

Teachers' Perception of the usefulness of ICT in Colleges of Education in Osun State, Nigeria

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Abstract. This study sought information on teachers' perception of the usefulness of ICT on their effectiveness. The population comprised of the teachers in Colleges of Education teachers in Osun State. A random sample of one hundred (100) teachers was selected from these teachers. The data collected were analysed using frequency counts, percentages, Pearson Product Moment Correlation Coefficient and t-test statistics. The findings were that there was no significant relationship between ICT resources and teachers' effectiveness; there was a positive relationship between teachers' attitudes towards the usage of ICT and their usage of ICT; and that there is a difference in usage of ICT in teaching by gender. It is argued that for teachers to appreciate usage of ICTs in teaching, they need to see that ICT tools are imperative for teaching.

Keywords: E-learning; ICT; Teacher training.

1 Introduction

Education is a process of bringing or moulding the young for living a pleasant and happy life. Educating someone or helping somebody to learn something by providing required information is teaching (Rupnar et al., 2017). Teachers in all nations constitute a major input in the accomplishment of educational goals and objectives, also trained and effective teachers are the principal asset of any educational system (Patrick et al., 2018). Improving teacher quality through



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enhancing teacher effectiveness has been of global concern. Teachers' effectiveness has been of major concern to researchers, educationists and policy makers all over the world for educational reforms during the last five decades. Teachers have a long lasting influence on their students. They directly affect how students learn, how much they learn and the ways in which they interact with one another and the world around them (Rupnar et al 2017 Kennedy, 2010; Rivkin, Hanushek, & Kain, 2005).

Effective teaching includes high level of creativity in analysing, synthesizing and presenting knowledge in new and effective ways. It instils in the learners the ability to be analytical, intellectually curious, culturally aware, employable and capable of leadership (Okolie, 2014). Effectiveness of individual classroom teacher is the single largest factor affecting academic growth of the students (Oviewe, 2016; Okolocha & Onyeneke, 2013). Some studies have revealed that the decision to adopt a particular technology is a very complex phenomenon that requires holistic, empirical investigation to be understood (Adamkolo et al. 2018; Abu Bakar, Abdul Razak & Abdullah 2013; AbdulRahman, Jamaluddin & Mahmud 2011).

As cited by (Buhari and Nwoji, 2015), It should be noted that The National Policy on Education by Federal Republic of Nigeria (2004) stated that no education system can rise above the quality of its teachers. However, some studies had shown that most teachers in Nigeria were not able to cope with the pace of technological adoption in the classroom owing to constraints such as lack of adequate ICT orientation and training for teachers, lack of availability of adequate ICT infrastructure in schools, and lack of stable power supply for effective ICT operational activities in schools (Asogwa 2013; Ololube 2014; Prasad et al. 2015; Anunobi 2015). It has also been observed that Nigeria is still regressive in ICT adoption and use, especially in education (Arekete et al., 2014; Iloanusi & Osuagwu, 2009; International Telecommunication Union, 2012, 2013, 2014).

Meanwhile, the application of ICT has changed the learning and teaching process in which students deal with knowledge in an active, self-directed and constructive way. ICT is not only employed as an instrument, which can be added for existing teaching methods but also seen as an important instrument to support new ways of teaching-learning process (Buhari and Nwoji, 2015). Undoubtedly, the adoption and effective use of ICT in the teaching and learning process is one of the most discussed issues in the current education policy making process (Baturay, Gokcearslan & Ke, 2017). The knowledge and skills required to embrace the emergence of ICT is also a priority for all education authorities worldwide (Tatto, 2006). The vital role of teachers in the effective adoption and use of ICT in education has been given prominence in latest studies in the field (Englund et al., 2017; Comi et al., 2017; Nikolopoulou & Gialamas, 2016). Hence, the accelerated adoption and use of ICTs has resulted in the globalization of information and knowledge resources (Islam and Islam, 2007).

