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# **The Importance of Play in Early Childhood Development: Implications on Design and Technology Education in Zimbabwe**

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## **Abstract**

*In the study leading to this paper, the task was to determine the possibility of the Department of Technical Education at the University of Zimbabwe in-servicing Early Childhood Development (ECD) teachers in Design and Technology (D&T) through short and long-term courses. Such courses would specifically relate to the application of D&T as an approach to the teaching and learning of identified psycho-motor related technical skills. 'Play' was identified as an important vehicle to promote such a process at ECD level; hence the need to determine its implications on D&T Education. Investigations were mainly based on a document analysis of the handbook 'Curriculum for the Child – Early Childhood Education and Care Programme – Zimbabwe' (1993; revised, 1999), where special attention was specifically focused on the 'Art and Craft' section. More data on the subject of 'play' were gathered from additional publications from the internet. Results and findings clearly showed that the various forms of play manifesting in early childhood, the importance of play and how abilities (technical skills) promoted through play could be placed in line with the principles underpinning D&T education. The recommendations made in this study proffer a critical need for further research with the intention of taking advantage of play as a foundation for skills development at various levels in the education system.*

## **Introduction**

This paper is based on a study, designed and conducted as a follow up to an earlier study entitled, '*Prospects for Technical Education Contributing towards the Development of Early Childhood Development (ECD) in Zimbabwe*' (Kwaira, 2014). Of the three previous recommendations, the one found pertinent to this study had to do with the need for further research, where the Department of Technical Education at the University of Zimbabwe would design and run short and long-term D&T courses for in-service ECD teachers. These courses would specifically concentrate on the application of D&T as an approach in the teaching and learning of identified psycho-motor related technical skills. *Play* was then identified as the main vehicle to promote such activities, thereby justifying the need to determine its value and implications on D&T education in Zimbabwe. Taking from the above mentioned previous study, this study continued focusing on the 'Art and Craft' section of the handbook 'Curriculum for the Child – Early Childhood Education and Care Programme - Zimbabwe' by the then Ministry of Community Development and Women's Affairs (1993; revised 1999). Besides this handbook, a detailed and extensive internet search culminated in the location of several publications on the place of 'play' in ECD and the possibility of having it being the foundation in the teaching and learning of various psycho-motor related technical skills within the context of D&T education in Zimbabwe.

## **Background and context of the problem**

According to Young (2007), global interdependency is posing formidable challenges for future generations and society. The workplace of the 21st century is becoming vastly different from that of previous centuries; even the 20th. This century is increasingly favouring a work force consisting of individuals who are intellectually flexible, skilled in problem solving, emotionally resilient, and

able to interact with others in constantly changing social environments and highly competitive economies (Young, 2007). Maximizing human potential now appears more important and necessary than ever before. For Zimbabwe, like many other countries, this has become a challenge. In order to address this issue globally, the World Bank has been assisting many countries by funding education (Young, 2007). Of late however, most countries have tended to focus more and more on ECD, thereby, *prioritizing this sector in their national development agendas. Globally, growing consensus backed by empirical evidence has shown ECD as one of the most effective measures in alleviating poverty as well as improving economic competitiveness and labour productivity* (World Bank, 2014)

Being the bedrock of Zimbabwean education, ECD has continued to grow from strength to strength since independence in 1980 (Kwaira, 2014). Regarding enrolment and infrastructural development, Zimbabwe has done relatively well, featuring among the best systems in Africa. However, despite all this progress, the problem now appears centred on the issue of quality (Nziramasanga, 1999). There seems to be a mismatch between what goes into the system quantitatively and what comes out qualitatively in terms of returns from investment. The country does not seem to be getting enough value for money given that year after year relatively large numbers of children enrol into the system at various levels. Unfortunately, the results have been discouraging with pathetic pass rates, particularly in science and technology related subjects, including technical subjects (Matabvu, 2015).

