

# Information Communication Technology (EkoExcel) effects on Professional Practice of Caregivers in Lagos State

ODEBOWALE, Ireti Tina Ph.D<sup>1</sup> and OYEDAPO, Philip Ibukun<sup>2</sup>

Department of Educational Foundation and Counseling Psychology,  
Early Childhood Education Unit, Lagos State University Ojo, Lagos  
Lagos State Nigeria

Email: [1iretiodebo@gmail.com](mailto:iretiodebo@gmail.com), [2ibukunp@gmail.com](mailto:ibukunp@gmail.com)

**Abstract:** *The study looked into Information communication technology effects (EkoExcel) on professional practice of caregivers in Lagos State. The participant this study are caregivers in public early childhood education centres in two local government areas in the state of Lagos. The study's sample consists of 200 caregivers in early childhood education centre from two Local Government Education Authority Lagos State. Simple random technique was use to select the respondents with teaching background regardless of gender, age, teaching experience and academic qualification. Two instruments were designed for the research title "Teachers' Perception on Information Communication Technology Use Questionnaire (TP<sub>o</sub>ICTUQ) and Rating Scale on 'Teachers' Utilization of EKOEXCEL devices scale (TUoEDS). The Cronbach Alpha and Split half of reliability was used to determine the reliability of the instruments and a co-efficient value of  $r = 0.88$  and  $0.77$  were obtained. Finding shows that there is a significant negative relationship between early childhood teachers' qualifications and utilization of EkoEXCEL device. The study recommended that government should give caregivers opportunities to actively engage in dialogue to explore and articulate their pedagogical approach to EKOEXCEL device in early childhood education.*

**Keywords:** Instructional Materials, Utilization, Information Communication Technology, Professional Practice.

## Introduction

The fast advances of Information Communication Technology (ICT) in recent times, has correspondingly revolutionized the educational sector into making teaching and learning flexible. Despite the challenges associated with ICT integration in education, ICT has provided flexibilities in teaching and learning. Most teachers leave teacher training institutions with limited knowledge of ways technology can be effectively used in their professional practice, in this age of digitalization, being able to effectively apply technology should be high on the list of what teachers at all levels of education should know and be able to do in any instructional transaction. There is strong evidence that technology may support teaching and learning when used effectively in particular circumstances.

Both information communication technologies in education and for education are two major categories that describe how using ICT been employed in education. technology used in information and communication (ICT) for education relates to the evolution of ICT specifically for teaching and learning purposes, whereas ICT in education involves the adoption of general ICT components in the teaching process, more specifically, frequently for the training of teachers in the use of technology for teaching (Ajlouni, 2011).

ICT is a broad term that refers to a number of electronic technologies, technological tools, and resources that are used to manage, create, store, and communicate information. Al-Munawwarah (2014) sees it as the combination using technologies gathering, preserving, and processing, communicating and delivering information. ICT is generally with significant implications for education, change, and socioeconomic development; it is seen as a force for growth and an instrument for empowerment.

ICT is a term that means different thing to different people. Almani, (2012) ICT is defined as a broad word that refers to any technology that facilitates the creation, manipulation, storing, transmission, and dissemination of information. Using ICT in education has been reported delivering fruitful outcomes by raising academic performance almost across the board Early Childhood Education is not left out.

ICT enhance education quality in a number of ways, including by raising learner motivation and engagement, making it easier to pick up fundamental skills, and improving teacher preparation. When properly applied, information communication technologies are also transformational instruments that can support the transition to a learner-centered environment. Schools employ a span of ICT tools to communicate, generate, transfer, save, and information management. The evolution of higher order thinking skills, the delivery of unique and creative ways for students to express their understandings, and the development of students' readiness to deal with ongoing technological change in society and the workplace are all benefits of teachers who are digitally literate and ICT-trained. The international benchmark, and Information communication technology competency framework for teachers, set by United Nations Education, Scientific and Cultural Organization (UNESCO) in collaboration with various industrial leaders and global subject experts, earmarked competencies necessary for teachers to teach effectively with the Information and communication technology usage. The framework stresses and focuses on teachers' competencies in ICT. Most importantly the willingness to use ICT to help learners become collaborative learners, problem solvers, and creative learners is through the efficient use of ICT. This, in turn, transforms students into effective citizens and members of the workforce towards a sustainable growth in this ever-increasing

era of Information Technologies. The framework to empower teachers is structured into three stages of successive teachers' development which intend to nurture teachers' perception in favor of using information communication technology in the classroom. In the act of accelerating the activation of teachers' perception on utilizing technologies of information and communication classroom instruction, there are stages involves which include technology literacy, knowledge deepening and knowledge creation(UNESCO, 2011).

