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TEACHERS' ASSESSMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY INTEGRATION INTO TEACHING AND LEARNING AT PUBLIC SECONDARY SCHOOLS IN DELTA STATE

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Abstract

This study examined teachers' assessment of information and communication technology integration into teaching and learning at public secondary schools in Delta State. Three research questions and three null hypotheses were formulated to guide the study. The population for this study consist of 4,987 teachers public secondary schools in Delta State. A sample of 120 teachers was selected using purposive sampling technique. The instrument for data collection was a questionnaire titled "Teachers' Assessment of Information and Communication Technology Integration into Teaching and Learning (TAICTITL) was used to collect data for the study. The questionnaire was divided into two section of A and B. Section A to elicit information about the demographic data of the respondents while Section B contained the questionnaire items. The questionnaire was patterned after a Likert scale of Strongly Agree (SA), Agree (A) Disagree (D) and Strongly Disagree (SD). The questionnaire was subjected to pilot testing using teacher who were not part of the study. Their responses were estimated using Cronbach alpha and a coefficient of 0.85 was obtained a measure of internal consistency. The data were analyse using inferential statistics of Pearson Product Moment Correlation Coefficient at 0.05 level of significance. The result of this study showed that many public secondary school teachers in Delta State lack competence in the use of ICT tools in teaching and learning. Secondly, many of them have this phobia that ICT will replace them in the classroom. Lastly, some of them see ICT as a disturbance. Based on the findings, it was recommended that among others that Government should create ICT awareness for teachers in secondary schools in Delta State, and Government should organize regular trainings, seminars and workshops where secondary teachers will be taught on the utilization of ICT tools in teaching and learning.

Key words: ICT, teachers' assessment, teaching and learning, and public secondary schools.

Introduction

The digital age, as learning should not be confined to the classroom alone, because teaching/learning has gone digital. Information and communication technology (ICT) has the power to transform education to this

level, if used effectively in the classroom. It will give our education its pride place in this digital world. We need the advancement of technology in our everyday life. However, Information and Communication Technology (ICT) can be defined as diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information. ICT refers to technologies people use to share, distribute, gather information and to communicate through computers and computer networks. According to Avgerou (2006), it can be viewed as a complex set of various goods, applications and services used for producing, distributing, processing, transforming information, (including) telecoms, TV and radio broadcasting, hardware and software, computer services and electronic media. It also represents a cluster of associated technologies defined by their functional usage in information access and communication, of which one of it is the internet.

These technologies include computer, the Internet, broadcasting technologies (radio and television) and telephony. In the mid 20th century, the importance of information and communication technology increased immeasurably as a result of quest for more knowledge and social progress. It also involves being able to seek out and use information stored in satellite, radio, television, telephone, video, tape recorders, compact disc, computer and internet (Okwunanso (2016); Tinio (2018). However, due to the complex nature and multiple applications of information and communication technologies (ICTs) the World Bank viewed it as the set of activities which is facilitated by electronic means and processing, transmission and display of information. On the other hand, (Rodriguez & Wilson, 2000). Hargittai (2008) defined the internet as technical and functional worldwide network of computers. Sociologically, it can also be looked at as a network of computer users which make up vast amounts of information available. It is what our education system of today needs. ICTs, represented by the internet, deliver at once a worldwide broadcasting capacity, a mechanism for information dissemination, a medium for interaction between individuals, a market place for goods and services (Kiiski & Pohjole, 2000).

According to Iloanusi & Osuagwu (2010), in their article titled “ICT in Education: Achievement so far in Nigeria”. ICT, when applied to education, enhances the delivery and access to knowledge, and improves the curriculum. It produces more robust learning outcomes compared to the old and traditional method of teaching where there is no ICT. It makes room for critical thinking and offers unlimited means of achieving educational goals. The problem is not in ICT itself, but in its application in the delivery of knowledge and actualization of goals of teaching–learning. Four major approaches have been identified for the effective application of ICT. They are the emerging, applying, infusing and transforming approaches that constitute ICT optimization stages in education. ICT, if employed in education could be of immense benefits in modes of e-learning, blended learning, mobile learning, distance learning and online learning. E-learning comprises of all kinds of technology. ICT tools which include computer, networks, communication and mobile technologies has enhanced and extended learning outcomes as evident

from past studies. These technologies help deliver and make education and information accessible and affordable to all.