In this study, technical subjects were the central issue. Allegations are that school leavers and college/university graduates tend to lack the requisite skills to function effectively in the world of work. In most cases they lack creativity

and fail to function innovatively in problem-solving situations (Nziramasa, 1999). The challenge has been to try and locate the real source of the problem in order to help address it. After lessons from various models, part of the solution was traced to the foundation level of education. Evidence from progressive systems shows massive investments at this level; emphasizing on *play* as the main vehicle promoting the teaching and learning of psycho-motor related technical skills. A lot more, however, still needs to be done at ECD level.

Given this background, there was therefore a pressing need to identify the specific points at which the importance of *play* could be realised within the context of ECD in relation to the teaching and learning of technical subjects through the D&T approach.

### **Research questions**

In the process of addressing this issue, the following questions guided investigations:

- i) What forms of play manifest technical skills in early childhood?
- ii) In what way are the forms of play manifesting technical skills in early childhood important to ECD?
- iii) Of those abilities and related technical skills promoted through play at ECD level, which ones could be in line with the principles underpinning D&T education?

### **Some theoretical perspectives**

To locate this study into the appropriate contextual/theoretical framework, views and perspectives on the following topical issues needed unpacking:

- ❖ The environment as a source of stimulation in child development
- ❖ The phenomenon of '*play*' in early child development

- ❖ Possible lessons for Zimbabwe from outstanding ECD models
- ❖ International views justifying investment in ECD programmes
- ❖ The essence of D&T in relation to *play* within the context of ECD

### **The environment as a source of stimulation in child development**

Primarily rooted in the cognitive tradition and heavily influenced by Jean Piaget, Jerome Brunner views people as being active in the process of learning, continually structuring and restructuring their environment (Hannum, 2006). Thus, he is strongly opposed to passive learning that mechanically associate stimuli and responses. Instead, he believes in people selectively perceiving certain aspects of their environment and representing the resultant perceptions internally before acting upon them. Bruner has been a highly influential proponent of 'cognitive development'; a process in which a child progressively develops three modes of representation: enactive, iconic, and symbolic. For success, instruction should match the learner's mode (Hannum, 2006).

Viewing learning as active involvement, Bruner remains a prime proponent of 'discovery learning' (Hannum, 2006). Learners are presented with problems for which they are expected to *discover* ideas leading to specific solutions. Bruner supports this approach with his well-established theory of 'structure of knowledge'. He sees the basic structure of any subject consisting of ideas, concepts, principles, and relationships. It is when this basic structure is emphasised that learners are able to improve their intuitive thinking (Hannum, 2006).

From infancy, a child develops through three stages: an en-active stage characterized by direct manipulation of objects without internal representation; an iconic stage characterized by internal representation of external objects as

visual images/icons; and a symbolic stage characterized by representation of objects through words, formulas and other symbolic mechanisms (Hannum, 2006). The belief is that, as children pass through each of these stages growing up, the process of teaching and learning is likely to be successful if designed to line with those characteristics in mind. This contention confirms 'learning' as an active process in which learners are directly involved or engaged. This way, cognition becomes a natural process, depending on the environment. The child develops well in a stimulating environment, but not so well where the environment is stark and restrictive. Therefore, the purpose of instruction is to create an environment in which one actively discovers and creates knowledge.

### **The phenomenon of play in early child development**

Back in the 1960s Bruner made a famous statement that shocked the educational fraternity (Hannum, 2006). He stated that any child could learn anything if it was taught in an intellectually appropriate fashion. As already noted, for him, any child can understand complex concepts if they are presented in the mode of representation corresponding to his/hers. This is where 'play' becomes the most appropriate platform for learning in early childhood. Nearly all subjects are learnt through and during play as part of fun.

