Imperativeness of Toy Making for Cognitive Development in Early Childhood Care and Education for Sustainable Development in Nigeria

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Abstract

This paper examines the Imperativeness of Toy Making for Cognitive Development in Early Childhood Care and Education for sustainable development. Toys are physical items used in play by children. Toys appeal to children of all ages across the globe. The right toys available at the right time can spontaneously guide children to greater heights of accomplishments. Toys enhance cognitive behaviour and stimulate creativity. They aid in the development of physical and mental skills which are necessary in later life. The paper which is theoretical in nature highlighted the characteristic of toys, categories, functions and selection of toy to support the child's cognitive development. The paper concludes among others; that teachers can easily make toys from inexpensive (no-cost) materials found in their environment, engage children in making their toys and government and Proprietors of schools should adopt professional practices and devote more time to the use of toys as basic instructional materials.

Key words: Toy making, Cognitive development, Sustainable development

Introduction

Early childhood education is a time when children often experience the greatest environmental challenges, and a time when the foundations of many of their fundamental attitudes and values are first put into place. Early childhood is a time when the child's cognitive development which involves thinking skills and the ability to process information and to understand how the world works. For this foundation to be solid, toys and play naturally provide opportunities for practicing different thinking skills, such as imitation, cause and effect, problem solving, and symbolic thinking.

Play is the mechanism by which children learn how they experience their world, practice new skills, and internalize new ideas and is therefore the essential work of children (Paley 2004). Through this continuous and expanding process, early skills give rise to new ones and new experiences are integrated with previous ones. Through play, children learn about the world and engage in activities that encourage their cognitive, emotional, and social development (Elkind 2007). For example, when a child bangs on a drum, she Homemade toys and readily available materials learns she can create a sound. Through play, she learns the important concept of cause and effect. Children also learn to identify colors, numbers, size, and shapes. These have the ability to enhance their memory skills as well as their attention span.

Toys are among a child's first possessions. A toy is any object that can be used for play. Toys are usually associated with children and pets; hence, early experiences with toys can have lasting effects on a child. According to Product Standard (2004), a toy is any product or material

designed or clearly intended for use in play by children of less than 14 years of age. Goodson (2005) stated that, if play is the child's work, then, toys are the child's tools, and appropriate toys can help children do their work well. Toy is an object or thing that can be used or manipulated to amuse and encourage playfulness. Orji, (2013) noted that toys as instruments of play make learning fun and more effective especially if the toy is voluntarily chosen, involves active engagement, and is pleasurable. Toys appeal to children of all ages across the globe. Abrams & Kaufmann (1990) opined that toys are intrinsically motivating. The right toys available at the right time can spontaneously guide children to greater heights of accomplishments. Toys enhance cognitive behaviour and stimulate creativity (Abrams & Kaufmann, 1990 as cited in Orji, 2013). They aid in the development of physical and mental skills which are necessary in later life. Toys that have the right degree of novelty can ignite creativity, stimulate imagination, awaken wonder, and bring enjoyment to children. They should have both familiar and unexplored features to make them attractive and challenging. Insightful teachers can utilize the natural appeal of toys to understand and capture a child's perception of the world and of himself. In the same vein, parents and caregivers should therefore make deliberate effort to provide their children with quality play-time and appropriate toys (Orji, 2013).

Toys are much more than just games and fun activities for children. There are many toys which affect a child's physical and mental health in a positive manner and give them the opportunity to learn something new. Many educational toys are built in such a way that engage children by boosting up their sense and imagination and encouraging them to communicate in their own language. The role of toy-making in child's cognitive development cannot be overemphasized because it helps to teach general concept of learning and associate them with events and objects in daily life. Wise selection of toys for every developmental stage of a child will go a long way in enhancing learning. Books, games, puzzles and toys with various shapes, colors and sizes can be especially helpful in encouraging mental activity (Ken, 2007).

There has been much debate about which toys are the best for children. Some argue that high-tech toys provide the best educational opportunities, while others say that simpler toys that require imagination and creativity teach a child to think for herself. Sadly, many teachers/caregivers spent more time discussing and interacting with the children without practical experiences instead of exposing them to the use of certain educational tools found in their environment. Many of the teachers do not know the materials used in constructing simple toys that can enhance the child's cognitive development.

