



Journal of Co-operative and Business Studies (JCBS)
Vol. 6, Issue 2, November 2021 ISSN: (Online) 2714-2043, (Print) 0856-9037
Full Issue and Text Available at: <http://www.mocu.ac.tz>

USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN EARLY CHILDHOOD EDUCATION IN IJEBU NORTH, OGUN STATE, NIGERIA

Adebanjo, Adedoyin Adewale and Rasheed, Simideleola Tolulope

Olabisi Onabanjo University, Ago-Iwoye, Ogun State.
[Email: babaoba72@gmail.com](mailto:babaoba72@gmail.com) and awoyele_simideleola@yahoo.com

ABSTRACT

The educational efforts in the wake of the use of Information Communication Technology (ICT) in schooling and gaining of knowledge particularly in Early Childhood Education have been a futile effort. Teachers as one of the stakeholders in education have not really shown interest in the application of ICT for instructing – learning process, this have contributed to the decline of government towards equipping the schools with relevant ICT facilities. The study investigated the use of ICT in Early Childhood Education (ECE) in Ijebu North Local Government of Ogun State, Nigeria. Expost-facto research design was employed. The population consisted of all registered private nursery schools in the Local Government Area. Fifty (50) nursery schools were selected in the study area using purposive sampling technique. Five teachers were randomly selected from each school for sampling, making a total of 250 respondents. The instrument employed to gather data was Extent of ICT usage in Early Childhood Questionnaire (EICTECQ) was constructed by the researchers and validated appropriately with the reliability of 0.70. The result indicated that usage of ICT in ECE classroom is low and few ICT tools were available while few were being utilised by the teachers. It is concluded that teachers do not engage in activities that promotes usage of ICT devices in ECE classroom because of non-availability of internet facilities as well technological gadgets in the school. As a result of the findings of this study some recommendations were made such as training and re-training of Early Childhood Education teachers periodically to familiarise them with the usage of recent ICT gadgets and also curriculum planners/policy makers should procure more ICT devices and also integrate these devices into early childhood curriculum among others.

Keywords: Information and Communication Technology (ICT), Teachers, ICT Usage, E-Learning, Early Childhood Education (ECE)

1.0 INTRODUCTION

In recent times, the demand and use of Information and Communication Technologies has increased tremendously and this has made it to be an indispensable device in all educational system. This is as a result of its capacities of meeting the learning demands of different students (Tariq Zafar, 2019; Mathew, Joro, & Manasseh, 2015). It also encourages self-efficacy and resourcefulness among learners. Besides, it enriches teacher's skill enhancement and also provide avenues for linking schools to the world as gaining of knowledge is extended beyond the teaching space (Liyanawatta, Yang, Liu, Zhuang & Chen, 2021; Mathew, Joro & Manasseh, 2015). This could support, as well as promote improved teaching and learning techniques at the early childhood education stage for optimum academic performance through the development of psycho-motor skills of the learning domain in children. The predominance of ICT in the lives of youngsters suggests that they are preoccupied with screen and there is an increase in the amount of time they engage in the use of screens of all kinds, this includes computers, tablets, televisions, smartphones, digital cameras, computers, programmable toys and robotics (Olateju, 2013).

COPYRIGHTS

Licensed under a Creative Commons Attribution-Non Commercial 4.0 International License



Adebanjo & Saka (2019) defined ICT as the varied pool of high-technological sources and device that are utilised for the purpose of communication. They are made to collect, generate, administer and distribute information. Also, ICTs are electric devices utilised for information storage and recovery, whose growth is partially influenced by capability to bring about a complementary connection between high-tech invention and individual component (Mathew, Joro & Manasseh, 2015). This implies that the effectiveness of technologies depends on the ability of people (teachers) to interact with them. Some of the objectives of ICT identified by Kadir, Kadri, Yusuf and Rasheed (2014) are: to vigorously smooth the progress of e-learning and instructing in a way that the aims of education may perhaps be fostered; to promote innovative and consolidative training and scholarship which make sure that gaining of knowledge becomes child centred and notions plus distinct resourcefulness are aimed at diverse learning avenues in order to attain the nationwide aims; to guarantee effortless right of entry to instructive resources, high value information, data and facts.