According to (Hannum, 2006), play enhances every aspect of child development thereby acting as a window to the world. For example, depending on context, there are specific activities in play that lay the foundation for logical, mathematical thinking, scientific reasoning, cognitive problem solving and social/emotional self-regulation (Pellegrini, 1987); and such activities in play foster creativity, innovation and flexibility in thinking. There are many possibilities in play as there is no right or wrong way of doing things. In 'pretend play', children develop various social skills, including the following, among

many: communication, turn taking, perspective taking and social problem solving (persuading, negotiating, compromising and cooperating). In this case, they create ideas about their world and share them with one another. They establish a culture and a social world with their peers. Play allows children to make sense, and sometimes nonsense, of their experiences and discover the intimacy and joy of friendship (Sawyer, 1997).

According to Kalliala (2006), early childhood 'play' and 'learning' go hand in hand the two stimulate one another. There are dimensions of learning in play and vice-versa (Olander, 2013). *Effectively, this implies that children do not play in order to learn, although they learn while playing.*

*The ability to play is one of the principal criteria of mental health. In fact, creative play is a central activity in the lives of healthy children: helping them to weave together all the elements of life as they experience it. It allows them to digest life and make it their own (Sawyer, 1997). Creative play is like a spring that bubbles up from deep within a child; refreshing and enlivening. It is a natural part of the make-up of every healthy child (Almon, 2003). The child's love for learning is intimately linked with a zest for play. Whether children are working on new physical skills, social relations, or cognitive content, they approach life with a playful spirit. Such is the very nature of play.*

### **Possible lessons for Zimbabwe from outstanding ECD models**

Literature shows a plethora of exceptional experiences from Canada, Sweden and even the United Kingdom that can provide lessons for Zimbabwe. The country has already learnt a lot from these countries and literature continues to show that a lot more is still to be learnt from the same countries in America and Europe, and perhaps other regions (Kwaira, 2014).

From Canada and the United Kingdom, literature shows Zimbabwe learning a lot relating to programme design, particularly from Canada during the late 1990s. From the latter, Zimbabwe inherited a lot at independence in 1980 and over the years, much of the human resource base has continued to benefit from that system in terms of professional development (Kwaira, 2014).

Today, Sweden offers a lot in the area of curriculum and program design in relation to play equipment and related materials. Literature shows Sweden being a leader in these areas (Olander, 2013). There is also evidence showing how curriculum at ECD level is an effective vehicle to handle environmental issues through education for sustainable development (ESD).

Closer home, South Africa seems to have something worthwhile for Zimbabwe. Several researchers in that country have come across massive international evidence showing how appropriate investment in early childhood positively impacts upon national health, education and socio-economic outcomes, resulting in significant benefits to society. Taking from science of early child development, they have become aware of the value of a strong foundation in early childhood as the basis for responsible citizenship, economic prosperity, healthy communities and successful parenting of subsequent generations. Warning of the danger of a weak foundation seriously undermining the social and economic vitality of the nation, they recommend ECD as a potential game changer (Ilifa Labantwana, 2014). Following these observations, they have come up with an '*Essential Package*'; a mechanism designed to standardize the provision of ECD services and support in South Africa. Based on the premise that all children, including the vulnerable, need access to certain basic support if they are to reach their full potential; it is this package that Zimbabwe could find interesting. In essence, this package promotes the idea of giving children a good

start in life through access to five basic essential services: nutritional support, primary level maternal and child health interventions, social services and protection, support for their primary caregivers, and stimulation for early learning.

### **International views justifying investment in ECD programmes**

The importance of ECD for social development and national productivity is now recognised as a national priority at the highest levels of most governments. Increased treasury funding, national diagnostic reviews of ECD, national development plans, and the commissioning of new ECD policy proposals in most countries; all provide evidence of the prevailing political will to invest in ECD. In Zimbabwe, such a level of commitment on the part of government regarding the status of ECD has been demonstrated by its inclusion and projection in the recently introduced Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIM-ASSET). Investment in education has been recognised as a primary route to reducing poverty and inequality in society (Government of Zimbabwe, 2013). Emphasis on ECD has been based on the premise that 'the importance of early childhood development learning starts in infancy and continues throughout life'. Early learning begets later learning and early success breeds later success, just as early failure breeds later failure. Success or failure at this stage lays foundation for success or failure later in life (Almon, 2003).