It may interest you to know that 2030 Sustainable Development Goals (SDGs) include, for the first time to recognize the importance of early childhood development. Specifically, the Sustainable Development Goal 4 is to ensure lifelong learning as following; Early stimulation that deals with increases duration of schooling, school performance, and adult income. In addition to this explicit goal, early childhood development provides a natural link to seven other goals— including poverty reduction, health and nutrition, women and girls' equality, and ending violence.

Concept of toys

Toys are items or any useful object in play situation, regardless of the way it is used (Orji, 2013). Uyoata & Etim (1999) citing Orji, (2013). describes toys as play objects used mainly by children; they are also essential to their integral development. Oppenheim (1997) defined a toy as an object that is intended for play and its main purpose is to provide fun and amusement. He further noted that toys play an important part in education and that through play, children at every stage learn about themselves and others and about how things work. He maintained that children need a variety of toys that challenge them to use their minds, bodies and feelings. Davis (2001) observed that a young child uses objects in his or her physical environment as tools to accomplish activities, and the use of tools as mediators of activity is linked ultimately to the child's intellectual development and learning. Davis maintained that toys are the most common tools available during infancy and the early childhood period. Very early in development, toys dominate children's daily activities and play critical role in helping them construct meaning from their everyday experiences. The use of toys in play helps children develop physically, socially, intellectually and creatively (Dike 2007). Fond memories of childhood Nancy (2010) noticed usually bring to mind a favorite toy. A cuddly doll, colorful crayons, or a special wagon are all childhood favorites. Toys are fun and they help children learn about themselves, their environment and the people around them (American Consumer Affairs Division (ACA) Year D, 1998). Anyanwu (2004) observed that children have general tendency to play, therefore suggested that child-care-givers should provide them with toys and other materials which they can manipulate and play with. On the other hand, the national policy on education (Federal Govt. of Nigeria, 2004), recognized the importance of toys, hence one of the objectives of pre-primary education is to inculcate in the child the spirit of inquiry and creativity through the exploration of nature and the local environment.

Oppenheim (1997) however noted that a walk through any toy store shows the huge variety of toys that are available today. Among them are puzzles, pegboards and colored blacks. He goes on to remark that shelves are stacked high with electronic games and toys that mirror all the inventions of the modern world. Nevertheless, he argued that old favorites such as kites, wagons, and roller skates are still in existence. Hiller (2000) states that toys can be seen as the tools of human child, training him in physical skills, developing his inauguration, and stimulating his thinking. He further pointed out that toys imitate in a miniature way the world familiar to children. Toys differ according to the part of the world where the children who use them live, the nature of the society, the period of time in which they grew up and the materials available. He further remarked that toys are valuable as a record of social history. As far as children are concerned, toys for plays are like tools for learning. When they are provided with safe and appropriate toys and materials, one will be thrilled at the abilities and talents these may evoke in them. Parents of preschoolers are therefore advised to budget for toys and playthings as they do for clothes and food. According to Dike (2007), parents and teachers should be acknowledgeable about the toys and playthings children are playing with. If toys show signs of wear or have

broken parts, they should be discarded. Toys bring a great deal of joy to children, but they also can be valuable learning tools. Exploring, pretending, and sharing are just a few of the important skills children develop when they play.

Concept of cognitive development

Cognitive development includes the development of imagination, creativity, problem solving, concepts formation, reasoning, memory and concentration (Beaver, et al, 2001). Cognitive development in early childhood means how children think, explore and figure things out. It is the development of knowledge, skills, problem solving and dispositions, which help children to think about and understand the world around them. Brain development is part of cognitive development. Cognitive development refers to a set of intellectual abilities that researchers consider to be 'normal' for an infant, toddler, preschooler or kindergartener. In other words, it's the quantification, or systematization of how much a child should be able to do or understand by a certain age.

Jean Piaget, the Swiss psychologist, suggests that children's intelligence undergoes changes as they grow. Cognitive development in children is not only related to acquiring knowledge, children need to build or develop a mental model of their surrounding world (Miller, 2011). Piaget offers a very different view of cognitive development, one based on allowing children to build concept actively rather than on providing those concepts through direct teaching. Piaget believed that by physically manipulating and changing objects, the child constructs knowledge about the object and their relationships (Eva. & Melissa 2019). This means that knowledge is not something that is poured into a child by some external sources such as the teacher, but something that the child has to construct for himself or herself. Piaget theory is also called a constructivist theory. for example, a child trying to place a square block on the top point of a triangular one will, after some trials, construct an understanding of the relationship of these two blocks and which block will or will not support the other one. By transforming the block into a new position, the child acquires knowledge. Based, on this transforming materials in the environment, learning has to be an active, not a passive process (Eva & Melissa, 2019).