The effectiveness of the ICT in the classroom according to Kaula (2020) is meaningful when employed either as a delivery medium or as an instruction instrument. Among the benefits of ICT to the classroom and instructional process are that ICT offers the opportunity for learner-centred teaching, provide teachers with new source of information and knowledge, enable the teachers to have access to the latest technologies, enhance access to quality education, improvement in the educational delivery system and enhancing learning environment (Adesanya, Adebanjo & Yusuf, 2018). The educational efforts awake the use of ICT in schooling and gaining of knowledge particularly in Early Childhood Education has been a futile effort. Teachers as one of the stakeholders in education have not really shown interest in the application of ICT for instructing – learning process and this have contributed to the decline of government towards equipping the schools with relevant ICT facilities. Early childhood instructors have to be knowledgeable about all the information and communication technologies available in order to get the picture of the essential task that they, as teachers perform in facilitating technology for young children. The test for early childhood teachers is to generate options that take full advantage of scholarship opportunities for youngsters by facilitating the potential for misapplication and overdo of ICT, even as these tools present novel user interface that intensify their attractiveness and utilisation (Adesanya, Adebanjo & Yusuf, 2018).

Early Childhood Education (ECE) refers to the type of education received between ages 0 to 5 within the school environment in a crèche or nursery. They are sometimes referred to as play group [Federal Republic of Nigeria, (FRN), 2014]. The National Policy on Education (FRN, 2014) classified ECE as instructive establishment for pre-schoolers before their admission to elementary school, where children are left in the care of individual or organisation. ECE is necessary to prepare the child for smooth transition from home to school; it provides adequate care and supervision when parents are away at work or for business engagements. The propaganda of education for all has made it difficult to get house help and most parents are business men and women, hence they enrolled their children into nursery school.

At school, the child is provided with stimulating materials to learn through play. Adesanya, Adebanjo and Yusuf (2018) emphasised that play is the expression of inner feeling, curiosity and creativeness that involves exploratory behaviour and problem solving. Candeez (2010) submits that pre-school provides stimulating play environment for physical, intellectual and emotional development for children. Children's attentions are caught by handling, touching and manipulating objects to play, which eventually leads to learning. Shigini (2020) posited that learning that involves the multisensory organs is highly qualitative because children are able to interact using all the five sense organs. It is realistic because children are encouraged to participate actively.

The objects or devices include DVD, television, electronics, phones, digital cameras, computers, e-books, multimedia players, streaming media, programmable toys, robotics and electronic musical instrument. Adesanya, Adebanjo and Yusuf (2018) added that video games and multimedia resources especially those that combined education with entertainment are well accepted by children. If children interact with these devices, it will foster development of psychomotor skills. ICT provides opportunity for children to weave words together through pictures, sound and practice what is watched, thereby helping children communicate their thoughts, ideas and feelings. Computers, phones and video packages encourage children's participation, because they have the opportunity to operate the tools to suit their own purposes. They encourage discussion forum where children from different environment interact to learn new ideas, songs and games. Kaula (2020) supported that in the current dispensation, children's early literacy and play experiences are shaped by the use of ICT. It is well established in

literature that the application of ICT in teaching facilitates better understanding, enhances better memory retention and improves learners' achievement (Alkan & Kocak, 2015; Arista & Kuswanto, 2018; Yusuf & Balogun, 2011).

If ICT is introduced early, children would have been grounded in it before they get to higher institutions. For example, the tertiary institution examinations are being conducted through computer and many children who are not computer literate or well-groomed in computer skills find the computer-based examination difficult. Information and communication technology (ICT) will remain around us and pre-schoolers reside in a planet of synergistic media. They are maturing effortlessly with varieties of ICT gadgets that are fast turning out to be the instruments of culture in schooling, in home, in the workplace and in the neighbourhood (Berson & Berson, 2010; Rideout, Lauricella & Wartella, 2011). The utilisation of technology devices for phone call, teamwork, social schmoozing and user-created subject matter could transform conventional early childhood education in developed as well as developing countries (Nigeria inclusive) of the world. A study conducted by Kubiako (2010), reported that ICT enhanced students' learning in science from early age. Cook and Finlayson (2012) stated that the intensified usage of ICT tools in classroom will provide chances for pupils to acquire skill that will inspire them in gaining of knowledge. They further said that if the use of ICT in instructing and scholarship generated positive outcomes, educators will be more confident of the schooling procedure in the time to come.