The term Information Communication Technology (ICT) or its plural Information communication Technologies (ICTs), has been often used to describe internet technologies along with computer networks, the World Wide Web (WWW),

and search engines, which are used in producing and sharing information (UNESCO 2010). Also, Thorpe (2010) defined ICT as the use of digital media and the internet. Despite the widespread benefits of ICTs in education, reports showed that over the past several years, most countries in sub Saharan Africa (Nigeria inclusive) were rated low across the globe in terms of ICT adoption/ uptake. Nigeria is ranked 143 on Usage index out of 176 countries surveyed with just 2.60% far below most African countries (International Telecommunication Union 2017; UNESCO 2015).

Consistently, some studies had shown most teachers in Nigerian institutions of learning did not have the capacity to integrate new technologies in the classroom (Mbaba & Shema, 2012; Ubulom et al., 2011; Nasir et al., 2013). To achieve the desired education reform in Nigeria, teachers must appropriately adopt ICTs and put them to use in their teaching activities (Onyia & Offorma 2011; Yusuf & Yusuf 2009). Coleman et al. (2016) also observed that the appropriate use of ICT in teaching transforms the learning environment from teacher-centred to learner-centred. When used appropriately, ICTs help in expanding access to education through faster information distribution and availability anytime and anywhere (Aktaruzzaman et al., 2011, Luhamy et al., 2017). Teachers and students are connecting them to each other and to a wide range of information in an efficient and effective way (Kreijns et al., 2013). There is increasing evidence with regards to the benefits of ICT usage in education (Blackwell et al. 2013; Tondeur et al, 2017). It has been reported that ICT use demanded greater creativity in lesson planning and as such much more time had to be invested in planning and preparation (Cathy-Ann, 2011). He also cited Deaney et al. (2005) that all teachers who used ICT stressed the importance of having a back-up plan when using ICT in classroom delivery. Also, it helps teachers to design their lesson plans in an effective, creative and interesting approach that would result in students' active learning. (Gavifekr et al., 2015), It has also been observed that ICT has positive significant on classroom management (Ali et al., 2014)

Experience had shown that the present generation of students are technology users and they often question the ICT facilities available in their schools and how their teachers used it in classrooms. Geoffrey, (2010) revealed in his study conducted in a private university revealed that students wanted their teachers to use ICT in their teaching because students found it useful and believed that it reinforces whatever the teacher was teaching. Venkatesh et al., (2014) in a study making use of Exploratory factor analyses followed by multiple regressions show that engaging lectures, effective use of ICT tools for individual study and group-work, as well as active and self-regulated study strategies have a positive and significant impact on students' perceptions of course effectiveness.

Similarly, Emmanuel and Adelabu (2015) cited Ogunlade (2008) who observed that, the adoption of ICT in education would arouse a new interest among students, educators and educationists and possibly influence, if not change the attitude of teachers and students to learning. ICT in education would also promote global

interaction and sustainable development. As cited by Salman et al (2013), (Thijs, 2002, Tinus2003) identified the benefits of ICT-based instructional strategy against the traditional method among others as a medium that provides learners the opportunity to work with people from different cultures, thereby helping to enhance learning and communication skills as well as their global awareness, encourages interaction and cooperation among students, teachers, and experts regardless of where they are. Also, Greece (2010) affirmed that ICT-based instruction facilitate student-centred learning. It was further explained that it focuses on students' needs, abilities, interests, and learning styles with the teacher as facilitator of learning.

However, the adoption and use of ICT for learning purposes will predominantly depend on whether students and instructors believe that using ICT in teaching and learning processes meets their particular academic needs. Therefore, the study focused on the perceived usefulness of Information and Communication Technology on Teachers' Effectiveness in Osun state colleges of education.

1.1 Statement of the Problem

In Nigeria, rapid change in the role of the teacher in recent years is emerging. There are many new modifications and tasks that teachers face, and are required to adapt to. Included in this are a more current and westernized approach from schools; new methods of teaching and learning, an increase in student numbers, and (most importantly) an explosion in the development of teaching with ICT. All this means teachers need to update their knowledge and skills to develop the educational process in the classroom. It was therefore paramount that teachers' perceptions on the usefulness of ICT integration in education be sought so as to establish any challenges (Nziwil, 2017). As mentioned earlier, teachers are the key curriculum implementers of school programmers.

