, 8. *Relationship patterns* link two numbers by using some sort of function. For example, one box of crayons contains 8 crayons, 2 boxes of crayons have 16, so the pattern could be 1, 8, 2, 16, 3, 24.

Patterning activities in the preschool classroom help children create and repeat relationships and even use rudimentary number concepts. To create patterns with blocks or beads, a child must understand and then create specific relationships between the objects. For example, a child might alternate colors (red, blue, red, blue), sizes (large, small, small, large), or numerical patterns (1 block, 2 blocks, 1 block, 2 blocks).

According to Linder, Powers-Costello and Stegelin (2011), listening to music is especially important in supporting developing mathematics concepts in children from infancy to 5 years old because music is made up of rhythmic patterns and can be structured to make the patterning simple or complex, depending on the activity. Zentner and Eerola (2010) furthermore suggested that infants and toddlers have an innate capability to not only see patterns but also hear them in music. Reinforcing these capabilities by teaching patterns through music at an early age may benefit children’s cognitive abilities. Music is the children’s first patterning experience and helps engage them in mathematics even when they don’t recognize the activities as mathematics.

Steady beats and rhythms of different songs and dances that children learn, contain many complex patterns that have links to mathematic concepts. For example:

Tick! Tock! Tick! Tock!
Says my daddy's big clock
Tick! Tock! Tick! Tock!
That's my daddy's big clock

But my mummy's little clock
Says tick-tock, tick-tock, tick-tock
But my mummy's little clock
Says tick-tock, tick-tock, tick-tock

(German folk-tune)

In this song, the words themselves present a pattern. While demonstrating by different body movements and different pace representing “BIG daddy’s clock” (upper part of the body moving slow demonstrating clock with pendulum) and “LITTLE mummy’s clock (using just both point fingers moving fast), children perceive different bits with 2 different patterns:

Tick! Tock! Tick! Tock!
1 2 1 2
Says my daddy's big clock
1 2 1 2

But my mummy's little clock
1 2 3 4 1 2 3 (4 pause)
Says tick-tock, tick-tock, tick-tock
1 2 3 4 1 2 3 (4 pause)

An early exposure to patterns does not intend to teach mathematics, although the building blocks of mathematical understanding are introduced to the children. As children develop and learn, their understanding of patterns becomes more complex and perfect, and, as it was explained earlier, indirect introduction to mathematical concept is made. As children move through the preschool years, they gradually learn how to recognize, describe, extend, and create patterns (VanDerHeyden, Broussard, Snyder, George, Lafleur, & Williams, 2011). They make patterns that are more complex and more numerical, and they develop the ability to create and use them later then in the areas of mathematics and quantitative reasoning when for example, they need to identify and apply a certain pattern of a sequence in solving mathematical problems.

3.1.Recommendations for Using Music to Engage Children in Mathematics

Based on the reviewed research findings, here are some practical suggestions on how to use music activities in the early childhood education to promote children’s active engagement in mathematics:

1. *Use steady beats for the mathematics lesson.* For example, have children pat their knees, march in place, nod their heads, or listen to or play a drum while counting, sorting, reciting.
2. *Change the lesson dynamics regularly.* Keeping the same tempo and dynamic throughout an entire lesson may also lead to children becoming bored. Flexibility in tempo and volume of teacher’s voice increases children’s attention to the activity.
3. *Observe, listen, and respond to the children’s musical behaviors.* Caregivers need to be aware of children’s musical interactions. Children reveal what tempo (pace) is most comfortable for them through the speed of their movements or the speed of their singing or talking. Children also

reveal what volume they need to hear by singing. They may also seek out an object that makes sound to create the volume they need. For example, if children are very active and have high energy levels, teacher may choose to start the lesson with a very fast and loud dynamic. Once everyone's attention is focused, and children started to "cool down," the teacher may gradually lower her volume and decrease the tempo of the activity.

4. *Try to keep the music and math activities concept based.* The goal of using music and math together is to harness the power of music to engage children and foster emergent mathematic skills by stimulating children to make mathematical relationships. While there is no harm in having songs that focus solely on specific skills such as counting or naming shapes, these activities do not take advantage of what the research tells us about how music affects the brain. Begin by developing an activity that facilitates the construction of mathematical knowledge by encouraging the child to think mathematically, and then add musical elements to enhance the activity.