Duffy and Jonassen (2013) the use of ICT tools in early childhood education will enable the construction of new and effective learning environments, which may expedite the pace of learning by children. Conventional educational techniques no longer give children all the skills they need to succeed economically in today's job. The Early School Educational processes will be revitalized by effective teaching and learning using information communication technology in our schools, and the children can look forward to enthusiasm.

Learning through information communication technology contributes to make learners' understanding of how to acquire abilities and knowledge by supporting the principles of a knowledge-based society (MoE, 2010). Additionally, learners can acquire skills for processing and presenting information in classroom settings by employing technologies for information and communication. Adam (2017), states that technology for information and communication can help children or students in understanding different curricula by fostering innovative thinking and enhancing intellectual capacity. Nowadays, Computer and information technology are taught in schools or other educational institutions as a subject for learning and experience.

Assessment is basically used to get an insight into a pupil's current knowledge. Current knowledge indicates that the pupil's knowledge base is always changing and judgments about a pupil's current knowledge will have to be made over a time interval. Assessment is the method used to identify, gather, and comprehend data regarding students' academic progress. To assess and measure student learning, a variety of instruments and methods are used. The value of assessment in enhancing student education in a classroom cannot be overstated.

Technology is supposed to engage in effective and efficient assessment of learning. Modern technology offers a broad range of tools that might employed in the classroom to greatly improve learning, reshaping the teaching and learning process in the process. By measuring students' learning regarding their performance in the classroom, technology can assist teachers. ICT, or information and communication technology, is now frequently used in assessments to develop assessment activities for students. Technology employed in information and communication can allow students access to grades or comments in addition to assisting in delivery or creation, which makes evaluation jobs easier to do. It is crucial that schools motivate themselves to increase their dedication to creating better assessment practices that can aid educators and pupils (Marina, 2015). The assessment, which is constructed using information and communication technology, can be taken up using numerous technical devices, including desktop or laptop computers, smart phones, iPads, etc., according to Geoffrey (2011) in his Teacher's Handbook on e-Assessment. Assessments that are based on technology used in information and communication can use a number of formats, including text, videos, photos, and sounds.

Lagos State Government in the year 2020 introduced the Eko Excellence in Child Education and Learning (EkoEXCEL) education programme to stakeholders in the education sector. Parents, school administrators, unions, quality assurance officers, and others were made aware of the EkoEXCEL's plans to use technology to assist teachers in streamlining their instruction and keeping track of students' progress. Governments announced that tablets with educational resources would be provided to teachers as working equipment. He claimed that teachers may be watched over using the iPads. Because it will be geo-referenced, the tablet is to help and monitor. It will establish their location's coordinates. The Lagos State Government also said that the tablet would allow instructors to teach students at their own pace. As a result, the instant you turn it on, as the head teacher or as someone who is watching, you see the teacher is inside so coordinates and what the teacher is teaching.

"Teachers are at the heart of successful learning," the board's chairman for universal basic education in Lagos State (LSUBEB) added. If we want to see greater student achievements, we must begin by constantly improving our organizational, leadership, and teaching methods. In other words, our literacy rate won't rise until teachers are equipped to teach pupils who were born in the twenty-first century. The EkoEXCEL approach would enable teachers to give pupils in public primary schools standardized instruction that adheres to global standards. The tablet is a technology that will support what they are teaching in the classroom, according to the Lagos State Government. The curriculum, lesson plans, and the way the teacher would cover each topic are all placed onto the tablet. Not only did the teacher retrieve the tablet, but she also left. There would be observers there to keep an eye on them. On this voyage, the Lagos State Government will collaborate with the neighborhood, the parents' forum, and the school-based management committees.