In terms of return on investment, studies have shown focussed investment into ECD yielding an “extraordinary return, far exceeding the return on most other investments ...” (Rolnick & Grunewald, 2003. pp. 6-12). Investment in ECD breeds economic success, which in turn becomes the basis for a reduction in poverty and inequality. Some of these sentiments were actually shared at an

international symposium hosted by the World Bank during the period September 28–29, 2005, in Washington, D.C. This symposium was the third in a series of conferences by the bank, focusing on the importance of investing in ECD as the starting point for human development (Mackie, 2012). Evidence is solid; economists, political scientists, neuroscientists, and social scientists have substantial data proving that programs which promote the growth and development of children (0–6 years) are the *best* investments for developing the human capital necessary for economic growth. On the basis of available evidence, economists now assert that investment in ECD is the most powerful investment a country can make, with returns over the life-course many times the size of original investment. ECD programmes foster and promote the quality of human capital (Mackie, 2012). The competencies and skills fostered through ECD are *not* limited to cognitive gains, but also include physical, social, and emotional gains; all of which are determinants of health over the life-course (Carneiro & Heckman, 2003). This is exactly why investing in ECD by any country makes economic sense (Mustard, 2006).

### **The essence of D&T in relation to play within the context of ECD**

Essentially, D&T is about problem-solving. Learners, workers and people in general are presented with real life problems for which they are expected to innovatively seek solutions. Putting theory into practice, one is considered flexible in thinking, open minded, resourceful, and above all, creative enough to apply or manipulate materials and equipment in problem-solving. It is interesting to note that this situation is comparatively similar to a scene when children are naturally engaged in play; solving problems in their own way and producing a mirror of real-life situations through imitation. According to Almon (2003), children naturally imitate grown-ups and by so doing inspiring their play and learning into a complex combination. This helps to prepare them

into active critical thinkers who are able to deal with real problems innovatively and creatively. Almon (2003) groups all these abilities under 'social, emotional and intellectual benefits of play' that have to be promoted during ECD. Supporting her position, she refers to Sara Smilansky, an Israeli researcher who studied children at play in Israel and the United States. Defining '*dramatic play*' as taking place when a child pretends to be someone else and '*socio-dramatic play*' as those times when two or more children cooperate in such role-playing, Smilansky concludes:

“Socio-dramatic play activates resources that stimulate emotional, social, and intellectual growth, which then affects the child's success in school” (Smilansky, in Almon, 2003, p. 25).

### **Methodology and research design**

This study was conducted through a document analysis of various documents: starting with a focused analysis of the 'Art and Craft' section of the 1993 handbook, '*Curriculum for the Child – Early Childhood Education and Care Programme – Zimbabwe*' as already noted in the introduction. More documents were sourced through the internet. Analysis of all relevant documents was done with the aid of a check-list designed to determine the following: forms of play; forms of play promoted through ECD; forms of play directly related to D&T in terms of benefit.

### **Discussion of results and findings**

In line with the research questions addressed by this study, the results and findings were presented under the following thematic issues:

- ❖ Forms of play manifesting in early childhood
- ❖ The importance of individual forms of play to ECD
- ❖ Abilities and related technical skills in line with D&T education

### **Forms of play manifesting in early childhood**

From literature, several forms of play were identified, chief among which were those by Ginsburg (2007) comprising the following: *unoccupied play, solitary play, onlooker play, parallel play, associative play, social play, motor-physical play, constructive play, expressive play, fantasy play, and cooperative play*. According to Ginsburg (2007), as children grow and develop, their play evolves and some of it is associated with, but not restricted to, specific age groups. These views are strongly supported by findings in Sweden by Olander (2013), where she discovered a lot of learning occurring during playful activities involving various age groups.

