Percieved Influence In Information And Communication Technology In Teaching Of Computer Studies In Awka Education Zone Of Anambra State, Nigeria

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ABSTRACT

This paper was designed to ascertain the perceived influence in information and communication technology in teaching of computer studies in Awka education zone. Three research questions guided the study while three hypotheses were formulated and tested. Descriptive survey research design was utilized and it was carried out in Anambra state. A total of 270 primary school teachers were selected from the local government areas that made up of Awka education zone. A 23 item questionnaire was developed from literature and used to obtain data for the study. The questionnaire was validated by two lecturers from science education department Nnamdi Azikiwe University Awka. Cronbach alpha was used to determine internal consistency of the questionnaire which yielded a coefficient of 0.86. Data collected were analyzed using mean while t-test statistic was used to test null hypotheses. Mean cut off point of 2.50 was applied in decision making thus items with mean values of 2.50 or above was interpreted as agreed while items with mean less than 2.50 were interpreted as disagree. For the null hypotheses, they were upheld if the calculated level of significance was greater than 0.05 or otherwise rejected. The findings reveal ten perceived influence of ICT in teaching computer studies among primary school pupil, seven challenges of utilizing ICT in primary school classrooms and six roles of teachers in integrating ICT within the primary school classroom. The findings also reveal that gender, years of experience and age of teachers had no statistical significance on the opinions of the teachers. Based on the findings, the study recommended among others that the state government should provide the funds needed to purchase ICT resources needed by primary school pupils which are expensive; and Local governments should organize training/retraining for teachers in schools within their jurisdiction on

the use of ICT for teaching primary school students' so as to achieve the aims of utilizing ICT for learning among the primary school children.

Key Words: Information and Communication Technology, Primary School

INTRODUCTION

The popularization of Information and Communication Technology (ICT) is promoting effectiveness in all areas of human activities. The revolution of ICT seems to be progressing at a very rapid pace and has caused significant alterations to personal, social and work lives. Despite the utilization of ICT, there has been ongoing debate among authors about what it actually means (Ezeliorah & Obikezie, 2017). According to Ofurum and Ogbonna (2010), ICT is the combination of computing, telecommunication and video techniques for the purpose of acquiring, processing, storing, and disseminating vocal, pictorial, textual and numerical information. Nworgu (2008) stated that ICT refers to a whole range of facilities or technologies involved in information processing and electronic communication to be handled with skills and expertise, for effective achievement and realization of its potentials. ICT can be defined as a source that allows people to get information, to communicate with each other, or to have an effect on environment using electronic or digital equipment (Siraj & Blatchford, 2003). ICT is utilized across many fields including in teaching of computer studies in primary schools.

Primary school is referred to the teaching environment of young children. According to Louv (2009), primary school classroom refers to the environment where children between the ages of five to ten years learn especially primary 1-3. Information and Communication Technology according to Ikoh and Nwankwo (2013) plays an important significant role in the teaching and learning among children in primary school classrooms. 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 (Ukwueze & Ajala, 2014).ICT can facilitate differentiation and individualization in education making it possible to tailor both the content and the presentation of the subject matter to the individual background, experience and needs of students. In addition, Schiller and Tillett (2004) said ICT enhances what is possible in primary school classrooms by amplifying what teachers are able to do, providing an entry point to content and enquiries that were not possible without the use of ICT, extending what pupils are able to produce as a result of their investigations, and finally by providing teachers with the opportunity to become learners again. Contextually, primary school classrooms refer to the learning environment of primary school pupils in Nigeria.

The need to ascertain the perceived influence of ICT in primary school classrooms arose from the sporadic observation of reactions of children in primary schools when they were prevented access to electronic sources and devices to which they were accustomed. This is because the culture shift is different from what people were accustomed to before the popularization of ICT. According to Prensky (2010), those born in today's world where ICT has been popularized are called digital natives as against the digital immigrants who lived in the analogue age and immigrated to the digital world. According to UNESCO (2011), digital natives represent the first generation to grow up with this new technology. They are used to all kinds of digital toys and tools, which are an integral part of their life. Digital activity is like a mother tongue for them (Olga & Maider, 2017). The authors further posited that they are the generation of technological acceleration, of the internet and its networks. Growing up in such an environment, they think and process information in a totally different way than previous generation,

their thinking patterns have changed, and Prensky (2010) says it is likely that their brains have physically changed, too. Furthermore, Prensky posited that as digital natives, they are 'native speakers' of the digital language leading to such a radical change that there is a big discontinuity between their generation and previous one in primary schools.