According to Jean Piaget, stages of development takes place via the interaction between natural capacities and environmental happenings, and children experience a series of stages (Wellman, 2011). The sequence of these stages remains same across cultures. Each child goes through the same stages of cognitive development in life but with a different rate. The following are Piaget's stages of intellectual development: From birth to 18-24-month Sensorimotor stage (Object permanence); From 2 to 7 years Preoperational stage (Symbolic thought); 7 to 11 years Concrete operational stage (Logical thought) and age 12 and above Formal operational stage (Symbolic reasoning). During the preschool years, children begin to acquire some specific cognitive skills/ tasks which include; classification; seriation; numbering; temporal; and spatial concept; and acquisition of information (Eva & Melissa, 2019).

Characteristics of Toys

There are several overlapping characteristics of worthwhile toys that can be considered before purchases are made. Some of in the words of Nancy (2010) include: Sturdy, durable and safe: The most basic criterion, of course, is that toys are safe. A loved toy in the hands of a three to five-year-old will undoubtedly be subjected to a lot of tear and wear. Loose parts, sharp edges, and broken bits can obviously be unsafe. Other characteristics include the following according to Orji (2013).

Multipurpose:

Toys are best if they that can be used in a variety of ways. Put quite simply, ask if the toy is good for only one thing? If so, then you may want to question its value. The term open play materials are often used to describe the characteristic of multipurpose. These toys usually allow for the child to apply some creativity and imagination. Think, for example, of all the things a young child might do with a doll, a wagon, or a set of blocks.

Engaging:

Young children are driven to explore, experiment, and to discover. Good toys allow the child articulate these curiosities and hence get involved, to get engage and be an active participant, rather than just be entertained. According to Roode (2010), there is an ever-increasing variety of commercially available toys (often battery operated) that basically requires no more from the child than that he/she presses a button or to turn a dial, sit back and watch. While these often capture the child's interest intensely initially, with its bells and whistles, lights, and perhaps movement, this interest soon wanes. These toys are often expensive, and do have appeal to adults; this therefore calls for caution and care to determine whether or not they are worth the investment. In general, the more a toy allows a child to do, the better it is.

Added value:

There are many toys available for purchase that are no more than substitutes, and sometimes less desirable substitutes at that, for items around the house. Some of these are imitations of the real thing (for example, handbags, dinner sets, sieves and other kitchen utensils); while others are items that can be very adequately substituted for by household objects (for example, containers, stacking sets, tubes, small tents and cubbies). Other commercial toys are things that can be easily improvised. Again, when considering investing in toys, as stated by Ken (2007), it is advisable that parents try to be sure it is going to add possibilities and opportunities to children's experience that are in addition to the ones offered by what is already there. Efforts should be made to ensure that the toy offers opportunities different from those offered by real objects. Three to five-year olds like to use real objects, so whenever possible they should be provided with them instead of toy improvising.

Encouraging of collaboration and communication:

While selecting toys for three- to five-year-olds one thing to be borne in mind is to encourage them to learn to be with other children in a healthy way. There is no doubt also, children need to learn to be comfortable with their peers, to enjoy their company and to avoid being overly reliant on others. Toys and other play materials can enhance the realization of this goal. In making and or purchasing toys, one should as well consider the importance of having a balance of both opportunities for a child to engage by himself and for working with others.

Acknowledging diversity:

Children can learn to appreciate differences at a surprisingly early age. Giving a child toys from a variety of cultures enriches the child's experience and can strengthen understanding of difference.

Aesthetically pleasing:

One of the values that most parents would want to nurture in children is a sense of beauty; they should think about this when purchasing toys. Children can learn to appreciate the smoothness of wood, the beauty of natural colours, and the texture of soft, smooth fabric.

Michael (2011) stated a list of ten characteristics that should be looked out for in an appropriate toy: Sensory attraction: How many senses will the toy occupy? Activation method: Will the toy provide a challenge without frustrating your child? Self-expression: Will the toy allow your child to express himself, be creative, and make choices? Success potential: How many "correct" ways are there to play with the toy? Can play be open-ended with no right or wrong responses? Ways of use: Can the toy be used in many different positions? Popularity: Is it a popular toy? Flexibility: Does it have adjustable volume, speed, and level of difficulty? Opportunities for interaction: Does the toy provide a chance for other children to be involved? Will it build social skills? Individuality and growth: Will the toy engage the child in activities that indicate the child's developmental age and growth? Does it reflect the child's interests? Safety and durability: Is the toy durable, considering your child's age and strength? Is it safe? Having said all of the above, we need to add here that some of the best toys that meet these criteria are blocks (wooden, plastic, soft and hard, large and small), construction and manipulative toys (lego, duplo), and many other kinds that allow fitting together and taking apart, and props for dramatic and pretend play, such as vehicles, animals, dolls and fencing (Orji, 2013).