### **The importance of individual forms of play to ECD**

A review of literature showed that all the forms play outlined by Ginsburg (2007), are important to child development. According to Almon (2003), the ideal situation during childhood is to have a child growing and developing to the full, with ECD taking advantage of such a foundation to support and sustain the whole process. For Almon (2003) and Young (2007), a complete human being results from full growth and development. *Growth* refers to increase in body size while *development* is the gain in various abilities and skills under the following categories: physical, social/emotional, cognitive/intellectual, and communication/speech.

### **Abilities and related technical skills in line with D&T education**

In D&T, the complete human being referred to by Almon (2003) and Young (2007) is the most ideal for a situation demanding problem-solving abilities and skills. This is the kind of individual expected to be innovative, flexible in decision-making, open minded, resourceful and creative (Stables, 2014).

Taking from Almon (2003) and Young (2007), Taguma et al. (2013) elaborate on the major areas of development as follows:

*Physical development* - in D&T, the application of gross and fine motor skills is important for the manipulation of equipment (technology) to fashion materials into useful gadgets. *Dexterity* is the key word and with the right teaching, one ends up being dexterous as designer, technologist, or engineer.

*Social/emotional development* - referring to one's identity/self-image, this form of development is important to the individual and society. It enables one to live in harmony with other people in society. With D&T being a problem-solving activity, socialisation enables one to consult and discuss with members of given communities in order to solve their problems. Moral development is an important part of social development in which children observe other people's behaviour, gradually developing a sense of right and wrong. Through reinforcement, the former is promoted while the latter is discouraged.

*Intellectual/cognitive development* - involving the acquisition of skills relevant for understanding, this form of development has to do with 'memory' and 'concentration' of thinking. In D&T, one needs to learn, think and develop ideas that are relevant to specific problem-solving activities. This is one area where an adult's performance is strongly influenced by exposure in terms of experience during childhood, hence the need for early intervention where necessary.

*Communication/speech development* - learning to communicate with other people starts very early in life and continues into adulthood. According to Taguma, et al. (2013), babies communicate even before they are born. For example, a baby in the uterus responds to loud noises or distress by moving.

Such communication continues into adulthood with increasing sophistication, depending on level and purpose. In D&T, one needs to communicate effectively in order to share ideas during problem-solving.

### **Recommendations for further research**

Given the outcome of this study, there seems to be a critical need for further research in order to determine and establish the following, among other issues:

- the nature of methodologies that could be used to promote instruction in D&T related technical subjects through play, from early infancy to early adulthood
- specific psychomotor skills could be promoted through play at specific age groups, in line with the principles of D&T education
- ways to nurture innovation and creativity noted in gifted children during problem-solving related play at various stages of early childhood and inculcate them further to higher levels of education and training through D&T
- the role parents and family could play to promote problem-solving related abilities in children during infancy
- means in which home, the ECD centre, school and college/university could collaboratively work together in order to harness the benefits of play at higher levels of education and training in relation to D&T Education.

### **Conclusion**

The results and findings of this study clearly showed the phenomenon of play manifesting technical skills in a wide range of forms. As children grow and develop, their play evolves and some of it is associated with, but not restricted to specific age groups, ranging from *unoccupied play in infancy up to cooperative*

*play* in early adulthood. In a way, this suggests the importance of play in child development, where it forms the basis for all learning. Apparently, there has been adequate evidence of all abilities and related technical skills generated through play being in line with the principles of D&T. In this case, such skills and abilities have been found contributing to the growth and development of the complete human being, expected to function fully, physically, socially, emotionally and intellectually. This conclusion has several implications on the Zimbabwean education system, with specific reference to the teaching and learning of technical subjects, given the advent of a technological information society. Activities in these subjects now need to be geared towards problem-solving, where one is expected to be resourceful and creative in putting theory into practice.

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