At a didactic level, it poses a serious problem in primary school classroom. The use of new technologies in the school context, even to perform a task, strengthens non-relevant behaviors in relation to consumption, or provokes an alteration the process of knowledge and interaction with reality (UNESCO, 2011). In addition, significant challenges that are considered stand in the way of ICT deployment in primary school education include equity of access to equipment, and professional development provision for training teachers (Ukwueze& Ajala, 2014). Understanding gaps exist as Dale, Robertson, and Short (2002) predict that "the qualitative and quantitative gaps between the pupils' and the teacher's understanding of the affordances of ICT as a technology of teaching are much greater than has ever been the case with any other teaching technology. Plowman, McPake and Stephen (2012) argued that the curriculum and assessment are less prescriptive for pre-school settings and the role of computers in driving up standards is not yet explicitly stated in primary school policy documents. The authors further asserted that primary school teachers have a diverse range of qualifications and experience in the use of ICT for teaching computer studies in school. Sometimes these schools have very few staff and do not generally have a high level of ICT resources (Ezeliora & Obikezie, 2017). In teaching many science subjects like computer, Haugland (2000) defines computer as an electronic device for storing and processing data typically in binary form, according to instructions given to it in a variable program. He further explained that the study of this electronic device for storing and processing data typically in binary form, according to instruction giving to it in a variable is called computer studies. Computer studies has so many importance which includes problem solving, and essential skills studies for life. This essential skills include study of design in computer studies, development and analysis of software and hardware in computer studies. All these are used to solve problems in a variety of business, scientifically and in social context (Nwankwo 2013).Apart from the

above, computer studies are been inculcated to students, especially children in primary school through ICT to help improve their scientifically and technological IQ. To minding of challenges of utilizing ICT in teaching of computer studies in primary school (Ukwueze & Ajala ,2014). Despite the potential benefit and challenge of utilizing ICT in primary school classrooms, there is a paucity of evidence about the current state of its usage in many Nigerian states and education zones because students especially in age bracket of 4-14 within primary school education in Nigeria fails to use ICT for positive things which is the purpose of computer studies (Nwankwo 2013). That is why this study is focused on perceived influence of information and communication technology in teaching of computer studies in primary schools.

STATEMENT OF THE PROBLEM

Awka education zone is one of the six educational zones in Anambra State Nigeria. The initial interest on the perceived influence of ICT in early primary school classrooms is stemmed in teaching of computer studies from extensive teaching experience in children in the zone, where it was evident that ICT was becoming an increasing fixture in the teaching and learning environment of primary school. More recently, this interest shifted into a slightly different direction when working with early primary school teachers within the teacher education context. It became increasingly apparent that teachers displayed varying views of the part considered ICT played or should play within these settings, coupled

with how they chose to use or not to employ ICT resources. Haugland (2000) opined that ICT if used in appropriate ways can enhance learning with very young children especially in primary school. ICT offers a multiplicity of uses and can be integrated into meaningful and learning opportunities for children, but seems that ICT was centered predominantly on the higher education sector like secondary schools and tertiary institutions (Ajayi & Ekundayo, 2009; Adesoji, 2012; Aboderin & Kumuyi, 2013). ICT within the higher schooling sector has long been considered an integral component of the curriculum, the use of ICT within primary school classrooms has been afforded less attention (Haugland 2000). This lack of attention did not necessarily mean however, that ICT in computer studies was non-existent or not implemented within primary school contexts (Okpala, Onyenwe, Nwaubani &Obijiofor, 2021). In Awka education zone, observation and pre-study visitation to several primary schools indicate that small groups of primary school teachers have been implementing and integrating ICT in computer studies within their teaching and learning contexts over a number of years. Notwithstanding, there is a paucity of information on the perceived influence of information and communication technology in computer studies in primary school classrooms in Awka education zone. It is this gap in literature that the current study sought to fill.

PURPOSE OF THE STUDY

The general purpose of the study is to ascertain the perceived influence of information and communication technology in teaching of computer studies in primary school classrooms in Awka education zone in Anambra State, Nigeria. Specifically, the study sought to ascertain the;

1. Perceived influence of ICT in teaching computer studies among primary school pupils.
2. Challenges of utilizing ICT in teaching computer studies in primary school classrooms.
3.Perceived influences of teachers in integrating ICT in teaching computer studies within the primary school classroom?

