ASSESSING THE IMPACT OF INTEGRATION OF ICT ON ACQUISITION OF LITERACY SKILLS AMONG PRE-PRIMARY LEARNERS. A CASE OF NAROK SOUTH SUB-COUNTY, KENYA

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ABSTRACT

This paper discusses the Impact of Integration of ICT on Acquisition of Literacy Skills among Pre-Primary Learners. The world over, ICT in all spheres of life has created a social system which is driven by knowledge and powered by technology. This dominance of ICT puts the various education systems under pressure to use ICT in acquisition of literacy skills in Pre-primary education. Newton and Rogers (2001), in a study conducted in New York, asserted that due to the explosion of knowledge, educational institutions including schools cannot continue to transmit knowledge from the teacher to the learner or use the textbook as the only source of information. These findings affirm the fact that Pre-primary schools are therefore expected to promote the acquisition of knowledge and skills through the use of new technologies to ensure efficient, continuous and lifelong learning. Nut (2010), posits that global investment in ICT to improve acquisition of literacy skills in pre-primary schools has been initiated by many governments. In the United Kingdom, the government spend £2.5bn while New Zealand spends over $ 410 million every year on school's ICT infrastructure. Mikre (2011) posited that the successful integration of ICT in acquisition of literacy skills largely depends on the availability of ICT infrastructure and teachers' integration and embrace of ICT in literacy skills education. Aktaruzzaman, Shamim and Clement (2011) maintain that pre-primary teacher competency is another indispensable variable to ensure the successful use of ICT in the acquisition of literacy skills environment. Despite the availability of computer laboratories and media centres in various urban schools, teachers indicated various issues that impede the use and the integration of ICT in their literacy skills pedagogic activities. These findings confirm the fact that ICT is becoming increasingly important in our daily lives and in our educational system and therefore, there is a growing demand on educational institutions to use ICT to teach the skills and knowledge pre-primary learners need for the 21st century. In view of this, this paper will critically assess the impact of ICT on integration of literacy skills among learners in pre-primary schools in Narok South Sub County, Kenya.

Keywords: Information and Communication Technology, Integration, Pre-primary education, Literacy skills

INTRODUCTION

Pre-primary education is considered to be the period from birth to eight years (Worthman,2000). In the developing nations, pre-primary is defined as the ages between birth to six years (Eville and Mbugua,2001). Regardless of the differing definitions of pre-primary, UNICEF (2002), postulates that the increased interest in pre-primary education is encouraging especially when new technologies are embraced in the sector. Gulbahar (2007) asserts that huge educational investment has produced little evidence of ICT integration and use in acquisition of literacy skills in pre-primary schools. In a study on Sesame Street, Anderson, Huston, Schmitt, Linebarge and Wright (2001) showed how watching quality educational television in the pre-primary years can lead to long-term academic and social

benefits. The Malaysian government has begun to invest seriously in the early childhood education center education system to open a wider scope of ICT and create a dynamic ICT environment for learning (Granger, Morbey, Lotherington, Owston & Wideman, 2002). In order to become a technological literate country, learning institutions in Malaysia are integrating ICT into the early childhood education center curriculum to boost the literacy skills teaching and learning practices. These findings affirm the fact that ICT has been found as an effective tool to improve the literacy skills during the learning process. Pedagogical approaches are transformed through ICT integration in the instructional process in early childhood education center.

In most Sub-Saharan countries in Africa, most governments have introduced pre-primary education system which makes provision of using ICT in pre-primary literacy skills pedagogy. For instance, in South Africa, the policy prescribes for the use of ICT by all schools to improve and enhance acquisition of literacy skills which stipulates that all South African pre-primary learners must be ICT capable for the future (Bialobrzeska & Cohen, 2005). Furthermore, as part of the new social structure and the aspiration of making the South African Society an information society, computer laboratories with internet connectivity have been established in many urban schools to enhance and improve the quality of acquisition of literacy skills and to realize the national objective of the information society (Bialobrzeska & Cohen, 2005). In line with these assertions, Mikre (2011), in a study conducted in Ethiopia, reported that the rapid growth in Information Communication and Technologies (ICT) have brought remarkable changes in the twenty-first century.

In Kenya, Oketch and Asiachi (2002) posit that it is the kind of resources available that have great implications in what goes on in pre-primary schools today. Eshiwani (2003) states that the expenditure on instructional materials per learner and the management efficiency of material per pre-primary learner may boost pre-primary learners' literacy skills achievement. Similarly, Republic of Kenya (2013) holds that a new programme requires relevant and adequate ICT facilities. Even before integration, ICT physical facilities must be prepared and materials purchased to ensure successful activation of the programme.

