



ASSESSING POTENTIALS OF INTEGRATING EDUCATIONAL CD-ROM IN EARLY CHILDHOOD EDUCATION IN TANZANIA: CONSTRUCTIVISM APPROACH VIEWS

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Abstract:

Unlike other stages of human development, early childhood is the critical stage that forms the foundation for children's future wellbeing and learning ((UNICEF, 2001). Early Childhood Education helps a learner to develop skills, knowledge, personal competence and confidence and a sense of social responsibility. Information Communication and Technology in Early Childhood Education is significant as it supports and strengthens early childhood education practice. The present study is interested in assessing the integration of ICT particularly educational Compact Disc ROM as modern tool in Education. The study bases on the potentials brought by Educational Compact Disc. The researcher went through different literature on the potentials by linking them with the Constructive approach of learning. In the study it was found that the application of CD-ROMs was used more in language development, development of literacy skills as well as in the expansion of language vocabularies. However, changes in education were also seen that is from traditional mode of teaching into new model of teaching which is mostly supported by the Constructivism theory of learning. Thus, Educational CD-ROM as multimedia technologies is potential in creating high quality learning environments in early childhood education.

Keywords: early childhood, early childhood education, educational CD-ROM

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Introduction

Early childhood education refers to educational programs and strategies geared toward children from birth to the age of eight (Shilpa and Sunita, 2013). Early Childhood Education according to Msangi, (2012) is a kind of education which encompasses all the domains that are physical, Social, intellectual and emotional. In Tanzania Early Childhood Education is part of the formal education and vocational training system. The education System in Tanzania ranges from pre-primary through primary, ordinary secondary education level to advanced level secondary education with the structure of 2-7-4 and 2 (years) before the 3+ higher education structure. The formal structure mentioned above, the Early Childhood Education cycle two years in which there is no examination but for promotion purposes and a preparation for formal schooling (MOEC; 1995). Unlike other stages of human development, early childhood is the critical stage that forms the foundation for children's future wellbeing and learning (UNICEF, 2001)

The Early Childhood Education in Tanzania is provided by non and Governmental Organization, however a study on "The Situation Of Early Childhood Education In Tanzania The Case Of Temeke District" by Binagi, Kainamula and Kweka (1999). In their studies, they found three categories of ECE these include; owned by religious institution, owned by government or public institutions and lastly Political parties and affiliated organization like CCM, WAZAZI and NCCR. In Tanzania according to Mtahabwa and Rao (2010), Early Childhood Education is provided in different names like Day Care Centers, Nursery Schools and kindergartens whereby their activities do not match. The present study therefore, concentrates on all categories in assessing the potentials of integrating educational Compact Disc in children learning.

Conceptualization of the Term CD-ROM and Educational CD-ROM

Compact Disc is an Optical disc storage device, a small, round medium made of molded polymer (close in size to the floppy disk) for electronically recording, storing, and playing back audio, video, text and other information in digital form (Nwana, 2008) The Compact Disk can be categorized into four format these include; Compact Disc audio, Compact Disc - Read Only Memory, Compact Disc – Interactive and Compact Disc – Read Only Memory Extended Architecture. Of all the mentioned formats, CD-ROM is a versatile medium capable of interactive use and has the ability to store sound files graphics, and video sequences

The Compact Disc – Read Only Memory (CD-ROM) technology is an integral part and a product of Information and Communication Technology (ICT). CD - ROM is an instructional Technology since it is a multimedia technique used in the transmission of specific content to the learner (Nwana, 2008). Multimedia means there is involvement of multi- platform tools which allow the use of more than one media, for the case of CD- ROM according to Bokhari and Ahmed (2013), a variety of media may be presented like sound, still/ animated pictures, text, and computer data, although it can be in interactive or non-interactive format, audio or video or combination of the two. Furthermore, Educational CD-ROMs are teaching device which offers learners an opportunity to acquire and practice special skills (Bakti, Orosz and Szabo, 2005). The Educational CD-ROMs are useful to teachers, students, home-schooled students, as well as curriculum and exhibit developers

