

Developmentally Appropriate Activities and Materials for Cognitive Development in Early Childhood in Nigeria

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Abstract— Learning the truth about the way in which children develop is not easy. It requires immense patience and the ability to make objective observations that are free from personal prejudice. This paper discussed developmentally appropriate activities and materials for the cognitive development of children in early childhood. The paper explains key terms in the topic such as developmentally appropriate materials and activities, cognitive development and children in early childhood. Other key issues in the paper includes: factors affecting early childhood development. It observes that the way children behave affect their development and learning and the knowledge of children's developmental level in cognitive development affects the way the teacher, parent and caregivers teach their children. It therefore suggests that to ensure that children grow to their full potentials, they should be provided with opportunity for appropriate cognitive activities and materials.

Keywords— Developmentally Appropriate, Activities, Materials, Physical Development, Early Childhood.

INTRODUCTION

Every day, early childhood practitioners make great decisions both long-term and short-term to prepare children for developmental skills and competences. As they do so, they need to keep in mind the identified goals for children's learning and development and be intentional in helping children achieve these goals. The core of developmentally appropriate practice lies in this intentionality, in the knowledge that practitioners consider when they are making decisions and in their always aiming for goals that are both challenges and achieving for children.

ECE is a pre-primary care and education given to aid physical, social, psychological and cognitive or mental growth and development of the child. This form of education is what is captured differently as Day-care, Creche, Play-class, Kindergarten and Nursery. It is the children's care, development and education from birth to the period of exposure to primary schooling experience in the formal, informal and non-formal settings. The care in this context is given from birth and the aspect of education takes off from around the age of two when cognition begin to manifest, that is, ability to acquire knowledge: the mental faculty or process of acquiring knowledge by the use of reasoning, intuition or perception. Both the care and education promote the child's growth and development.

ECE started as far back as the pre-colonial era in the form of nursery school or pre-primary education, though the demand for each education was low until recent time (Abba n.d). Early Childhood Education in the form of

nursery school or pre-primary education as we know it today in Nigeria is largely a post-colonial development. The semblances of ECE during the colonial era were the Kindergarten and the infant classes, which consisted of groups of children considered not yet ready for primary education. And since grouping for instruction in schools then was not age-based, some children aged six or even more, could be found in some of the infant classes (Tor-Anyiin, 2008). With the phasing out of infant classes, some parents began to feel the need for nursery schools.

During the pre-colonial period also, all efforts for provision of early childhood education were confined to the voluntary sector and received little or no support from the government. It was for the first time in 1977 with the introduction of the National Policy on Education by the then military government of Nigeria that the importance and need for ECE was given official recognition and linked with the child's educational performance in primary school. Gradually, early childhood institution stayed, and by 1985, Nigeria has about 4,200 early childhood education institutions. Then by 1992, the number increased to about 8,300 (Federal Government of Nigeria/ UNICEF, 1993).

Currently, ECE institutions are located in various places and buildings, Universities and Colleges campuses, premises of some industries and business organisations, Churches and Mosques premises and even residential buildings with unprecedented expansion owing to the high demand for early childhood care and education by parents. An investigation conducted in 2003 revealed that more than two-fifth (42%) of the sample ECCE

facilities in Nigeria was private-owned. Government owned accounted for 34% and 21% by local communities (Education for All Global Monitoring Report, 2007). As time went on, it became necessary for the government to increase its involvement in pre-school education in Nigeria. By 2004, this segment of education had been integrated into the Universal Basic Education programme by the UBE Act 2004. All children within the pre-school age bracket were entitled to be admitted without paying school fees into any ECE Centre, which was planned to be integrated into every public primary school. For the year 2003/2004, the gross and net enrolment ratios were 14.7% and 10.9% respectively and the normative age groups under consideration were 3 to 5 years of age (EAGMR, 2007).

In the National Policy on Education, Early Childhood Education is labelled as pre-primary education and is defined as the education given in an educational institution to nursery school children prior to their entering primary school (NPE, 2013).