RESEARCH QUESTIONS;

The following research questions guided this study

1. What is the perceived influence of ICT in teaching computer studies among primary school pupils?
2. What are the challenges of utilizing ICT in teaching computer studies in primary school classrooms?
3. What is the perceived influence of teachers in integrating ICT in teaching computer studies within the primary school classroom?

HYPOTHESES

Ho $_1$: There is no significant difference between the mean responses of male and female teachers on the perceived influence of ICT in the teaching computer studies among primary school pupils

Ho $_2$: There is no significant difference between the mean responses of inexperienced teachers (five years or less of experience) and experienced teachers (greater than five years of experience) on the challenges of utilizing ICT in primary school classroom

Ho 3: There is no significant difference between the mean responses of young teachers (less than or equal 40 years of age) and old teachers (greater than 40 years of age) on the perceived influence of teachers in integrating ICT within the primary school classroom

METHODOLOGY

Descriptive survey design was adopted for the study and was conducted in Awka education zone Anambra State, Nigeria. The population for the study consisted of all primary schools in the education zone selected. Simple random sampling technique was used to select 270 school teachers who are involved in the study. A 23 item questionnaire was developed from literature and use to obtain data for the study. The response for the questionnaire was Strongly Agree (SA), Agree(A), Disagree (D) and Strongly Disagree (SD).

The questionnaire was face validated by two experts from the Department of Science Education, Nnamdi Azikiwe University, Awka. Cronbach alpha was used to determine internal consistency of the questionnaire which yielded a coefficient of 0.86. The questionnaire was administered on 270 respondents and there was 100% return rate which equates to 270 primary school teachers because of direct contact with the teachers. Mean and standard deviation was used to answer the research questions while t-test statistics was used to test the hypothesis at 0.05 level of probability. Mean cut off point of 2.50 was applied in decision making. Hence, any item with mean value of 2.50 or above was interpreted as agreed while items with mean less than 2.50 were interpreted as disagree. For the null hypotheses, they were upheld if the calculated level of significance was greater than 0.05 or otherwise rejected.

RESEARCH QUESTION 1

What are the perceived influences of ICT in teaching computer studies among primary school pupils?

Ho 1: There is no significant difference between the mean responses of male and female teachers on the perceived influence of ICT in the teaching computer studies among primary school pupils

Table I: Mean, Standard Deviation rating and Significant difference of perceived influence of ICT in teaching computer studies among primary school pupils.

S/N	ITEMS	G_X	X_2	SD_1	X_2	SD_2	Sig
1	ICT help in teaching of computer studies among primary school students because it makes the study feel like a game.	3.68	3.51	0.66	3.84	0.37	0.06
2	ICT supports the effective learning of computer studies for primary schools due to enhanced interaction.	3.22	3.12	0.74	3.57	0.24	0. 24

3	ICT enables primary schools pupils to actively work together during computer studies.	3.20	3.16	0.75	3.26	0.65	0.59
4	ICT is suitable for delivery of computer learning, among primary school pupils.	3.32	3.41	0.78	3.26	0.63	0.74
5	ICT provides a range of tools to support and enhance learning during computer studies teaching in primary schools.	3.56	3.51	0.70	3.63	0.50	0. 50
6	ICT provides practical ways of communicating with pupils when teaching computer studies.	3.34	3.29	0.73	3.42	0.61	0.49
7	ICT amplifies what teachers are able to do during computer studies in school classroom.	3.25	3.13	0.60	3.36	0.45	0.38
8	ICT enhances documentation process by allowing children document their own learning during computer studies teaching.	3.26	3.19	0.81	3.43	0.51	0.09
9	Computer studies help primary school pupils to master ICT tools during teaching.	3.28	3.26	0.97	3.30	0.88	0.02
10	ICT allows primary school pupils monitor and reflect on their learning during computer studies teaching.	3.63	3.57	0.58	3.84	0.37	0.61

Key N = 270 (83 males and 187 females); E_X = Grand mean; X_1 = mean of male teachers, SD_1 = Standard deviation of male teachers; X_2 = Mean of female teachers; SD_2 = Standard deviation of female teachers.

Results from Table 1: Revealed that all the items had their mean values ranged from 3.20 to 3.68. All the items were above the cut off mean of 2.50 indicating that these were the perceived influence of ICT in teaching computer studies among primary school pupils. However, significant differences exist one the remaining item (item 9) because the significant level was 0.02 which was less than0.05. Therefore, it can be concluded that there was no significant difference between the mean responses of male and

female teachers on the perceived influence of ICT in teaching computer studies among primary school pupils. The null hypothesis was upheld for all items except item nine.