With the emergence of a new philosophy towards ICT and its role in education, a wide body of research has developed investigating the role of ICT and its effects in developing an interactive education environment. However, many studies have been limited to investigating the impact of ICT on learners, theories on ICT models, ICT usage, Challenges and effectiveness at secondary school level (Oguniran et al., 2016; Thomas, Babatope & Jonathan, 2013; Ahmed et al., 2016; Deebom & Zita, 2016). Hence, it is against this backdrop that the study focuses on perceived usefulness of information and communication technology on teachers' effectiveness in Colleges of Education in Osun State, Nigeria.

1.2 Hypotheses

The following null hypotheses were tested:

1. There is no significant relationship between availability of ICT resources and teachers effectiveness.

2. There is no significant relationship between teachers' attitudes and their usage of ICT in teaching-learning processes.
3. There is no significant relationship between the perceived usefulness and usage of ICT in teaching-learning processes.
4. There is no significant difference in the perceptions of usage of ICT by gender.

2 Methodology

The study followed a descriptive survey design. The population comprised of the teachers in the Colleges of Education in Osun state Nigeria. A sample of 100 respondents were randomly selected from these. The selection was purposely done to represent each of the colleges and the schools of science, arts and social sciences, languages, vocational studies and technology and school of education. Two experts in the field of measurement and evaluation from Osun State University, College of Education, Osogbo, Ipetu-Ijesha, campus validated the instrument. Their observations and corrections were effected before it was administered to the respondents. The reliability of the instrument was established by test-retest method. The instrument was administered to 10 teachers who were not part of the sample. After an interval of two weeks, the same instrument was re-administered to the same respondents and scores were taken. The two sets of scores was computed and compared using Pearson Product Moment Correlation coefficients (r) and a reliability coefficient of 0.86 was obtained was considered high enough for reliability. A self-developed questionnaire titled "Perceived Usefulness of Information Communication Technology on Teachers Effectiveness" (PUICTTE) was used for the study. The researcher visited Osun state College of Education, Ila-Oranngun, Osun state, Nigeria covered by the study and personally administered the instrument to the respondents while five trained research assistants were used in the other Colleges in the state. The data collected were subjected to Pearson's Product Moment Correlation test at the .05 level of significance.

3 Findings

Hypothesis I: There is no significant relationship between availability of ICT resources and teachers effectiveness.

Table 1. Availability of ICT Resources and Teachers' Effectiveness

Variable	N	Mean	SD	<i>df</i>	R	P	Remark
Teachers effectiveness	100	3.8300	.4507	98	0.017	0.867	Insignificant
Availability of ICT	100	1.6100	.4902				

**Correlation is insignificant at the 0.001 level (2-tailed)

A Pearson product-moment correlation was performed to provide answer to the result of the relationship between availability of ICT resources and Teachers' Effectiveness. The result obtained is shown in Table 1: It revealed that the computed mean and standard deviation were (3.8300, 1.61100) and (.4507, .4902) respectively. The Table shows that r value of 0.017 is less than that of p value of 0.867 which implies that there is no significant relationship between ICT resources and teachers effectiveness. These could be attributed to the fact that the summation of the number of respondents were not able to cope with the pace of technology adoption in the classroom due to lack of availability of adequate ICT infrastructure in schools, and lack of stable power supply for effective ICT operational activities in schools expectations and also hinder effectiveness of teachers.

Hypothesis 2: There is no significant relationship between teachers' attitudes and their usage of ICT in teaching-learning processes.