Developmentally Appropriate Activities for ECE

These refer to events and items that are appropriate for nursery and primary school pupils. For effective stimulation of cognitive development in early childhood, it is important that early childhood practitioners get to know the appropriate activities and materials to be used at every stage. But first and foremost, they must get to know each child's age bracket in the group as well. They do this using a variety of methods – such as observation, clinical interview (an extended dialogue in which the adult seeks to discern the child's concepts or strategies), examination of children's work, individual assessments and talking with families (NAEYC, 2009).

From the information and insights gathered, caregivers make plans and adjustments to promote each child's individual development and learning as fully as possible. Developmental variation among children is the norm, and any one child's progress also will vary across domains and disciplines, contexts and time. Children differ in many other respects, too including in their strengths, interest, and preferences; personalities and approaches to learning; and knowledge, skills, and abilities based on prior experiences. Children may also have special learning needs; sometimes these have been diagnosed and sometimes they have not. Responding to each child as an individual is fundamental to developmentally appropriate practice.

The term developmentally appropriate refers to the practice of making curriculum based on what learners are able to do cognitively, socially and emotionally at a

certain age. It is a practice within early childhood education whereby a teacher or child caregiver nurtures a child's social, emotional, physical, and cognitive development by using all practices on theories of child development and individually identified strengths. The goal of using developmentally appropriate practice (DAP) technique is to give young children an ideal learning environment.

Cognitive Developmental Activities in Early Childhood

Cognitive developmental activities are activities that help to grow and exercise the reasoning and thinking skills of the child. Cognitive development is characterised by the way a child learns, acquires knowledge and interacts with his or her surrounding environment. Different cognitive skills are acquired as a child meets certain developmental milestone, but a child of any ability will benefit from activities that promote learning. As a teacher or parent, one can encourage the child's cognitive development in the area of memory, concentration, attention and perception by incorporating simple activities into every day routine. There are many of these activities but for the purpose of this paper, only a few of them will be discussed. Among these include games which encourage comprehension (what and why?), analysis (breaking information down), synthesis (putting information together), and evaluation (so what? Or is it good?). Some common examples of such games are: play and games, collecting and sorting, making and building, numbers and counting, role plays, singing of songs, sound identification, practising the letters of the alphabet, learning about colours, offering of choices and visiting of places.

1. ***Education Play and Games:*** Education play and games is the most dominant feature of pre-school life. A special form of play involves the invention or copying of a simple set of rules. For example, a child may invent his own game, such as hiding his or her toys and asking another person (teacher or parent) to hunt for them. The rules here are no more than that the person hunting for the hidden object must shut his or her eyes, and perhaps count, while the hiding takes place. Other games suggested by parents, teachers or older children, such as hide-and-seek or musical chairs, are also eagerly adopted and may be played time and again until the child tires of them.
2. ***Collecting and sorting:*** This is done by placing things into categories, sorting them into different types and carefully arranging them. This may be a collection of toys such as model cars, bought for the child by a parent/guardian or teacher. He or she can

line them up and arrange and re-arrange them according to size, colour, name, make or some other quality. This activity allows the child's brain to develop ways of organising the elements of life – a mental skill that becomes increasingly important in later years.

3. **Making and building:** Building blocks are a versatile and invaluable learning tool for any child, enabling him to explore the different properties of three-dimensional shapes, recognise identical objects by size, shape and colour, and develop visual-spatial skills involving the mental rotation of objects in space. A simple collection of building bricks can be assembled to make a castle, a place, a farm or ship and these imaginary creations can then be peopled with toy soldiers, princes and princesses, farm animals, sailors, and so on. It is easy to buy a ready-made building, but one that has to be built from scratch by the child herself involves a more active stimulation of her mind.
4. **Numbers and counting:** Teaching numbers and counting to two and a half years old is to make each test into some sort of game, rather than to apply more formal methods of teaching. For example, cutting an orange into four equal portions, for example, can be used to demonstrate that two quarters make a half and that two halves make a whole. Also sharing out equal numbers of small sweets can also be employed as a way of gradually coming to terms with number differences.
5. **Role Play:** This is a special form of pretend play for school children of age four and five. In this play the child becomes an actor taking on a part and then uses his/her imagination to perform as if he/she were someone else. This play requires the child to think what it must be like to be someone else and then to act accordingly. When children engage in this play type, they become creative as their imagination are pushed forward (Haggai & Shwamut, 2016). They create new things and assume different roles of parents, teachers, doctors, nurses, older siblings, and any other person and activity they have encounter with. Role play helps a child to improve his or her reading and writing skills at a later date. It may also lay the foundations for adult creativity.
6. **Singing of songs:** Singing of songs sets the stage for literacy and language development of the child. Children's favourite sing-along songs and music can be sang and or played in the classroom regularly. Using song and music help pupils retrieve information with ease and can help promote memory. The materials that can be used for songs and music with pre-school children include