These contemporary technologies teachers may use this to develop assessments and communicate these activities to the students for whom they are intended. Then, according to the outcomes of the evaluation, the teacher can give the students their grades. Computers may be helpful in assessing the students' responses as well. In addition to assessing the responses, it can provide teachers and learners with comments on the caliber of the questions posed. ICT-based assessments are also utilized to evaluate students' various types of talents. Analyzing their advantages and disadvantages is also possible. There are many things that a computer is unable to analyze, but for the most part, technology proves to be a useful aid in completing jobs that would take a lot of effort and time for an average person to complete.

Information communication technology according to (Ikoh and Nwankwo, 2013) plays an important role in the teaching and learning in early childhood education. It is a powerful means of communication and education. Due to its interactive nature, it has the potential to meet the needs of providing practical ways of constructively directing their own learning activities and complete tasks in a way to meet their own interests and need.

There is little doubt that ICT plays a significant role in the everyday lives of people in these current times. The entire nature of our job and leisure time has changed Yelland claims that the use of ICT has a positive impact (2006). It affects many aspects of most children's daily lives because it permeates homes and society as a whole. Information and communication technology has the ability to change how education is provided as a tool (Fisher 2001). ICT may support diversification and individualization in education by making it feasible to adapt the subject matter's presentation and content to each student's unique background, experiences, and needs. Castle, (2009), opinion, that professionalism is vital in early childhood education industry. As experts in the field of early childhood education, it is our responsibility to ensure that our worthwhile efforts are acknowledged. One of the toughest occupations there is working with young children and their families. It's tough and emotionally draining most of the time. According to Watts (2009), an early childhood professional is someone who possesses the personality traits, academic credentials, and practical experience required to offer programs that support children's learning. Although demanding, what early childhood educators accomplish is actually fairly straightforward. Early childhood educators help create an atmosphere where kids may develop, learn, and feel protected while also acquiring the abilities and knowledge they'll need to succeed in the future. An early childhood professional is someone who has the knowledge to educate the public on child and family issues, according to Bredekamp and Goffin (2012). We should be able to inform people about the importance of early childhood so that they are aware of why the first five years are so crucial. They ought to be honored for the significant work they perform since what they do is crucial. It is critical that they are seen as experts in their industry. The early childhood education area has four primary standards or aspects of professionalism:

- i. Professional Knowledge
- ii. Competence
- iii. Dedication to the Moral Code
- iv. Personal Characteristics

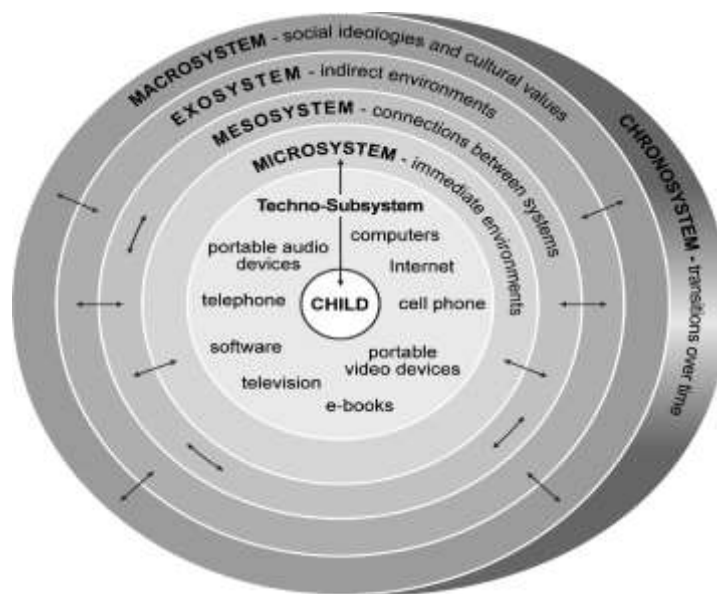
Serhan (2009) and Chai, Koh and Tsai (2010) also investigated pre-service teachers' beliefs about utilizing computer technology, as well as effectiveness of ICT courses. Wong and Gao (2009) concluded that programs for teacher education need to increase awareness of the benefits of integrating technology into student-centered learning approaches, and provide pedagogical knowledge related to student-centered learning as well as technology integration strategies. Thus, the research looked into on the perceived role using information and communication technology in the professional practice of early childhood education teachers in Lagos.