RESEARCH QUESTION 2

What are the challenges of utilizing ICT in teaching computer studies in primary school classroom?

Ho 2: There is no significant difference between the mean responses of inexperienced teachers (five years or less of experience) and experienced teachers (greater than five years of experience) on the challenges of utilizing ICT in primary school classroom

Mean, Standard Deviation rating and Significant difference of challenges of utilizing ICT in teaching computer studies in primary school classroom

S/N	ITEM	G_X	X_1	SD_1	X_2	SD_2	Sig
1	Primary schools pupils get distracted by playing non-educational games during computer studies using ICT materials (Word puzzle game).	3.59	3.59	0.60	3.58	0.61	0.95
2	Inadequate funds to procure the needed ICT materials for computer studies in primary schools.	3.47	3.45	0.61	3.32	0.51	0.82
3	Lack of maintenance of ICT materials, challenges teachers in teaching computer studies in primary school.	3.42	3.53	0.61	3.32	0.60	0.21
4	Low level of competency in the use of ICT challenges teachers in teaching computer studies	3.27	3.26	0.71	3.28	0.56	0.99
5	Lack of infrastructure like power supply, challenges teachers in using ICT during computer studies.	3.55	3.52	0.70	3.63	0.50	0.55
6	Resistance to adopt new ideas in technology hinders teachers in effective use of ICT teaching	3.47	3.40	0.65	3.58	0.51	0.26

in computer studies.

7	Lack of strong connection network to effectively use ICT during computer studies in the school.	3.33	3.35	0.62	0.45	0.67	0. 67

Key N = 270 (102 Inexperienced and 168 Experienced); G_X = Grand mean; X_1 = Mean of inexperienced teachers; SD_1 = Standard deviations of Inexperienced teachers; X_2 = Mean of experienced teachers; SD_2 = Standard deviations of experienced teachers.

Results from Table 2: showed that all the items had their mean ranged from 3.27 to 3.59. All the items were above the cut off mean of 2.50 indicating that these were the challenges of utilizing ICT in teaching computer studies in primary school classroom. Furthermore, the result from the hypothesis showed that the significant level of all seven items ranged from 0.21 - 0.99 and these were all greater than 0.05 showing that no significant differences exist between the mean ratings of the responses of inexperienced and experienced teachers on the challenges of utilizing ICT in primary school classrooms. Hence, the null hypothesis was upheld.

RESEARCH QUESTION 3

What are the perceived influences of teachers in integrating ICT in teaching computer studies within the primary school classroom?

Ho $_3$: There is no significant difference between the mean responses of young teachers (less than or equal 40 years of age) and old teachers (greater than 40 years of age) on the perceived influence of teachers in integrating ICT within the primary school classroom

Table 3: Mean, Standard Deviation rating respondents and significant difference on the perceived influences of teachers in integrating ICT in teaching computer studies within the primary school classroom?

S/N	ITEM	G_X	X_1	SD_1	X_2	SD_2	sig
1	The teachers normally guide the pupils on the use of ICT during computer studies.	3.44	3.40	0.65	3.52	0.51	0.26
2	The teachers allow the students to explore ICT materials during computer studies.	3.33	3.35	0.62	3.27	0.45	0.56

3	The teachers use numerous ICT facilities so as to carry all the students along.	3.55	3.56	0.66	3.52	0.51	0.84
4	The teachers build expertise and learn alongside with students using ICT during computer studies.	3.29	3.22	0.77	3.53	0.51	0.11
5	The teacher research on new ways of using ICT to help integrate it to students during computer studies.	3.41	3.38	0.73	3.52	0.61	0.44
6	The teacher improve his or her ability and teaching skill regularly to help in integrating ICT knowledge to students during computer studies.	3.37	3.37	0.62	3.37	0.68	0.99

Key N = 270 (110 Young teachers and 160 old teachers); G_X = Grand mean, X_1 = mean of young teachers, SD_1 = Standard deviations of young teachers; X_2 = mean of old teachers, SD_2 = Standard deviations of old teachers.