ROK, (2013) asserts that Resource materials and facilities need not only be available but be in the right quantities. Teachers are frustrated and demotivated by Lack of resource materials and facilities. Keengwe and Onchwari (2008), posit that a teacher who has adequate and relevant teaching materials and facilities will be more confident, effective and productive. In the field of early childhood education center education, ICT is commonly related as how computers and the internet are best harnessed to improve the efficiency and effectiveness of the process of acquisition of literacy skills (Guha, 2003). In a study carried out in Machakos East District, Wachira and Keengwe (2010) indicated that ICT has had a transformative effect on education systems since it is a potentially powerful tool for extending educational opportunities and greatly facilitate the acquisition and absorption of knowledge with the usage of computer.

In Narok South Sub-County, the situation is no different where young children live in a world of interactive media. Republic of Kenya (2013) asserts that early childhood education center children are growing up at ease with digital devices that are rapidly becoming the tools of the culture at home, school, work and in the community. In other words, technology tools for communication, social networking and user-generated content have transformed the mainstream culture. In particular, these tools have transformed how parents and families manage their daily lives and seek out entertainment, how teachers use materials in the classroom with young children and communicate with parents and families and how teacher education is delivered and professional development. Despite these successes, integration of

ICT in early childhood education center acquisition of literacy skills still face challenges. Little is still not known about the extent to which integration of ICT has enhanced acquisition of literacy skills in Narok South Sub County.

DISCUSSION

Acquisition of Literacy Skills

The child's first and most important teachers in the preschool years are parents who awaken the children's language skills Savage and Egerton (2000). Many caregivers including parents may not actively set out to teach children how to read. Pappas (2013) asserts that a variety of experiences, trips and visits, books and pictures, stories told and questions answered all contribute to the reading ability, for they furnish that background of spoken language so vital to the development of vocabulary. Parents may provide a stimulating environment, read frequently to their children, engage in conversation and word play, respond to their children's requests for information and help their children begin to understand how language fits into their lives as postulated by Savage and Egerton (2000). Language is one of the activity areas where caregivers have the simple tools such as books and other reading materials to become involved and to make a difference. Senechal and LeFevre (2002) observe that of all school activity areas, reading has been found to be most sensitive to parental influences. Parents remain a major influence on their children's learning throughout school and beyond as they are the prime educators in a child's formative years. In Kenya, studies show that language skills still lag way behind compared to other areas. Uwezo (2011) In the Annual Learning Assessment done in Kenya by Uwezo(2011)found out that children in Kenyan pre-primary and primary schools are poorly grounded in language skills.

ICT Integration in Pre-Primary Education

Tay, (2011) states that Information and Communication Technology refers to the process of gathering, accessing and disseminating data for an enhanced learning (Tubbs, 2013). Acquisition of literacy skills has also been made simple through the application of electronic media and internet among others. The abbreviations ICT integration refer to a range of learning environments from a stand-alone computer in a classroom to a situation where the teaching is done by the computer through pre-packaged teacher-proof courseware. Tubbs, (2013) states that the production and introduction of calculators and computers in the acquisition of literacy skills system worldwide has helped in simplifying teaching in pre-primary education centers which has resulted in the promotion of national stability and economic survival. Some of the benefits of ICT include; increasing access to remote learning resources which would be difficult when solely relying on printed books, promoting collaborative learning, provoking pre-primary learners' curiosity by use of videos, television and multimedia computer software that combine the power of text, sound, colorful moving images and ensuring pre-primary learner-centered literacy skills learning (Tubbs, 2013).

Integration of ICT in acquisition of literacy skills has been a debatable issue bearing in mind that both developing and developed countries are bringing about acquisition of literacy skills reform with a clear focus on ICT integration in acquisition of literacy skills. Countries have been investing heavily in ICT in terms of money, expertise, resources and research to integrate technology in acquisition of literacy skills as smoothly as possible so that the classroom environment is made more conducive for enhanced acquisition of literacy skills. Forsyth (2012), asserts that the European Union (EU) promoted a strategic framework to improve the overall quality of life and to meet the challenges of globalization, ageing and ICT revolution.

The success of the strategy was made a reality by the integration of ICT in acquisition of literacy skills, since acquisition of literacy skills prepared future citizens to learn and use ICT in their day to day activities of life. An investigation by Forsyth (2012), explains that science teachers' perspective about ICT integration in acquisition of literacy skills in Pre-primary institutions has been emulated in the Science area.