Potentials of Educational Compact Disc (CD-ROM) in Early Childhood Education

For the case of early Childhood education, Educational CD-Roms, referred to as "edutainment" software, tend to prominently feature animated cartoon-like characters created specifically for a learning series, or characters popular from other context. These characters are displayed on bright, colorful packaging for the aim of catching the eye of the child on the supermarket or bookshop shelf (Gibbs and Robert, 2003). According to Downes et al, (2001) Educational CD-ROM packages are compilations of games, quizzes and puzzles aimed at enhancing the preschool child's learning skills like increasing concentration and improving left-right orientation. The packages offer the child interactions as well as enriching young child's experience in learning.

Early Childhood Education help a learner to develop skills, knowledge, personal competence and confidence and a sense of social responsibility Leeuwen (2009), those can be reached with the help of using ICT tools , educational Compact Disc- ROM in particular, in enhancing and improving the quality of education MoEVT (2007). Due to the improvement of science and technology in the world, it is impossible to come across an educational institution at any level without an ICT presence; it was contented by Kalas (2013), in a study on "*Integration of ICT in Early Childhood Education*". Brooker (2003) cited in Bolstad (2004), presented that early years are very significant for appropriate use of technology, with the reason that , it is the age in which there is less pressure in meeting strict targets. It gives the child more opportunities to experiment with child- centered practice. Educational CD-ROM is a significant resource for meaningful, active, sensory, and relevant instruction which has different functions in children learning, for instance in the study by Greenfield (1993) on "*Multimedia:*

Educational CD-ROM and Videodisk Choices abound” the study contents that, the CD-ROM players help in the development of auditory development in children, the auditory perceptual skills are developed which help a child to learn how to speak this is very significant in learning second language. In addition, Segers and Verhoeven (2002), in the study on *“Multimedia Support of Early Literacy Learning”*, in this study CD-ROM were used in the programme, positive results were obtained as the enhance vocabulary learning in children.

Furthermore, a work of CD ROM on children literacy can be seen in the work by Holmes (2008), in the study on *“Evaluating the use of the Catch up CD ROM in a home environment”*. The study context was in UK where by children who have difficult in reading use the Catch Up CD ROM 2, the findings showed that the children enjoy playing the CD ROM, they believe that it has enabled them to make some progress in their literacy abilities. Also, parents believe that the CD ROM’s approach to learning is effective. CD ROM is seen in influencing; feedback, motivation, flow, metacognition, and zone of proximal development. Moreover, educational CD-ROM in Bakti, Orosz and Szabo (2005) in the study on *‘E-utopias: Cross-Curricular Teaching Through Multimedia CD-ROMs in Primary Education’*, the study has shown significant of educational CD-ROM in children learning these include; educational CD-ROM offering possibilities of variety of pair, group and class activities, develop skills on working in a collaboration and in team work, encourage autonomous learning in children, enhance cross-curricular and cross – cultural aspects of learning and lastly educational CD-ROM demonstrate that, learners must learn to learn. Furthermore, Educational CD-ROMs are also significant in children development like psychomotor and cognitive development, this was reported by Yurt and Kalburan, (2011) on *“The use of Interactive CD-ROM in early Childhood education: Teachers thoughts and practice”*

An Assessment of the Potentials of Educational CD-ROM Integration in Early Childhood Education

As far as the study is concern on ‘Assessing the potential of integrating educational CD-ROM in early childhood education, it can be said that; the educational CD-ROM is a teaching technology, a modern technology which provide support in children educational arena in different areas depending on the needs or on the aim of the use. In teaching – learning process, the educational CD ROM has made the learning enjoyable practices by building learners’ interest in learning and enhancing ones abilities. From above literatures, it can be pointed out that the most potential of integrating educational CD-ROM is on the pedagogical strategies. According to MacNaughton and Williams,