According to the National Policy on Education (4th edition) (2004), the library is at the heart of the education enterprise. The virtual library has created a platform for sharing knowledge that will revive the Nigerian schools through the provision of current books, journals and other information resources using digital technology. The objectives of the National Virtual Library project include: improvement of quality of teaching at all levels of education in Nigeria through the provision of current books, journals and other library services, enhancement of access to academic libraries serving the education community in Nigeria to global library and information resources; and enhancement of scholarships, research and lifelong learning through the establishment of permanent access to shared digital archival collections. In order to achieve and sustain these laudable policy objectives, government shall make provision for appropriate information and communication technology (ICT) facilities, especially the computers to ensure that the benefits of the virtual library penetrate all levels of education in Nigeria. Teachers as well must be ready to harness these ICT tools in the classroom in order to make learning livelier and more attractive. Many skills and competencies must be put in place in our educational system for ICT integration and usage to thrive. Teachers need to upgrade themselves with the new trends and skills in these new technologies. Many researches on ICT inclusion in education has shown that teachers' inability to use ICT facilities in teaching is one of the major setbacks to the success of its integration in our education system.

However, one of the major challenges why ICT is not thriving in the Nigerian education system is the perception of teachers in the use of ICT tools in teaching and learning. According to Afamasaga- Wright (2010) “educational change depends on what teachers do and think, teachers' perspective on ICT will affect how ICT is integrated into teaching of subject”. Also, Levin and Wadmany (2016) noted that teachers' beliefs regarding teaching and learning change over three years within a technology –rich environment and these changes had manifested in modified classroom behavior. They also found out that as teachers beliefs change so do their perception.

Several researches indicated that one of the obstacles that prevent teachers from using ICT tools in their teaching is lack of competence. According to Ocharo, Irene and Momanyi (2015) teachers' incompetence in the use of ICT tools, inadequate computer facilities, software, electricity supply and policy regarding the use of computers in the learning process has contributed to the absence of computer in public secondary schools. It is appalling that so many secondary school teachers in most secondary schools cannot operate the android phones, some of them cannot operate the computers talk more to browse the internet. This is because they are adamant to change, they are not moving along with the new trends. This is a big problem to our education system. You will see a young secondary school leaver, he/she cannot operate the computer because he/she was not taught, is a problem. This

can hinder national development. According to Becta (2004), much of the research proposes that this is a major obstacle to the uptake of ICT by teachers in the classroom. In Becta's survey of practitioners (2004), the issue of lack of competence was the area that attracted most responses from those that took part. Beggs (2001) asserted that teacher's "fear of failure" causes lack of confidence. On the other hand, Balanskat et al (2006) found that limitations in teachers ICT knowledge makes them to have phobia in using them in their teaching. Similarly, Becta (2004) said that teachers consider themselves not fit in using ICT tools in front of the students who perhaps knows more than they do. And for that reason, they are afraid of entering the classroom with limited knowledge. It was argued that lack of teacher's motivation to use ICT facilities in teaching is a problem (Cox, Preston, 1999b; Osborne & Hannessy, 2003; Balanskat et al 2006). If this teacher obstacle can be overcome, teachers' will find out that these technologies are helpful in the classroom and in their own personal work.