This has influenced the science teachers to have a positive attitude toward integration of ICT in the acquisition of literacy skills process. Majority of teachers in high early childhood education center centers in Syria were interested in developing their ICT skills and knowledge (Forsyth ,2012) Although the study was carried out in a developed country and the focus was on the Science based subjects, the research focused on the teacher factors influencing integration of ICT in acquisition of literacy skills in early childhood education. Mumias Sub-county in Kenya has embraced Information Communication and Technology as an important component of a school's curriculum, a support tool for providing teachers and pre-primary learners with enhanced teaching opportunities in the whole range of school subjects notwithstanding the challenges.

Naseri & Elliot,(2011) postulates that in countries like Australia, USA and UK, the content of national curriculum statements provides clear evidence for this shift from the teaching of ICT alone to the integration of ICT as an important tool in the school curricular. Hennessy, Harrison & Wamakote, (2010) states that Western countries have reported up to 41% of integration of ICT in acquisition of literacy skills and this proportion remains substantially low in Africa, Kenya included. Makewa,(2013),asserts that Information Communication Technology (ICT) as an interactive media facilitates pre-primary learners' development of diversified skills for industrialization and a knowledge-based economy and goes a long way in allowing teachers and pre-primary learners to proceed at different paces depending on the prevailing circumstances. A major project in Pre-primary schools meant to equip over 200 pre-primary schools has been rolled out in Kenya, (The Ministry of Education,2010) with the aim of putting in place ICT infrastructure for use in the acquisition of literacy skills process through ICT.

Policy makers attest to the fact that Information and Communication Technology (ICT) integration takes place when teachers have knowledge on incorporating and using ICT to teach in the classroom (MoE, 2010) hence the pre-primary learners become engaged in using ICT as a tool to learn.

Teacher Factors in Integration of ICT in Acquisition of Literacy Skills

Schiller,(2003),states that teacher factors such as gender, educational experience, educational level, age and professional training influence the adoption of ICT in acquisition of literacy skills in young children. Teachers' preparedness to integrate ICT into acquisition of literacy skills is a key factor in the effectiveness of the technology and not by its sheer existence in the pre-primary schools (Jones, 2001). Teachers' attitude towards technology immensely influences the adoption and integration of computers into the acquisition of literacy skills.

Personal characteristics that influence teachers' adoption and integration of ICT into acquisition of literacy skills is relevant in enhancing syllabus coverage and pre-primary learners' academic performance (Russell and Bradley,2007). Teacher demographics such as gender, age, and acquisition of literacy skills experience affect the integration of ICT in acquisition of literacy skills in early childhood education center centers (Wheeler,2000).

Most research outcomes have reported there is more use of ICTs by young people compared to the older people. The older folks fear or lack experience to use ICT and feel intimidated

by the new technologies than the younger generation (Wheeler,2000). These findings attest to the fact that teachers' gender and ICT integration have been cited that female teachers have low levels of computer use due to their limited technology access, skill, and interest. The male teachers use more ICT in their acquisition of literacy skills and learning processes than their female colleagues. A study carried out in Australia by Markauskaite (2006) amongst 17 teachers, investigated gender differences in ICT experience and ICT literacy skills among first year graduate trainee teachers. A significant difference between males and females in technical ICT capabilities and situational and longitudinal sustainability was revealed by the study.

Kozma (2003) has pointed out that in Sub-Saharan Africa, cooperation and communication between pre-primary teachers, such as the exchange of ICT experience and mutual encouragement to use new media, has a positive effect on the willingness to utilize new media in the pre-primary classroom.

Oladosu (2012), in a study conducted in Lagos State in Nigeria, asserted that an important additional determinant of teachers' engagement in the use of new media in Literacy skills classrooms is their assertiveness in using technology. Pre-primary teachers with little confidence in using ICT in their work will try to avoid it. Oladosu further reported that many pre-primary teachers who were not using computers were doing so because they lacked confidence with, or were technophobic. Isaacs (2007), notes that lack of ICT competence is clearly a barrier to teachers' use of new media in classrooms. In Kenya, Lawrence and Veena (2013) asserts that the grade in which a pre-primary teacher teaches is possibly an important factor in explaining ICT use in pre-primary education. In Narok South Sub County, it is not clear whether teachers' characteristics and demographics such as level of education, experience in acquisition of literacy skills, ICT competency and exposure influence integration of ICT in acquisition of literacy skills.