Table 2. Attitudes and Usage of ICT in Teaching-Learning processes

Variable	N	Mean	SD	df	R	P	Remark
Teachers attitudes	100	2.3100	1.0512	98	0.148	0.14	Significant
Usage of ICT	100	3.8000	.40202				

**Correlation is significant at the 0.001 level (2-tailed)

A Pearson product-moment correlation was performed to provide answer to the result of the on teachers' attitudes towards the usage of ICT in teaching-learning process. The result obtained is shown in Table 2: It revealed that the computed mean and standard deviation values of private and public were (2.3100, 3.8000) and (1.0512, .40202) respectively. The Table shows that r value of 0.148 is greater than that of p value of 0.141 which implies that there was a positive relationship on teachers' attitudes towards the usage of ICT in teaching-learning process. These implies that teachers are reported to have wider computer experience, report greater interest in and positive attitudes towards computer-related activities, and even appear to be more motivated about learning digital skills and this has enhance effective teaching and learning which ultimately influence general performance of teachers.

Hypothesis 3: There is no significant relationship between the perceived usefulness and usage of ICT in teaching-learning process.

Table 3. Perceived usefulness and usage of ICT in Teaching-Learning Processes

Variable	N	Mean	SD	df	R	P	Remark
Usefulness	100	3.0700	.89052	98	0.538	0.000	Significant
Extent of Usage of ICT	100	3.5400	.50091				

**Correlation is significant at the 0.001 level (2-tailed)

A Pearson product-moment correlation was performed to provide answer to the result of the on the perceived usefulness and extent of ICT usage in teaching-learning process. The result obtained is shown in Table 3: It revealed that the computed mean and standard deviation values of private and public were (3.0700, 3.5400) and (.89052, .50091) respectively. The Table shows that r value of 0.538 is greater than that of p value of 0.000 which implies that there was a strong positive relationship on the perceived usefulness and extent of ICT usage in teaching-learning process. These implies that for teachers to appreciate using ICTs in the classroom, they need to see that ICT tools are imperative for teaching. Individuals viewed ICTs as useful to their jobs when they perceived that the time they spent on doing their jobs could be lessened and their job performances could be improved by their use of ICTs.

Hypothesis 4: There is no significant difference in the perceptions of usage of ICT by gender.

Table 4: Difference in Perception of ICT usage by Gender

Group	N	Mean	SD	T	df	Sig (2-tailed)	Decision
Male	62	3.258	.44114	10.347	98	.000	Significance
Female	38	4.000	.00000				

In the Table 4 shows the result of the significant difference between the perception of male and female teachers on ICT usage in teaching- learning process. It revealed that the computed mean and standard deviation values of male and female were (3.258, 4.000) and (.44114, .00000) respectively. The result further revealed that the calculated t-value of 10.347 was less than the critical t-value of 121.816 at 5% level of significance or that the probability value of .000 is lower than 5% (0.05) significance level. Since the calculated t-value is less than the critical t-value, it means that there significant difference between the perception of male and female teachers on ICT usage in teaching- learning process based on gender ($t = -10.347$, $df = 98$, $p < 0.05$). This implied that there is difference between male and female teachers on ICT usage in teaching- learning are significantly differed based on gender. In Table 4, Sig. was established at .00. Therefore, the null hypothesis was rejected.

4 Conclusions and Recommendations

For College of Education to be effective, computer literacy should be established through availability of computers, computer utilization, and content competencies in the schools, as well as through Teachers' Effectiveness in the areas of teaching-learning, record keeping, supporting students' academic performance, teachers job performance, school discipline and community services.

The application of ICT has transformed the learning and teaching process in which Colleges of Education teachers deal with knowledge in an active, self-directed and constructive way. ICT is not only perceived as an instrument, which can be added for existing teaching methods but also seen as an important instrument to support new ways of teaching-learning process. It is being integrated into the teaching-learning process in various educational institutions in Nigeria and the world in general.

This research revealed that the emergence of ICT can greatly improve the teaching-learning process in Osun state Colleges of Education teachers, Nigeria. ICT facilities are scarcely available in most Osun state Colleges of Education, Nigeria. However, there is still need for more training and retraining of teachers too on the use of ICT. Also, it is recommended that constant power supply should be made available in schools so as to avail teachers, more opportunity of using these facilities.

Finally, Non-Government Organizations, College of Education stakeholders, Religious Organizations, etc. should assist in providing the required ICT infrastructure in Osun state colleges of education in other to attain quality assurance through Teachers' Effectiveness.

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