According to Tinio (2002), another teachers' obstacle is teachers' anxiety over being replaced by technology or losing their authority as teachers, thereby making the learning process more learner-centered. An acknowledgement of this obstacle in ICT adoption can be alleviated only if teachers have a keen understanding and appreciation of their changing role. According to Zhao and Cziko (2001) three conditions are required for teachers to introduce Technology into their classrooms viz; teachers should believe in the effectiveness of technology, that the use of technology will not cause any and finally that they have control over technology. Demetriadis et al. (2003) reached similar conclusions in their research study, that training efforts are generally welcomed by teachers but consistent support and extensive training is necessary in order for them to consider themselves able to integrate ICT in their teaching methodologies. However, from the foregoing, it can be seen that ICT has not been given its pride place in Nigeria. But should these challenges be surmounted; Nigeria will soar higher in technology. Hence, this study seeks to answer the question; to what extent is teachers' assessment hindering ICT use in secondary schools.

Statement of the Problem

It has been observed that utilization of ICT is confronted by teachers' incompetency and anxiety and perception. The major problem of this study is to determine whether teachers' incompetence in ICT usage, teachers anxiety in the use of ICT and teachers' perception in the ICT usage constitute obstacles in Information and communication technology integration in teaching and learning at public secondary schools in Delta State

Purpose of the Study

Generally, the study examined teachers' assessment of information and communication technology integration into teaching and learning at public secondary schools in Delta State. Specifically, the study sort to:

1. determine the relationship between teachers' level of competence and ICT usage amongst secondary schools in Delta State.
2. examine the relationship between teachers' anxiety and ICT usage amongst secondary schools in Delta State.
3. determine the relationship between teachers' perception and ICT usage amongst secondary schools in Delta State.

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance.

- H₀1: There is no significance relationship between teachers' level of competence and ICT usage amongst secondary schools in Delta State.
- H₀2: There is no significance relationship between teachers' anxiety and ICT usage amongst secondary schools in Delta State.
- H₀3: There is no significance relationship between teachers' perception and ICT usage amongst secondary schools in Delta State.

Methodology

This study employed a descriptive survey design aimed at investigating teachers' assessment of information and communication technology integration into teaching and learning at public secondary schools in Delta State. The reason for employing survey design is because of its usefulness in collecting data for analysis based on small sample that represent the entire population. The population for this study consists of 4,987 teachers' public secondary schools in Delta State. A sample of 120 teachers was selected using purposive sampling technique. This is based on the researcher's judgment of selecting a sample that deems fit to represent the entire population. The instrument for data collection was a questionnaire titled "Teachers' Assessment of Information and Communication Technology Integration into Teaching and Learning (TAICTITL)" was used to collect data for the study. The questionnaire was divided into two sections of A and B. Section A to elicit information about the demographic data of the respondents while Section B contained the questionnaire items. The questionnaire was patterned after a Likert scale of Strongly Agree (SA), Agree (A) Disagree (D) and Strongly Disagree (SD). The questionnaire was subjected to pilot testing using teacher who were not part of the study. Their responses were estimated using Cronbach alpha and a coefficient of 0.85 was obtained a measure of internal consistency. The data were analyse using inferential statistics of Pearson Product Moment Correlation Coefficient at 0.05 level of significance.

Results

Hypothesis one

There is no significance relationship between teachers' level of competence and ICT usage amongst secondary schools in Delta State.

Table 1: Pearson Product Moment Correlation of the relationship between teachers' level of competence and ICT usage amongst secondary schools in Delta State

Variables	N	Pearson (r)	Post-test Mean	Gain in Mean
ICT	120	.630	.000	H ₀ 1 is Rejected
Teachers competence	120			

$\alpha = .05$

Table 1 showed Pearson Product Moment Correlation between ICT and teachers competence. It showed a correlation value (r) = .630 and a p-value of .000. Testing at an alpha level of .05, the p-value is less than the alpha level. Therefore, the null hypothesis is rejected. This means that there is a significant relationship between teachers' level of competence and ICT usage amongst secondary schools in Delta State.

Hypothesis 2

There is no significance relationship between teachers' anxiety and ICT usage amongst secondary schools in Delta State.