ICT bring about a synchronic gaining of knowledge or learning distinguished by interval between instructing and gaining of knowledge by learners (Abimbade & Adesanya, 2012). Research findings show that the proper use of ICTs can facilitate the exemplary modification in both subject matter and teaching that is, at the centre of schooling improvement in the 21st century (Kaula, 2020; Osikomaya & Adesanya, 2010). The use of ICT has achieved positive effects in the teaching and learning of other subjects such as Fine Arts (Badru, 2006), Integrated Science (Adam & Omar, 2011), Distance Learning (Omoniyi, Adesanya & Olori, 2010) and English Language (Osikomaya & Adesanya, 2010). Likewise, the use of ICT in the early years of children can make their results better particularly in spelling words, pronunciation and learning of new words, grammar, reading and identification of alphabets.

The correct usage of tools in the early childhood teaching space is to enrich, expand, implement, differentiate, individualise and broaden the curriculum generally. Clearly, national curriculum aims alter with advance in years and vary from programme to programme. If an objective of the literacy program of study for a particular age child is to become skilled at how to write then, the processor can obviously aid that by means of digital cameras, writing software and other methods (Shigini, 2020). But, if processors are not completely incorporated into the general curriculum, they can really adversely influence children's creativeness (Haugland, 2020). Since early intervention of ICT lies with the teachers of the young children, it is pertinent that the use of CPUs and other digital tools continue to increase in early childhood programme and tool should be used as a device for enhancing programme quality in many interesting ways. Children should be given solid foundation in technology in order to position them well for success in their educational pursuit and also to have better results in terms of teaching and learning. Therefore, the purpose of this study is to investigate the extent to which ICT is used in early childhood education in Ijebu North Local Government of Ogun State.

ICT has been adjudged as the trademark of the 21st century and is finding its way into every sector including education. Scholars and researchers are strongly of the opinion that ICT has the potentialities to transform the education sector especially early childhood education (ECE) where computerised toys, video games, audio discs and other devices are available for instructions. One of the objectives of ECE in the National Policy is to develop the spirit of inquiry and creativity through the exploration of nature, the environment, art, music and playing with toys. The toys here presumably include modem toys that are computer driven teaching machines and devices for Montessorian way of instructing at this stage of education. It is therefore pertinent to investigate the extent to which ICT is being used in early childhood education (Adesanya, Adebajo & Yusuf, 2018). The available information and communication technology devices in early childhood classroom and to what extent do teachers engage in activities that promote the use of information and communication technology devices in early childhood classroom were the two research questions guided the study.

2.0 METHODOLOGY

The ex-post-facto type of research design was used for the study. This design used did not random assignment. In ex-post-facto, the researchers were looking at the prior variable present in the participant. The population consisted of all one hundred and thirty-seven (137) registered privately-owned nursery schools in Ijebu North Area of Ogun State. Fifty (50) schools were selected using purposive sampling technique with the following criteria: presence of

Creche, Kindergarten and Nursery classes; the registered privately-owned nursery schools that have been in existence for over five years. Five teachers from each school who teach Creche, Kindergarten and Nursery classes were randomly selected through balloting. In all, two hundred and fifty (250) respondents from the registered privately-owned nursery schools constituted the sample. The instrument used was constructed by the researchers titled 'Extent of ICT usage in Early Childhood Questionnaire (EICTECQ)'. Section A contained bio-data of teachers in early childhood schools. Section B contained the observation checklist of ICT facilities or tools available in early childhood classroom and response options. The response options are available and not available. Section C contained the questionnaire on extent of ICT usage in early childhood classroom and response options. The response options are strongly disagree, disagree, strongly agree and agree. The questionnaire was validated by two experts in Educational Foundations and Counseling Department, Olabisi Onabanjo University, Ago Iwoye, Ogun State, Nigeria. The modifications made by the specialists were incorporated in the ultimate copy of the questionnaire. The final draft of the feedback form was then administered on a sample of thirty ECE teachers outside the main study and the result was subject to reliability analysis using inter rater reliability which yielded a coefficient of 0.70. The researchers required the help of research assistants who administered and collected the questionnaire back from the respondents. The research questions were analysed using descriptive statistics (percentages, mean and standard deviation).