(1998), Pedagogical strategies are practices which support learning , in Fisseha (2011) these include, active learning, collaborative, creativity, intergrativity and evaluative. These pedagogical strategies focus much on learner to learn, as the accelerate and improve learning by changing work habit (Adnase and Ronning, 1998) and build high motivation in learning (US Congress 1995; Allen, 2000; Combs, 2000; Diggs,1997; Sherry, 2000). Also, literatures have contented much on the teachers integrating educational CD-ROM for language development, development of literacy skills as well as in the expansion of language vocabularies.

Change of Scenario in Early Childhood Education and Constructivists Approach

Constructivism approach in education context refers to approach, where learning is an active process in which learners construct meaning by linking new ideas with their existing knowledge" (Naylor & Keogh, 1999). The Constructivism approach hypothesizes on individual ability of making sense to the information one perceives, and meaning "construction" from that information (Bhattachrjee, 2015). According to Good and Brophy (1994), therefore constructivist learning involve; Learners construct their own meaning as they are not passive receptacles, new learning is builds on prior knowledge, Learning is enhanced by social interaction that is learners have the opportunity to compare and share their ideas with others, learning occurs as learners attempt to resolve conflicting ideas and meaningful learning develops through "authentic" tasks.

The literatures above support the constructive theory, the integrations of Educational CD- ROM as an ICT tool in early childhood education transforms traditional paradigm into new paradigm of learning and a shift from teaching to learning (Senapaty, 2005). According to UNESCO (2002), the two paradigms differ in terms of learning processes. The traditional paradigm learning process has the following characteristics;

- learning is hard, learning is basing on a deficit model of the learner;
- Learning is a process of information transfer and reception;
- Learning is an individual/solitary process;
- learning is facilitated by breaking content/instruction into small isolated units and
- learning is a linear process.

On other hand, the characteristics of new paradigm of learning process as supported by constructivists approach (Chen, 2003) include;

- learning is a natural process;

- learning is a social process;
- learning is an active and not a passive process;
- learning may either be linear or non-linear;
- learning is integrative and contextualized, learning is based on a strength of student abilities, interest, and culture and
- learning is assessed through task completion, products, and real problem solving of both individual and group efforts.

Having seen the above characteristics of the paradigms of learning processes, it can be said that the traditional paradigm is against constructivism approach emphasizing teacher - centered approach. By integrating ICT tools, the paradigm shifted into learner - centered approach, where by a teacher is assisting pupils to become good learners, facilitator in learning, knowledge guide, knowledge navigator and a co learner rather than knowledge transmitter (Newby et al., 2000). On the other side, a learner is responsible for his or her own learning by seeking out, finding, synthesizing, and sharing their knowledge with others. Thus, ICT, particularly the integration educational CD-ROM in early childhood education, the image of the child is more emphasized by much listening to the child and change the role of a learner. That means, ICT enrich teaching, promote child focused in educational processes and interactive knowledge environment is enhanced (Senapaty, 2005). Generally, the above explanation gives the implication that, by integrating ICT the relationship between a teacher and a child is affected, without integration the relationship is far apart, while in the integration the relationship is closer in teaching and learning process. See the below figures adopted from Senapaty (2005) for more explanation:

Figure 1: Traditional Teacher Pupil Relationship

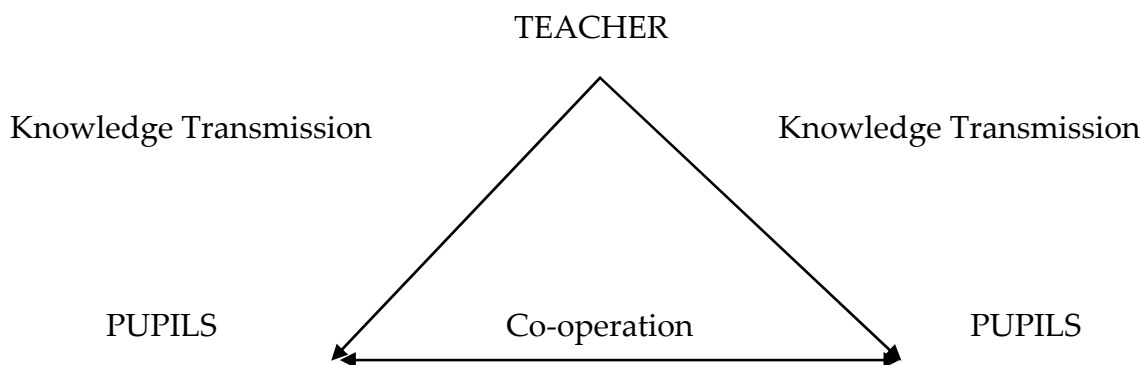
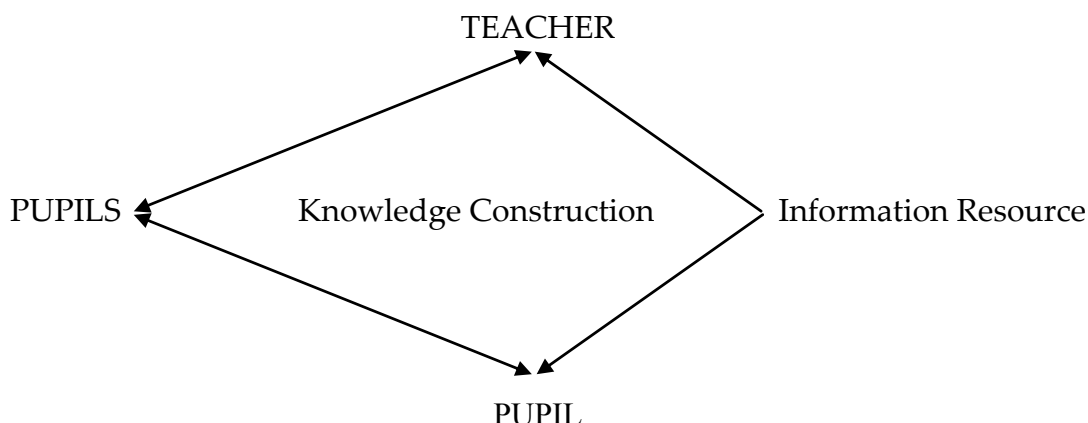


Figure 2: Teacher pupil Relationship in a new paradigm



The figure 1 above shows the relationship between children and teacher relationship in which the information are directly from teachers without ICT integration. However, the second figure as far as arrows can be seen, by integrating the ICT in education, there is interactivity between a teacher, a child as well as children interaction with the technology. According to Senapaty (2005), ICT in the second figure become as a tool for learning than the object of instruction or as the instructor in which children have chance of constructing knowledge from the environment, among themselves and with teachers. The relationship between a teacher and a child in teaching and learning process is very high compared to the first figure in which a teacher is the only source of information and not vice versa.

Conclusion

Educational CD-ROM as far as the present study is concern is a multimedia technologies and applications which are potential in creating high quality learning environments in early childhood education. Integrating Educational CD-ROM in early childhood education provides children with digital tools for learning and communicating and improving child outcomes in learning. According to the philosophy of Constructivism approach, in teaching and learning process the image of the child is the first thing to be considered then the content. The educational CD-ROM enhance children cognitive and social abilities, creates realistic learning context through its different media to different kinds of learners. It is a kind of educational technology as an alternative to traditional way of learning which dominated by teacher - centered approach, according to constructivism approach the education paradigm therefore shift into child - centered approach. In Constructivism approach the child is given chance to

construct ones idea from what is taught, and that affects teacher – child relationship to be closer for effective teaching and learning process

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