5. *Provide children with instruments they can use to shake or tap in rhythm with music they are listening to.* Finding the rhythm within music and being able to keep the beat is the beginning of connection between music and math. Allowing young children to make this connection encourages their confidence and beginning understanding of music and math.

6. *Encourage children to read stories with songs and dancing demonstrations.* Even language has a beat, and chanting or rhyming also encourages the brain to think in a linear mathematical way.

4. Music, Language and Communication Skills

Music activities that focus on all forms of language skills (listening, speaking, reading and writing), contribute to the success in effective early education. Adults play a crucial role in fostering language development in pre-school. This role includes facilitating meaningful conversations between adult and child, provision of opportunities for language experiences and interaction with print materials.

Adults can help children develop strong language skills by incorporating music into everyday routines and activities. Musical activities can help children develop an awareness of sounds that may help with phonological awareness, or awareness of sounds found in speech. Singing and listening to songs can give children an opportunity to practice using and listening to words. Musical activities may also enhance children's language development since they can provide an opportunity for dialogue between the adults and the children. Contemporary research shows that musical activities are linked with improvements in children's communication skills (Yazejian & Peisner-Feinberg, 2009), songs and musical activities have been shown to increase children's vocabulary (Galicia-Moyeda, Contreras-Gomez, Pena-Flores, 2006), children with stronger musical skills are more likely to have greater phonological awareness (Anvari, Trainor, Woodside & Levy, 2002).

Long before children say their first words, they use their hands and bodies to let adults know what they want and need. Children typically start using gestures between 8 and 12 months old. They often begin by pointing to things to get an adult's attention. Later, children use gestures as if they were words. For example, when a child flaps his or her arms, he or she may be communicating the idea "bird." Because gestures are a natural way that children learn to communicate, teaching children signs for words can help them strengthen their language and communication skills. Using signs or gestures may allow children to communicate their needs and understand others before they can talk. Even after children begin talking, signs can be used along with speech to help strengthen their language and communication skills. Rowe, Özçalışkan and Goldin-Meadow (2008); Rowe and

Goldin-Meadow (2009) suggested that the more gestures toddlers know and use, the more vocabulary they know as preschoolers. In opinion of Iverson and Goldin-Meadow (2005), toddlers who combine gestures with speech are more likely to use more complex sentences.

Zentner and Eerola (2010) indicated that children have the potential to be more engaged when listening to steady beats than when listening to verbal-only instructions. “Days of the week” song can be used instead of boring reciting the order of days. Such a practice was observed in some private Nigerian nursery schools, where unqualified staff was employed.

*We have caught a big, fat trout
That is what our song is about
We have caught a big....
We have caught a fat....
We have caught a big, fat trout*

*Then we brought it home ...the big, fat trout
That is what our song is about
We have brought home the big....
We have brought home the fat
We have brought home the big, fat trout.*

*Then we cooked the big, fat trout
That is what our song is about
Then we cooked the big...
Then we cooked the fat....
Then we cooked the big, fat trout*

*At the end we ate the big, fat trout
That is what our song is about
At the end we ate...
At the end we ate...`
At the end we ate the big, fat trout*

(Czech folk song)

This song can be used as an example of how to utilize music potentials for language development. While introducing this song, the caregiver will definitely explain the meaning of the word “trout”, children would fill in the blanks as they learn the song (“We have caught a big, fat ____.”). Also, children would be trained in using of a pattern and in following a sequence of actions and, therefore, develop their memory span (we caught, we brought home, we cooked, we ate). In addition and most importantly, children would learn indirectly some rules of English grammar (irregular verbs). This song may be used for music dramatization as well.

The song presented below can be sung with body movements as the description of a tea pot. By doing that, children would learn more signs and non-verbal expressions.

*I am a tea pot
Short and stout
This is my handle,
This is my mouth.*

*When the water boils,
You hear me shout:
“Pick me up and
Pour me out!”*

4.1. Recommendations for Using Music Activities for Development of Language and Communication Skills.

1. Sing simple songs and finger plays with gestures (e.g., “Twinkle, Twinkle, Little Star”, “I am a tea pot”, “My family”).
2. Change the words of well-known songs to make new songs (e.g., sing “Happy lunch time to you” at the beginning of lunch time).
3. When singing a song, pause to let children fill in the blanks. (e.g. “We have caught a big, fat ____.”).
4. Use songs to tell stories. Support the presentation with puppets, photos or pictures.
5. Have children act out parts of the song that involve body movements (e.g., “I’m a little teapot”).
6. Sing songs in children’s native languages.
7. Guide children’s hands when making a new sign or if the child needs assistance with the movements (Finger play song “My family”).