Table 2: Pearson Product Moment Correlation of the relationship between teachers' anxiety and ICT usage amongst secondary schools in Delta State

Variables	N	Pearson (r)	Sig (p-value)	Decision
ICT	120	.825	.000	H ₀ 1 is Rejected
Teachers anxiety	120			

$\alpha = .05$

Table 2 showed Pearson Product Moment Correlation between ICT and teachers' anxiety. It showed a correlation value (r) = .825 and a p-value of .000. Testing at an alpha level of .05, the p-value is less than the alpha level. Therefore, the null hypothesis is rejected. This means that there is a significance relationship between teachers' anxiety and ICT usage amongst secondary schools in Delta State.

Hypothesis 3

There is no significance relationship between teachers' perception and ICT usage amongst secondary schools in Delta State.

Table 3: Pearson Product Moment Correlation of the relationship between teachers' perception and ICT usage amongst secondary schools in Delta State

Variables	N	Pearson (r)	Sig (p-value)	Decision
ICT	120	.722	.000	H ₀ 1 is Rejected
Teachers perception	120			

$\alpha = .05$

Table 3 showed Pearson Product Moment Correlation between ICT and teachers' perception. It showed a correlation value (r) = .722 and a p-value of .000. Testing at an alpha level of .05, the p-value is less than the alpha level. Therefore, the null hypothesis is rejected. This means that there is a significance relationship between teachers' perception and ICT usage amongst secondary schools in Delta State.

Discussion of findings

From the findings of this study on the relationship between teachers' level of competence and ICT usage amongst secondary schools in Delta State in hypothesis one revealed that there is a significant relationship between teachers' level of competence and ICT usage amongst secondary schools in Delta State. This implies that teachers' level of competence is related to ICT usage. This in line with what Ocharo, Irene and Momanyi (2015) said that teachers' incompetence in the use of computer technology, computer facilities, software, policies regarding the use of computers in teaching and learning has contributed to absence computer usage in public secondary schools.

Secondly, the study on the relationship between teachers' anxiety and ICT usage amongst secondary schools in Delta State in hypothesis two revealed that there is a significance relationship between teachers' anxiety and ICT usage amongst secondary schools in Delta State. This means that teachers' anxiety is related to ICT usage. This is in line with what Tinio (2002) said another teacher obstacle is teacher anxiety over being replaced by technology or losing their authority in the classroom and the learning process becomes more learner-centered. This is because they don't know their roles, ICT has not come to throw them out of job but to facilitate and make teaching-learning process easy. Some said that, they are not afraid of ICT tools and their usage but that they are not ready to use them. From the look of things ICT has come to stay. The earlier they embrace it the better.

Lastly, the findings on the relationship between teachers' perception and ICT

usage amongst secondary schools in Delta State in hypothesis three revealed that there is a significance relationship between teachers' perception and ICT usage amongst secondary schools in Delta State. This indicates that teachers' perception is related to ICT usage. This corroborate a study carried out by Afamasaga- Wright (2010) “ educational change depends on what teachers do and think, teachers perspective on ICT will affect how ICT is integrated into teaching of subject”. Also, Levin and Wadmany (2016) noted that teachers' beliefs regarding teaching and learning change over three years within a technology –rich environment and these changes had manifested in modified classroom behavior.

Conclusion

The major conclusion drawn from the findings showed that there is a significant relationship between teachers' level of competence and ICT usage amongst secondary schools in Delta State. It equally, revealed that there is a significance relationship between teachers' anxiety and ICT usage amongst secondary schools in Delta State and finally, revealed that there is a significance relationship between teachers' perception and ICT usage amongst secondary schools in Delta State.

Recommendation

Based on the findings the following recommendations were made.

1. Government should create ICT awareness for teachers in secondary schools in Delta State, where they will be educated and exposed to the enormous benefits of these technological tools both in their teaching careers and their everyday life.
2. Government should organize regular trainings, seminars and workshops where secondary teachers will be taught on the utilization of ICT tools in teaching and learning.
3. Government should give make ICT tools, especially the computers available in secondary schools to improve the utilization of ICT in teaching and learning.

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