### **Theoretical Framework**

#### **Urie Bronfenbrenner Ecological System Theory**

Bronfenbrenner's ecological system model explores child's environment as regards quality and context; and how the surrounding environment assists or hinders child's incessant development. Ecological model attempts to explain individual differences in knowledge, development, competencies through guidance, support and structure of the society they reside in (Paquette and Ryan, 2001). In other words, theory of ecological systems provides an inclusive overview of environments impact on development through the placement of developing child as part of complex relations impacted by various levels of surrounding environment. These levels expand beyond the direct child's environment to incorporate other social environments that affect him/her (Bronfenbrenner, 1997). The importance of Bronfenbrenner's model is that he underscores the significance to consider all aspects of children's environment where he weighed great importance to the nature of relationships inside and between broader socio-cultural contexts and their impact on children's development. Therefore, Bronfenbrenner (1979, 1992) suggests that the child is the centre of five overlapping environmental systems and is influenced by the nature of these experiences and interactions related to each one of these levels. Microsystem is the most influential on child; it highlights the relationships between the child and immediate environments in which most of his interactions and relationships occur. Most important of these environments are child's family, peers, school, neighbours, neighbourhood, playgrounds and the like. It follows that Microsystem comprises settings where individual lives and spends nearly always; thus, most researchers focused on this system (Bronfenbrenner, 1993). Ecological model has four systems where people, in Microsystem have strong impact on child, i.e. if the relation between child and people, in immediate environments, break down, this affects child's ability to easily explore the parts of his environment (Paquette and Ryan, 2001). Fundamentally, this model assumes that the child's development is a result of ongoing and mutual interactions between the child and Microsystem contexts. In this context, Dokett and Perry (2003) argued that 'children exist within a web of meaningful social relationships; what is important to them and what they know derives largely from the interactions within these relationships'. The second level is Mesosystem which indicates to the network of relationships and interactions between immediate environments in Microsystem. This system affects child's development indirectly (Bronfenbrenner, 1979). For example, difference in perspectives between teachers and parents as regards child's teaching. Moreover, children discarded by parents might find it difficult to develop positive relationships with others, or faces difficulty in school. The Exosystem refers to social settings that affect the child's immediate environment settings. For example, parent's duty station, mother's job, pressure of job on parents, salary, school curriculum and educational policies. Finally, Macrosystem refers to social ideologies, overall cultural values or extended social structure where the individual lives. According to Bronfenbrenner (1993), it comprises cultural values and belief systems such as 'resources, hazards, lifestyles, opportunity structures,

life course options and patterns of social interchange'. The following figure provides more details of Bronfenbrenner's ecology model.



#### The Ecological Techno-subsystem (adapted from Johnson & Puplampu, 2008)

Most recently, Johnson (2010) suggested ecological techno-microsystem. This model refers to the utilization of various ICT tools such as (computer, Internet and camera) in immediate environments such as school and home. As evident in the following figure, Ecological Techno-Microsystem emphasizes the significance that ICT in the strengthening of children's development in ECE, and suggested that the child's social, emotional, cognitive and physical growth is an outcome of ongoing and mutual interaction among the child's characteristics (bio-ecology) and a wide set of ICT tools (techno-subsystem) in microsystem contexts (Johnson, 2010).

Technology for information and communication has been widely accepted is a crucial component of all professions. It has grown into world-class standard in any organization including institutions of learning regardless of the level because of the significance. However, the employing of ICT in the classroom requires competencies on one of the teacher and has indeed made the profession more challenging experience and retained knowledge for a long time. Teachers need to actively participate in using ICT also, to teach pupils using smart phones or other devices for learning during class time. Contrary to popular belief ICT has play a vital role in the life of the pupils, there is still exists a gap in the literature on the effective utilizing ICT in instructional materials, assessment and evaluation of pupils in the classroom. Thus, this study therefore investigated on the effective use of EkoEXCEL device on the assessment and evaluation of primary school pupils in Ojo and Badagry Local Government Education Authority.