compact disc (CD) player, radios, child size musical instruments and local musical instruments from the child's local community like clapper, drums and kacha-kacha (rattles).

7. **Learning about colours:** Identification of colours can be done with pupils in interactive activities in the classroom or elsewhere. The teacher can describe objects within the classroom environment using their colours. Colouring of objects can also be made using child size crayons of different colours on plain sheets. Some appropriate materials for this activity are water colours, poster colours, water, brushes, plain papers, transparent plastic bottles, crayons, cardboard papers and easels.
8. **Practising letters of the alphabet:** Teachers can engage pupils in the identification of the letters of the alphabet by saying or singing along to the A B C song, reading through books about the letters of the alphabet and playing with alphabet puzzles, blocks, jigsaws, colouring, cutting letters with scissors and so on. This activity helps a child to improve his or her reading and writing skills at a later date. The materials for practising of the letters of the alphabet include large coloured pieces of letters of the alphabet, puzzles of the letters of the alphabet, cardboard papers of different colours and scissors, letters of the alphabet and so on.
9. **Sound identification and discrimination:** teachers and caregivers can engage pupils in listening to various sound in order to identify, discriminate, or associate such sounds to situation or objects. For example, through a lesson, children may be engaged with paying attention to environmental sounds like vehicle sounds, rain sounds, the sound of the wind, sound of aeroplane, footsteps and so on. In this way, children will begin to understand how sound relate to objects in their environment, and also associate each sound with different circumstances. An example of material for sound identification is, different covered cans that can be shaken to determine sound that each makes.

Other activities for cognitive development in early childhood include:

1. **Offering of choices:** Teachers or parents could offer their child choices. For example, a parent could ask the child, "would you like to wear the brown shorts or the blue shorts?" or "would you like egg or bread with your breakfast?". The offering of choices will help the child feel more independent and learn to make confident decisions that affect his or her day.
2. **Visit places:** Take trips to local children's museum, library or farmers market to stimulate his or her

curiosity and provide him or her with first hand experiences. The care giver could ask the child questions while exploring and listening to the child's responses and reactions. These adventures can provide a learning experience for both the child and the caregiver.

According to Locher and Meyers (2014), cognitive development is characterised by the way a child learns, acquires knowledge and interacts with his/her surrounding environment. Different cognitive skills are acquired as a child meets certain developmental milestones, but a child of any ability will benefit from activities that promote active learning. Parents or teachers can encourage children's cognitive development in the areas of memory concentration, attention and perception by incorporating simple activities into their everyday routine as defined above.

Factors Influencing Early Childhood Development

The early childhood development literature development review (ECD) (2014) provides that a bank of literature exists with respect to factors that influence ECD, outlining significant factors and providing strong evidence supporting a number of practices and programmes. The review highlights ECD influences according to eight categories based on a published framework of child and youth health and well-being indicators. They include: health and safety, education, material well-being, equity, family and peer relationships, participation, subjective well-being, behaviours and risks, and the environment. Each description below relates to the categories listed above.