3.0 FINDINGS AND DISCUSSION

3.1 Available Information and Communication Technology Devices in Early Childhood Classrooms

Table 1: Data on ICT tools availability in early childhood classroom

S/N	ICT Tools	Available	Percent (%)	Not Available	Percent (%)
1	Computers	194.0	77.6	56.0	22.4
2	Video games	198.0	79.2	52.0	20.8
3	Television	210.0	84.0	40.0	16.0
4	Digital camera	60.0	24.0	190.0	76.0
5	e-books	70.0	28.0	180.0	72.0
6	Electronic toys	100.0	40.0	150.0	60.0
7	Audio CD/Radio	186.0	74.4	64.0	25.6
8	Multimedia player	60.0	24.0	190.0	76.0
9	Streaming media	50.0	20.0	200.0	80.0

Table 1 revealed that 84.0%, 79.2%, 77.6% and 74.4% teachers responded that television, video games, computers and audio CD/radio were available with both accruing the highest percentages accordingly among other ICT tools. Meanwhile 80.0%, 76.0%, 76.0%, 72.0%, 60.0%, 28.0%, 24.0%, 24.0% and 20.0% of ECE teachers responded that streaming media, multimedia player, digital camera, e-book and electronic toys were not available respectively. From the result in table 1, it was found that technological devices like television, video games, computers and audio CD/radio were used by ECE teachers during teaching and learning process because they were available. The plausible reason for this might be due to the fact that those available ICT devices can easily be procured by the schools. This finding corroborated with the findings of Alkan and Kocak (2015); Arista and Kuswanto (2018) who reported that processors with educational computer software were used in the classroom by 63.0% and also, video games were used in the classroom by 55.0% by ECE teachers during teaching-learning process for better performance of the learners.

3.2 Teachers' engagement in promotion of ICT Devices Usage in early childhood classroom

Table 2 shows the extent to which teachers engage in activities that promote the use of ICT devices in early childhood classroom. The table indicates that many of the teachers strongly agreed that they make use radio, television, CD and DVD while teaching ($\bar{x}=3.14$). The table also shows that most of the teachers disagreed that they connect to the internet while teaching children in ECE class ($\bar{x}= 1.5$). Many of them strongly agreed that they show the children things on the computer, cell phone or laptop while teaching ($\bar{x}= 2.59$). Most of the teachers strongly disagreed that they connect directly to a satellite broadcast or cable TV while teaching ($\bar{x}= 2.04$), that they make the children in their class connect online with other children in remote areas while teaching ($\bar{x}= 1.71$) and that they teach the children in my class virtually ($\bar{x}= 1.96$). It is also shown in the table that many teachers strongly agreed that they give the children home work/assignment that would entail them using the internet ($\bar{x}= 3.11$) and

they also agreed that they make use of laptop/PC to display instructional materials to the children in their class ($\bar{x}=2.87$), while many of the teachers strongly disagreed that they read E-books to the children in their class ($\bar{x}=2.12$).

Table 2: Extent of Teachers Engagement to promote the use of ICT devices in Early Childhood Classroom