Adequacy of ICT Resources and Acquisition of Literacy Skills

Adequacy of ICT resources and infrastructure remains major dynamic for integration of ICT in acquisition of literacy skills process in pre-primary education. A survey in the USA by the National Centre for Education Statistics (NCES) in 2000 using the Fast Response Survey System (FRSS), revealed that 99% of full-time regular public-school teachers had access to computers or the internet somewhere in their schools (Makewa, Meremo, Role and Role,2013).

In a study carried out in the Netherlands by Summak and Samancioglu (2011),it was noted that ICT infrastructure measures the perceived adequacy and suitability of the ICT tools such as hardware, software and peripheral equipment provided in the school. Another study carried out in Austria (Pelgrum,(2001) stated that ICT infrastructure refers to the availability of equipment, software, internet access and other similar resources in the school. These findings point to the fact that ICT resources and facilities in schools are designed and enabled in the direction of supporting continuous transformation and development of various acquisition of literacy skills approaches. Van Ark, (2011), conducted a research to determine and examine regularly occurring factors that affect the integration of the technology among the school teachers. A qualitative study among four school teachers was carried out to identify the factors. The findings reported by one of the teachers stated that the outmoded hardware limits the use of computers in instruction the teacher was unable to integrate technology into instruction due to the outdated and old hardware.

Kargiban & Siraj,(2009), noted that in Sub-Saharan Africa, the number of computers in schools in recent years or plans such as the teacher laptop initiative in South Africa and

Kenya to increase teachers' and pre-primary learners' access to computers is imminent. A study conducted in Mozambique by Balanskat (2007) indicated that effective use of ICT in pre-primary centers for acquisition of literacy skills would require the adequacy of equipment, supplies of computers and their proper maintenance including other accessories. Most of the rural areas in Mozambique do not have electricity and therefore one cannot even run a computer in the first place. Balanskat, (2007), posits that Mozambique does get electricity more than eight hours in a day due to lack of electric supply and this is a setback to the use of ICT in the country.

Integration of ICT in acquisition of literacy skills demands other resources such as computers, printers, multimedia projectors and scanners which are not available in all the pre-primary centers. In Kenya, physical mobilization and access to ICT infrastructure has been the first step towards Integration of ICT in acquisition of literacy skills (Gakuu and Kidombo, 2010). At the pre-primary level in Narok South Sub-County, expensive hardware and software as well as the high cost of communication and services restrict access to ICT (MoE, 2010). This coupled with lack of training for the teachers acts as limitations towards the

CONCLUSION

The School administration and management needs to be proactive in providing some useful information with which to evaluate effective preparation practices for acquisition of literacy skills. Most of the studies critiqued in the article point to the fact that the realization of integrating ICT in the acquisition of language skills is still wanting. The studies have focused on ICT inputs to the education process rather than outcomes, used data that is only loosely connected to the Literacy skills concepts being examined, or employed case-study methodologies from which it is difficult to determine causal relationships or generalize to other populations (Adre & Sullivan, 2008). The studies carried out have gaps in that there is much to learn about effective practices for school management in enhancing acquisition of literacy skills through ICT integration. In Sub-Saharan Africa, most studies seeking to school management and teacher efficacy has indicated that there is a relationship between self-assessments of preparedness and behaviors that affect pre-primary learning, including a willingness to try new instructional techniques, persistence in problem-solving, and levels of planning and organization. In Ghana, a study by Ajayi (2011) indicated that teachers who are prepared with instruments of teaching such as schemes of work, lesson plans, records of work and are competent in their delivery have the greatest impact on children's achievement could also inform the design of teacher training programs In Kenya, aspects of school management enhance pre-primary education centers and pre-primary learners' performance in literacy skills. Suffice to say is that integration of ICT integration in acquisition of literacy skills is way behind Narok South Sub-County, acquisition of literacy skills in pre-primary centers still experiences numerous challenges despite the fact that laptops were launched in the county.

RECOMMENDATIONS

The article has critiqued the key areas in integrating ICT in the acquisition of literacy skills in pre-primary level of learning. It is evidently clear that the concept of integrating ICT in the acquisition of literacy skill is still surrounded by challenges which should be overcome in order to realize its success. Therefore, the following need to be strengthened:

1. School management should provide ICT tools to pre-primary schools.
2. Organize workshops and guidance for pre-primary learners to adapt to new ICT strategies for learning different concepts in in Literacy skills subject.

3. Preparedness of teachers in integrating ICT in Pre-primary schools should be established.

4. Positive attitude is among the principal components of any pedagogical program aimed at improving pre-primary learners' performance in literacy skills using ICT.

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