Results from Table 3: showed that all the items had their mean values ranged from 3.29 to 3.44. All the items were above the cut off mean of 2.50 indicating that these were the perceived influence of teachers in integrating ICT in teaching computer studies within the primary school classroom. Furthermore, the result from the hypothesis showed that the significance level of all six items ranged from 0.11 - 0.99 and these were all greater than 0.05 showing that no significant differences exist between the mean responses of young and old teachers on the perceived influence of the teachers in integrating ICT within the primary school classroom. Hence, the null hypothesis of was upheld.

DISCUSSION OF THE FINDINGS

The findings of the study revealed that the perceived influence of ICT in teaching computer studies among primary school pupil**.** From table 1 revealed all the items had their mean values ranged from 2.50 indicating that all the items were the perceived influence of ICT in teaching computer studies among primary school pupils which includes; ICT help in teaching of computer studies among primary school students because it made the study feel like a game, ICT support effective learning of computer studies for primary schools due to enhanced interaction. ICT enable primary school pupils to actively work together during computer studies, ICT is suitable for delivery of computer learning among primary school pupils, ICT provides a range of tools to support and enhance learning during computer studies in primary school, ICT provides practical ways of learning to pupil when teaching computer studies , ICT amplifies what teachers are able to do during computer studies in primary school classroom, ICT enhances documentation process by allowing children document their own learning during computer studies teaching.

Computer studies help primary school to master ICT tools during teaching and ICT allows primary school pupils to monitor and reflect on their learning during computer studies teaching (Ikoh and Nwankwo 2013) who found out that ICT increases interest of primary pupils because learning feels like game as well as supports effective learning for children due to enhanced interaction. The findings are also in consonance with that of Ukweze and Ajala (2014) who found out that ICT is suitable for delivery of learning in all situations. The findings of the study revealed that challenges of utilizing ICT in teaching computer studies in primary school classroom includes; primary school pupil getting distracted by playing non-educational games during computer studies using ICT materials (word puzzle game).

The finding of the study also revealed that inadequate funds to procure the needed ICT materials for computer studies in primary schools, lack of maintenance of ICT materials challenges teachers in teaching computer studies, low level of competency in the use of ICT challenges teachers in teaching computer studies, lack of infrastructure like power supply challenges teachers in using ICT during computer studies. Resistance to adopt new ideas in technology hinders teachers in effective use of ICT teaching in computer studies and lack of strong connection network prohibit the use of effective use of ICT during computer studies in the school.
The findings are in line with Okpala, et. al (2020) who found out that the challenges of adopting ICT in schools was for lack of infrastructure like power supply. The findings are also in line with Aboderin and Kumuyi (2013) who found out that a major challenge to the utilization of ICT is the use of teacher's resistance to the adoption of new technology.

In another development, the findings also revealed that influence of teachers in integrating ICT in teaching computer studies within the primary school classroom include; the teachers normally guide the pupils on the use of ICT during computer studies, the teachers allow the students to explore ICT materials during computer studies, the teachers use numerous ICT facilities so as to carry all the students along, the teachers build expertise and learn alongside with students using ICT during computer studies , the teachers research on new ways of using ICT to integrate it into the students during computer studies and the teacher improve his or her ability and teaching skill regularly to help in integrating ICT knowledge into students during computer studies.
The findings are supported by Ukwueje and Ajala (2014) who found out that equity of access to equipment include building expertise and learning alongside children using ICT. The findings also is not in line with Ezeliorah and Obikezie (2017) who found out teachers generally experience problem in using ICT packages for instruction thereby do not integrate ICT to students in teaching and learning.

CONCLUSION

The study sought to ascertain the perceived influence of information and communication technology in teaching of computer studies in Awka Education zone of Anambra State. In ascertaining this, the findings revealed ten perceived influence of ICT in teaching computer studies among primary school pupils, seven challenges of utilizing ICT in primary school classroom and six perceived influences of teachers in integrating ICT in teaching computer studies within the primary school classroom. In ensuring that the perceived influence of ICT are achieved, it is important to mitigate the identified challenges. As a result, some recommendations were made.

RECOMMENDATIONS

1. The state government should sensitize school teachers and parents on the immense importance that ICT plays in the learning process among primary school children. These will ensure that the benefits of utilizing ICT are attained.
2. The state government should provide the funds needed to purchase ICT resources needed by primary school pupils which are expensive.

3. Local governments should organize training/retraining for teachers in schools within their jurisdiction on the use of ICT for teaching primary school students so as to achieve the aims of utilizing ICT for learning among the children.

4. Schools should ensure that ability to utilize ICT for teaching primary school students is a prerequisite that teachers would have before employing them.

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