S/N	Teacher's Use of ICT tools	Strongly Disagree	Disagree	Agree	Strongly Agree	\bar{x}	Std.D
1.	When I am teaching, I make use of radio, television, CD and DVD.	25 (10.0)	40 (16.0)	60 (24.0)	125 (50.0)	3.14	1.02
2.	I connect to the internet while teaching children in ECE class.	176 (70.4)	35 (14.0)	27 (10.8)	12 (4.8)	1.5	0.87
3.	I show the children things on the computer, cell phone or laptop while teaching.	75 (30.0)	46 (18.4)	35 (14.0)	94 (37.6)	2.59	1.26
4.	I connect directly to a satellite broadcast or cable TV while teaching.	112 (44.8)	50 (20.0)	54 (21.6)	34 (13.6)	2.04	1.09
5.	I make the children in my class connect online with other children in remote areas while teaching.	127 (50.8)	73 (29.2)	45 (18.0)	5 (2.0)	1.71	0.83
6.	I teach the children in my class virtually.	96 (38.4)	76 (30.4)	69 (27.6)	9 (3.6)	1.96	0.89
7.	I give the children home work/assignment that would entail them using the internet.	29 (11.6)	18 (7.2)	100 (40.0)	103 (41.2)	3.11	0.97
8.	I make use of laptop/PC to display instructional materials to the children in my class.	30 (12.0)	52 (20.8)	89 (35.6)	79 (31.6)	2.87	0.99
9.	I read E-books to the children in my class.	87 (34.8)	77 (30.8)	54 (21.6)	32 (12.8)	2.12	1.03
Weighted Average				2.34			

However, since the weighted average, as shown in the table, is lower than 2.50 which is a decision level accepted for high extent of teachers' engagement in activities that promote children's usage of ICT devices in early childhood teaching space, it can be concluded that the extent of teachers' engagement in activities that promote use of ICT devices in early childhood classroom is low. From the result of research question two, it was found that ECE teachers do not engage in activities that promote usage of ICT devices in early childhood classroom. They also do not use majority of technological tools in teaching early childhood classes and that is worrisome, because some of the schools do not have internet amenities which invariably affects the teaching-learning process. This finding corroborates the earlier study of Adesanya, Adebajo & Yusuf (2018), who reported that ECE teachers are not skilled at handling technological gadgets and tools in the ECE classroom. Moreover, they affirmed that technological devices are not sufficient in the ECE classroom. The finding is also in support of the works of Kaula, (2020) who reported that the application of ICT has positive effects in the teaching and learning. Also, in the work of Kubiato (2010), reported that ICT enhanced pupils' becoming skilled at science from tender age.

4.0 CONCLUSION AND RECOMMENDATIONS

Based on the findings, it was concluded that television and video games are in high percentage compared to others in terms of availability of ICT tools. Also, computers and audio CD/radio, electronic toys, recordable CD and/ DVD and computer are more often used by ECE teachers in teaching children compared to other ICT tools. It is also concluded that teachers do not engage in activities that promotes usage of ICT devices in ECE classroom because of non-availability of internet facilities as well technological gadgets in the school.

Therefore, it is recommended that curriculum planners/policy makers should procure more ICT devices and also integrate these devices into early childhood curriculum; the government, stakeholders and UNICEF/NGO should equip Nigerian ECE public primary schools with functional ICT devices so as to promote quality education in the era of information and communication technology. Lastly, training and re-training of Early Childhood Education teachers periodically in order to be familiar with the usage of recent ICT gadgets.

REFERENCES

- Abimbade, A. & Adesanya, A. O. (2012). Information and communication technology: Poverty and development in Africa. *International Journal of Education, Centre for the Promotion of International Relations Studies and Development*, 6(5), 1-12.
- Adams, B. & Omar, B. A. (2011). Integration of information and communication technology