5. Music and Social Skills

Several studies have reported positive associations between music activities and increased abilities in children (Evans, 2000; Haddad, 2001; Piro & Ortiz, 2009). It was observed by researchers that children who were exposed to systematic choir training, dancing, playing musical instruments, showed better social skills as well. Such findings actually proved how important it was to include playing musical instruments in the early years learning especially playing in a group or in an orchestra.

It was also observed that in Nigeria children are not introduced to playing musical instruments early enough in life. The only opportunity they may have is to learn how to beat a drum or use a tambourine. Systematic learning of playing musical instruments can be offered mostly by well-established private schools or private tutors whose charges are not affordable by majority of Nigerians. That is why it becomes necessary to introduce musical instruments that do not require much to learn how to play them and can be introduced to children as early as children are 3-4 years old (Young, 2008). Toy drums, tambourines, elementary recorder or flute, xylophone, maracas – all of them can be perfectly good for use in musical activities for pre-schoolers. Especially, these instruments can be appropriate, if they are set in an orchestra. Participating in an orchestra enhances teamwork skills, patience, self-confidence, sense of responsibility and discipline, it enriches interactions and gives rise to and sustains the development of empathy (Nicholson, Berthelsen, Abad, Williams, & Bradley, 2008). In order for the orchestra to sound good, all players must work together harmoniously towards a single goal, they also learn to communicate better and cooperate with one another. Children learn how to be responsible and self-disciplined – the skills needed not only for academic success but generally in life.

At the final stage of learning a song, an orchestra can be added to make the presentation more colourful and to give children an opportunity to learn some more music skills such as playing musical instruments and participating in group presentation.

6. Recommendations

In view of the above reviewed research, the following recommendations are made:

1. Music should be a part of the early childhood education agenda and therefore, caregivers should have musical knowledge, practical skills and the confidence to sing and play.
2. Music activities should be considered as an essential tool in early learning.
3. Holistic approach should be kept in mind when planning music activities with early year's learners.
4. Educators' role should be re-emphasized in both perspectives: (i) facilitating music activities by providing resources, time and space, and (ii) mediating between the child's music activities and concepts of mathematics, language or social skills.
5. Reduce the risk of emphasizing mathematical or linguistic content knowledge by educators, who are not confident mathematical thinkers or linguists and may revert to didactic forms of teaching such as boring memorizing, worksheets, rote and drill. One solution to this challenge is to engage children in active learning that enables them to construct their own understandings through music activities.
6. Early childhood education student-teachers must receive a qualitative education in music. Consequently, it is important that music as a required subject in the preschool teacher education programmes in Nigeria, should receive more serious attention, should be taught from perspectives of practical aspects and the holistic approach to early childhood education.

7. Conclusion

Music has always been regarded as a unique tool and aid in the teaching/ learning process. Although certain progress has been made focusing broadly on early years' holistic development rather than on narrow literacy and numeracy objectives, much remains to be done in Nigerian early childhood education to reach the whole child. Music activities are indeed a stimulating tool in holistic approach and yearly years' education should not be considered in a fragmented way or only in terms of learning. It is far more complex, encompassing the whole human being, not only cognition, health and nutrition, but also the spirit, emotions, culture, expression, etc. But such a concept of early education cannot come about until the adults understand that the heightened sensitivity inherent in children is their basic equipment connecting them to the whole; that it is through expressing their minds, emotions and sentiments. Adults who do not understand these realities will be unable to grasp the essence of early childhood education that fosters a childhood culture, protecting and respecting children as individuals with their own rights, potentials, abilities and forms of expression.

Nigeria has not yet arrived at this stage. Fundamental issues remain unresolved and demand urgent attention from governments, policy-makers, researchers and practitioners. Some of the issues are the understanding and promoting of the concepts of early childhood education and care, a clear awareness about the holistic approach to the process of development in early childhood through music activities and implementation of an integrated and coordinated government policies on

ECCE. Once this is achieved, Nigeria would definitely make a great step towards desirable qualitative and effective early education of a whole child.

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