Categories and Functions of Toys

Toys have always been children's constant companions. Small colourful toys help children discover the different colours and shapes. It also introduces them to the different sounds of their surroundings and allows them to distinguish the different textures (Orji, 2013). According to Allen (2007), Toys and Games categories includes manipulative and construction toys; puzzles, collectibles, matching games, magnetic blocks clay-dough, dolls, scrabble, picture books

drawing/painting materials and other games that children can play at a table, on the floor, or on top of a divider shelf. These materials she further submitted, offer children a quiet activity that they can do alone, with a friend, with a teacher or a parent volunteer, or with a small group. Children strengthen all areas of their development as they play with toys and games. In the words of Roode (2010), the main purpose of toys is to bring joy to children. It adds more fun to their games. But one can never underestimate the power of toys he submitted. Roode further stated that toys are very helpful in preparing your child to learn bigger things. Although it may only seem that they are just playing and having fun he highlighted, there are a lot of things that children can learn by the use of toys since certain toys give your child the fun of playing and learning at the same time (Orji, 2013).

Selection and use of toys to support cognitive development

To select appropriate toys for preschoolers; teachers, parents, and caregivers should consider if the toy: could be used in several different ways, powered by a child's own ideas and imagination, is fun, safe, durable and attractive, have varying levels of activity that offer on-going challenges to a variety of ages and ability, have appropriate values, ethics, problem-solving features, and over time, will still be cherished by the child (Roode, 2010).

When choosing materials for toys, it is important to consider the children's communities and cultures. Teachers can bring into the classroom elements of different languages, dress, and music. Nancy, (2010) as children build with table blocks or make designs with pattern blocks and parquetry blocks, they experiment with construction and invention and use creative problem-solving skills. They also expand their emerging math skills such as counting, matching, patterning, and classification. In fact, the Toys and Games Area often serves as the math hub in your classroom (Roode 2010, Orji, 2013).

Different types of materials used in the classroom develop different types of thinking. Guilford (1967) in Orji (2013) classified these materials into convergent and divergent materials. Convergent materials are toys with single or prescribed uses, and encourage convergent thinking. Puzzles, simple card and board games, and sorting and stacking materials are examples of convergent materials found in a pre-school classroom. Divergent materials like blocks and building sets are toys that lead to multiple uses and are more open-ended, and thus, encourage divergent or lateral thinking. Divergent thinkers search for many different ways of defining or interpreting a problem. De Bono (1992) in Orji (2013) added that it is the blending of literal and imaginative thought that is necessary for problem-solving. Early childhood practitioners and experts suggest that toys, to be effective in developing problem-solving skills in children, must have the following attributes: (1) safe, durable, and attractive; (2) have varied use; (3) developmentally appropriate; (4) encourage exploration and experimentation; (5) stimulate original thinking; (6) provide simple cause and effect relationships; and (7) provide open-ended experiences for making choices and decisions (Orji 2013) These toys are tools that can enhance the learning process of children and the teachers have the responsibility to define the

environment in which these toys will be utilized in the context of developing the problem-solving skills of preschool children. Encourage your child's problem-solving skills by showing him how to look up answers to questions by using a picture dictionary and other books.

The following examples illustrate toys that are easy to find or make, as well as specific areas of cognitive development that can be addressed with the toys. Keep in mind that a lot of toys are open- ended— appropriate for children at different ages and developmental levels. Children can use these toys in many different ways, and they will hopefully spark your imagination to make other fun, educational toys for infant and toddlers' classroom. Materials like fabric which they use to make scarves and pieces of cloth of different colors and textures can come from old clothes, sheets, provided by families, collected by teachers, or donated by a store in the community. Teachers can use fabric with children of all ages. Puzzles is another material teacher can use to build on children's developing cognitive skills. This can be done by creating simple picture puzzles. To make puzzles, draw a picture, print a photograph, or cut out a picture from a magazine. Glue the picture to a piece of cardboard or paper plate so that the puzzle is easier to manipulate, and cut into pieces that a child can reassemble. Blocks are another great toys for children of all ages. Blocks made of wood are one option, but teachers can also offer shoeboxes, cereal boxes, plastic bowls, cups, and paper bags filled with crumpled newspaper and taped shut. These simple blocks are best for children 2 years and under, while wooden unit blocks are good for ages 2 and up (MacDonald 2001). Children can explore, move, and hold blocks before beginning to stack them vertically or line them up horizontally to form simple structures or complex designs. They can select blocks of the same size or in uniformly descending sizes.