- (ICT) in education. *International Journal of Research in Education*, 3(6), 58 – 64.
- Adebanjo, A. A. & Saka, A. O. (2019). Perceived competence of student-teachers of Olabisi Onabanjo University to integrate information and communication technology into Instructional Delivery. *Journal of Educational Media and Technology*, 24(2), 26 - 35.
- Adesanya, A. O., Adebanjo, A. A. & Yusuf, A. (2018). Availability and utilization of information and communication technology (ICT) in Early Childhood Education. *Abeokuta School of Education Journal*, 8(1), 141-147.
- Alkan, F. & Kocak, C. (2015). Chemistry laboratory applications supported with simulation. *Procedia – Social and Behavioural Sciences*, 176, 970-976. Retrieved from <https://cyberlennika.org/article>.
- Arista, F. S. & Kuswanto, H. (2018). Virtual physics laboratory application based on the android smartphone to improve learning independence and conceptual understanding. *International Journal of Instruction*, 11(1), 1 - 16. Retrieved from <https://eric.ed.gov/id>
- Badru, M. I. (2006). *Effects of presentation modes of computer assisted instruction (CAI) on learners' acquisition of design skills in Fine Arts*. An M. Ed Dissertation. Institute of Education, Obafemi Awolowo University, Ile Ife, Osun State.
- Berson, I. R. & Berson, M. J. (2010). High-tech tots: Childhood in digital world. In Berson, I. R. & Berson, M. J. (Eds), *Research in Global Child Advocacy*. Charlotte, NC: Information Age Publishing. 16 – 30.
- Candeez, C. N. (2010). *The implications of information and communication technologies in Education*. Retrieved 15 September, 2017 from <http://edu.issues.iict.article.12>, 1- 10.
- Cook, D. & Finlayson, H. (2012). *Interactive children, communicating teaching ICT and classroom teaching*. Buckingham: Open University Press. 20 – 25.
- Federal Republic of Nigeria (FRN, 2014). *National Policy on Education*. 2nd edition, Lagos. Nigerian Educational Research and Development Council (NERDC) Press.
- Haugland, S. W. (2020). Effect of computer software on pre-school children's developmental gains. *Journal of Computing and Families*. 13(3), 10 – 18.
- Kadir, H., Kadri, M., Yusuf, T. M. & Rasheed, D. (2014). Role of ICTs in enhancing a sustainable educational development in selected secondary schools in Ilorin metropolis. *Journal of Economics and Sustainable Development*, 5(9), 11 – 19.
- Kaula, S. (2020). The information and communication technologies for effective tendering process in public procurement of works in Tanzania: A case of Tanroads and Tarura in Mbeya Region. *Journal of Co-operative and Business Studies*, 5(2), 84 – 94.
- Kubiatko, M. 2010. Czech university students' attitudes towards ICT used in science education. *Journal of Technology and Information Education*. 2(3), 1 -10.
- Liyanawatta, M., Yang, S. H., Liu, Y. T., Zhuang, Y. & Chen, G. D. (2021). Audience participation digital drama based learning activities for situational learning in the classroom. *British Journal of Educational Technology*, 8(4), 10 – 20.
- Mathew, D. Joro, I. D. & Manasseh, H. (2015). The role of information and communication technology in Nigeria education system. *International Journal of Research in Humanities and Social Studies*, 2(2), 64-68.
- Olateju, E. O. (2013). Utilization of information and communication technology in research by Technical and Vocational Education (TVE) students in Federal College of Education (Technical), Akoka, Lagos. *Akoka Journal of Vocational and Science Education (AJOVASE)*, 2(1), 20 – 30.
- Omoniyi, T., Adesanya, A. O. & Olori, A. L. (2010). E-Learning and distance education in Nigeria: Possibility or Probability. *International Journal Promoting ICT in Education and Training*, 9(1), 9 -23.
- Osikomaya, M. O. & Adesanya, A. O. (2010). Production and use of instructional materials for language teaching. *African Journal for Multidisciplinary Research Studies (AJOMAS)*, 2, 97 – 103.
- Rideout, V., Lauricella, A. & Wartella, E. (2011). *Zero to Six: Electronic media in the lives of infants, toddlers and pre-schools*. A study and report by the Henry J. K. Family Foundation and Children's Digital Media Centres (CDMC) in Washington. 1 – 18.
- Shigini, P. G. (2020). Analysis of errors made Tanzanian advanced level learners of English in their academic writing. *East African Journal of Social and Applied Sciences*, 2(1), 100 – 113.
- Tariq Zafar, S. M. (2019). Role of information communication technology (ICT) in education and its relative impact. *International Journal of Engineering Research & Technology* 7(4), 1 – 10.
- Yusuf, M. O. & Balogun, M. R. (2011). Student-teachers' competence and attitude towards information and communication technology: A case study in a Nigerian University. *Contemporary Educational Technology*, 21(1), 18 - 36.