#### Hypotheses

**H0<sub>1</sub>:** There is no significant difference between early childhood teacher's gender and perceived role of EkoEXCEL device.

**H0<sub>2</sub>:** There is no significant relationship between teachers' qualification and utilization of EkoEXCEL device.

#### Methodology

The research design used in the study was a descriptive survey. The participants in this study are caregivers in public early childhood education and development centres two Local Government Areas in the state of Lagos. The two local governments are Local education authority for Ojo and Badagry local education authority government which have 627 and 695 teachers respectively. The study's sample consists of 200 caregivers in public early childhood education 2 centres from two Local Government Education Authority Lagos State. The simple random technique was employed to select the respondent with teaching background regardless of gender, age, teaching experience and academic qualification. There are no preferences set by the researchers as long as the respondents come with teaching background especially in public primary school, as the researcher randomly selected 20 public early childhood schools, and 10 teachers each will be selected from the schools. Two instruments was designed for the research title; Teachers' Perception on Information Communication Technology Use Questionnaire (TPIoCTUQ). 10 questions were related to teachers' perception on the use of EKOEXCEL in the teaching and learning. This section is made of four items on a four point Likert scale (Strongly Agree, Agree, Disagree, and Strongly Disagree) and Rating scale on Teachers' Utilization of EKOEXCEL devices scale (TUoEDS). This section is made of four items on a four response scale of 4, 3, 2, and 1 (very high (4), high (3), fairly used (2) and rarely used (1) respectively). The CronbachAlpah techniques was used which obtain reliability co-efficient of  $r=0.88$  on TPUoICTQ. The Split-Half techniques as featured in SPSS was applied to acquire reliability co-efficient of  $r=0.77$  on TUoEDS. Inferential statistics of t-test and Pearson Product Moment Correlation Coefficient (PPMC) was employed to test the hypotheses at a significance level of 0.05.

#### Results

**H0<sub>1</sub>:** There is no significant difference between early childhood teacher's gender and perceived role of EkoEXCEL device.



**Table 1:** Summary of independent t-test showing the difference between early childhood teachers' gender and perceived role of EkoEXCEL device

Variable	Gender	N	Mean	Std.D	T	Df	Sig.	Remark
Perceived roles of EkoEXCEL	Male	72	15.083	1.184	17.644	185	0.000	Significant
	Female	115	9.765	2.378				

Table above shows that there is a big disparity between early childhood teachers that are male and female on perceived roles of EkoEXCEL devices ( $t=-17.64$ ;  $df=185$ ;  $P<0.05$ ). This implies male teachers have higher mean score in their perceived roles of EkoEXCEL (15.08) than female early childhood teachers (9.77). Therefore, the null hypothesis 1 is rejected.

**H0<sub>2</sub>:** There is no significant relationship between teachers' qualification and utilization of EkoEXCEL device

**Table 2:** Summary of Pearson Product Moment Correlation showing relationship between teachers' qualification and utilization of EkoEXCEL device

Variable	Mean	Std.D	N	R	Sig	Remark
Qualifications	1.781	.0605	187	-0.844	0.000	Significant
Utilization of EkoEXCEL	31.294	7.500				

Table above shows that there is a significant negative relationship between early childhood teachers' qualifications and utilization of EkoEXCEL device ( $r=-0.84$ ;  $p<0.05$ ). This implies that teachers' qualifications have no correlates with their utilization of EkoEXCEL device, probably this might be reason that EKOEXCEL device is compulsory for all the use of instructors in the classroom irrespective of their qualification, hence, the null hypothesis 2 is rejected.

### Conclusion

This study investigated perceived role and utilization of information and communication technology in the professional practices of early childhood education using a descriptive survey research design. The research was on Urie Brofenbrenner's Theory of Ecological Systems and according to the findings, the following conclusions were reached. There is a notable disparity between early childhood teachers that are male and female on perceived roles of EkoEXCEL devices. Lastly, there is a significant negative relationship between early childhood teachers' qualifications and utilization of EkoEXCEL device.