Imperativeness of Toy Making for Cognitive Development in Early Childhood Care and Education for sustainable development

Education for Sustainable Development provides a vision of education that seeks to balance human and economic wellbeing with cultural traditions and respect for the environment. It is therefore important to recognize that sustainable developments are supported by these three pillars acting together, and that any practices and policies developed without taking each into account are likely to weaker and may even fail. From the perspective of sustainable development, the most efficient or effective environmental, economic or social strategy may not be the most sustainable. Davies et al, (2009) were grounded on notions that children are competent, active agents in their own lives and recognized that children are affected by, and both capable (and often required by circumstance), to engage with complex environmental and social issues. Sira-blatchford et al (2010) assert that the children's parents and families can make an important contribution to a child's understanding of sustainable development. They came up from great deal of research evidence which shows fundamental importance of the early home learning environment on a child's development especially the cognitive aspect. Sira-blatchford used Early Learning Toy Appeal at Ireland Wood Children's Centre in England which provides a good example of effective practice where the parents and children were encouraged to work

together on a major project. As a team, the staff wanted to develop the environmental education curriculum and it was also felt important to develop projects that involved all three pillars of sustainability. The Centre serves a multiethnic community, and many children come from disadvantaged backgrounds, so it was also felt to be important to promote community and parent partnerships.

During their research they noticed that toys made from a variety of materials (wood, plastic, metal, fabric), and toys from around the world, and with different mechanisms were left for the children to explore. Many children selected wooden bricks to play with and enjoyed creating different structures that were incorporated into their imaginative sociodramatic play (Sira-blatchford et al, 2010) The children were able to discover other 'no-cost' materials which includes shells and pebbles, were used for the construction of the toys in collaboration with teachers and parents. When looking at toys many children also showed an interest in how the wheels turned on the toy tractor and how the toy supermarket trolley moved. All of these experiences provided a fantastic opportunity for the children to begin to analyze, appreciate and evaluate the toys.

One of the implications of this for early childhood education is that we need to develop in young children a more critical appreciation of many of the most advanced products of science and technology. This suggests a significant shift in perspective from traditional approaches to these subjects which focused upon the uncritical celebration of achievements. It has been succinctly established that Construction toys influenced language skills development of preschool children when they can speak in sentences of five or more words about toys, recite poems with increasing construction activity and name favorite toys. This study has equally shown that Construction toys influenced Social skills development of preschool children when they can tell stories about friends' toy construction, sing and dramatize with toy parts, share, take turns and learn concept of fair play. On the other hand, Manipulative toys influenced problem-solving skills development of preschool children when they are able to dismantle and assemble toys with ease, complete a six-piece puzzle, curiously and excitedly alongside same-sex, manipulate complex toys

Conclusion

It is imperative that Early Childhood Education is recognized as the starting point for lifelong learning within education for sustainability. A child's cognitive development involves thinking skills and the ability to process information to understand how the world works. The preschool child's cognitive development has the tendency of lying dormant, if he/she lacks opportunities to play with toys. Toys and play naturally provide opportunities for practicing different thinking skills, such as imitation, cause and effect, problem solving, and symbolic thinking. For Toys to be effective in developing cognitive skills in children, it must have some attributes like safe, durable, attractive, have varied use; (developmentally appropriate; encourage exploration and experimentation

Suggestions

1. Since the paper has established that toys are an essential classroom ingredient, teachers can easily make toys from inexpensive (no-cost) materials found in their environment. Readily available materials, when used appropriately, can stimulate play and development across all domains.
2. Toys are important instruments in facilitating a child's development, so teachers can engage children in making their toys.
3. The government and proprietors of schools should provide regular training opportunities for staff to improve skills in caring for children and to ensure that the practitioners update ideas about child development.
4. The Proprietors and managers of schools should adopt professional practice and devote more time to the use of toys as basic instructional materials.
5. Toys made from a variety of materials (wood, plastic, metal, fabric) are highly recommended for the children.

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