1. **Health and safety:** This includes vital parenting practices such as responsiveness, maternal infant interaction, breastfeeding, father's involvement, nutritional food choices, and physical activities.
2. **Education:** Family literacy, language and numeracy interventions have large impact on children's learning, health and development.
3. **Material well-being and equity:** Material circumstances can exert a strong influence on children's well-being and elements such as housing and neighbourhood can help build an important foundation for child's life.
4. **Family and peer relationships:** Infant-mother/father relationships and children's relationships with family and peers are key to their well-being.
5. **Participation:** Children's participation in after school programmes and activities can contribute to healthy development in physical, social, and emotional realms.

6. **Subjective well-being:** Poverty, trauma, and inadequate treatment impact children's social, emotional, and mental health.
7. **Behaviours and risks:** Physical activity and healthy eating are examples of healthy behaviours that contribute to children's well-being, while risky behaviours such as substance abuse and aggression can have a negative effect on children's health and well-being.
8. **Environment:** Environmental agents such as exposure to air pollution, persistent organic pollutants, heavy metals, second-hand smoke, and so on are detrimental to children's development.

Materials to Promote Child's Cognitive Development in Early Childhood

These refer to items or learning models that when the child is engaged with, can help to promote his or her cognitive development in early childhood. They are numerous, but for the purpose of this paper, only a few common ones will be mentioned. They include: model school bus and accessories; plastic cups and spoons of different colours; stacking wood blocks, plastic bowls, buckets, plates of different colours; scarves of different textures; pictures of people of differing genders, roles and occupations; toy shoes; push/pull toys such as trollies or mower; local drums, clappers; rattles and so on.

These are common toys used in pre-schools and generally, they actively engage children in many areas of development and can be used in a variety of ways depending on the child's interest, ability and imagination. Dorell (2008) suggests that Toys and materials that promote active learning motivate children to pursue their own ideas and interests enthusiastically. For example, toys such as model cars, handsets, bicycle, guns, balls and hand and finger puppets encourage children's interest in concepts like same/different, patterned/planned classifying, and sorting. Construction items help children learn about science and number concepts, and hardwood unit blocks help children learn about geometry, gravity, shapes, and balance. Children practice problem solving as they figure out how things work, and when children create with paint, they learn to mix colour and to use their own unique ideas, which helps them in exploring and discovering consequences.

In early childhood education, there are rules guiding the selection and use of these materials. A few examples of them are that:

1. Teachers, parents, and caregivers must ensure that the materials selected for use at particular times are safe for the child. Choking and falling are primary

concerns of infants and toddlers and toys and materials need to be safe. Teachers, parents and caregivers must therefore always select smooth edge and non-toxic items.

2. Teachers, parents, and caregivers in engaging pupils in using these materials should choose familiar items used in the homes such as plastic spoons, cups, colanders, plastic bowls, dish towels and so on.
3. Educators should also include materials that support each child's interest and skill, for example, if there are pre-schoolers who love soft toys that squeak, the teacher must make sure that several bins of soft toys that squeak are available for them to play with.
4. Teachers, parents, and caregivers must also choose materials that honours diversity, that is, materials should be representative of children and families who attend the activity and the community and should promote positive portrayal of all persons. A variety of materials should include people of differing genders, roles and occupations (female fire-fighter, male caring for a child), ages, ethnicities, and ability level (person wearing glasses, person using an assistive device like a walker or a wheel-chair).
5. Early childhood educators should also provide and use materials that include a variety of textures, skills, colours, sizes, shapes and functions. Items can be made of woods, metal, plastic, cloth and should be smooth, bumpy, soft and hard. Neutral and coloured items are pleasing to children and when appropriately used can stimulate creativity in the child.

CONCLUSION

Research abounds on the enhancement of children's developmental skills focusing more on children's physical and social skills and competences. However, conscious and deliberate training of children's cognitive development is not given the desired attention.

This deliberate attitude constitutes great threat not only to children's future academic success, but also makes children to be non-creative in a world that is caged by repetition and non-sustainability in development.

Concern for the cognitive development in early childhood is necessary for transition to higher school and positive academic adjustment in later life, and this should be taken into cognisance by teachers, parents, caregivers and all stakeholders in early childhood education in Nigeria.

Also, teachers and early childhood educators should focus on children's cognitive developmentally

appropriate activities and materials by producing and selling such materials to enhance same.

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