### Recommendations

1. Teachers should communicate and utilize EKOEXCEL device effectively with their pupils to extricate fear that may show up amongst them.
2. Teachers should help to create opportunities for young children to understand and appreciate the benefits of visual images and graphics in knowledge which are part of their everyday experiences.
3. The educational resource centers should join hand with state Ministries of Education to create awareness about EKOEXCEL device and the usefulness to the teachers. Also, both parties should organize workshops and seminars for in-service teachers irrespective of their gender, experience and qualification on the application of EKOEXCEL device for effective delivery of instructions.
4. Government should give teachers opportunities to actively engage in dialogue to explore and articulate their pedagogical approach to EKOEXCEL device in early childhood education.

### References

- Adam, T. (2017). The value of using ICT in the education of school students with learning difficulties. *Education and Information Technologies*, 22(6), pp. 2711-2726.
- Ajlouni, K.I. (2011). The impact of using the KidSmart program on facilitating children's access and use of ICT tools according to Jordanian public kindergarten teachers' viewpoint.(Report). *Education*, 132(2), pp. 241.
- Almani, A. (2012). International Research Journal of Arts and Humanities, "An Evaluative Study of Information Technology Implementation at Secondary Schools," 40(40), pp. 43-52.
- Al-Munawwarah, S. F. (2014). Teachers' perceptions on the use of ICT in Indonesian EFL learning Context. *English Review: Journal of English Education*, 3(1), pp. 70-80.
- Bredenkamp, S., & Copple, C. (1997). Developmentally appropriate practice in early childhood programs. Rev. ed. Washington, D.C.: NAEYC

- Bredekamp, S., and Goffin, S. G. (2012). Making the case: Why credentialing and certification matter. In R.C. Pianta (Ed.), *Handbook of early childhood education* 584-604 New York: Guilford Press.
- Castle, K. (2009). What do early childhood professionals do? *Dimensions of Early Childhood*, 37.3: 4-10.
- Chai, C. S., Koh, J. H. L. & Tsai, C.C. (2010). Facilitating pre-service teachers' development of technological, pedagogical, and content knowledge (TPACK). *Educational Technology and Society*, vol. 13 .63-73.
- Dockett, S., Perry, B., & Nanlohy, P. (2003). Computers in early childhood services: A part of the educational program or less time for play? *Journal of Australian Research in Early Childhood Education*, 6.2: 165-176.
- Duffy, T. M., & Jonassen, D. H. (Eds.). (2013). *Constructivism and the technology of instruction: A conversation*. Routledge.
- Fisher, T. (2005). 'Technology means nothing without humans' retrieve 8th March, 2021 from <[http://www.tes.co.uk/search/story/?story\\_id=2082994](http://www.tes.co.uk/search/story/?story_id=2082994)>
- Geoffrey, C. (2011). Teacher's Handbook on e-Assessment. Australian Learning and Teaching Council. From 12<sup>th</sup> February, 2021. Retrieved <https://goo.gl/GivH4L>.
- Ikoh, N.F. & Nwankwo, F.M. (2013). Teacher Resourcefulness: A key to improving ICT learning in primary schools. 115-121. *Journal of OMEP vol. 10.1*.
- Johnson, L., Smith, R., Willis, H., Levine, A., & Haywood, K. (2010). *The 2011 Horizon Report*. Austin, Texas: The New Media Consortium.
- Ministry of Education (2010). The National Curriculum for basic education 2008. Okahandja: NIED.
- Paquette, D., & Ryan, J. (2001). Bronfenbrenner's Ecological Systems Theory. Retrieved from: <http://www.editlib.org/p/19982/>
- Serhan, D. (2009). Preparing pre-service teachers for computer technology integration. *International Journal of Instructional Media*, vol. 36: 439-447.
- UNESCO. (2011). *UNESCO ICT competency framework for teachers*.
- Watts, J. (2009). Professionalism in Early Childhood Education (Unpublished Master's Thesis). Humboldt State University: Arcata, CA.
- Yelland, N. (2005). The future is now: A review of the literature on the use of computers in early childhood education (1994-2004). *AACE Journal*, 13.3: 201-232. Retrieved from <http://www.editlib.org/p/6038/?nl>