

USE OF INTERACTIVE WHITEBOARD BY SECONDARY SCHOOL TEACHERS IN A NIGERIAN CONTEXT

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Abstract: The use of educational technology device in teaching and learning has emerged over the years, in the Nigerian education system. Despite their affordances and usage in some of the secondary schools, many teachers find it difficult to integrate ICT related tools especially, Interactive Whiteboard (IWB) in their classroom activities. The 21st century teachers teaching in the developing countries in Africa, particularly in Nigeria, face some challenges in the area of effective use of IWB in their classrooms. This study investigates the use of Interactive Whiteboard and examine the influences of teachers' prior ICT experience on the use of IWB. This study employed qualitative research design with 7 teachers to ascertain the teachers' perceptions and use of IWB in teaching through interview technique. The data collected was analyzed by using quantitative methods of data analysis. Thematic based approached was applied for the qualitative data obtained. The finding revealed that teachers with prior ICT experience have positive perception towards the use of IWB in teaching. In addition, the prior ICT experience of the teachers seem to have influenced the use of IWB.

Keywords: IWB, Prior ICT Experience, Teachers' perception, Technology device.

1. INTRODUCTION

The significance of using digital devices in the education system cannot be over emphasized. The roles it plays in the field of teaching and learning is now superseded the traditional instructional aid (Suman & Sinha, 2013), it gains increasing popularity around the globe (Betcher & Lee, 2009; Kivunja, 2015). Some researchers states that, technological development have change many human activities according to today's technological demands (Monge & Contractor, 2003). Information and communication technology devices have been integrated into teaching and learning activities to optimize the business of education in many parts of the world (Onasanya, Shehu, Oduwaiye, & Shehu, 2010). By and large, the acceptability of technology is far-reaching and yet its predicament in the present day educational policy of many developing countries like Nigeria, is still at stake (Rosen & Weil, 1995; Thierer, 2000), (Aduwa-Ogiegbaen & Iyamu, 2005). An observation was made by researcher that, over the years, the federal government of Nigeria has initiated or adopted many ICT related policies aimed at guiding the development of the sector and harnessing its power for national development (Yusuf (2005a). Nigeria, like other developing countries in Africa faces the inevitability of the fast technological and market convergence of the global ICT industry (Evoh, 2007; Okoli, 2011). Therefore, there is needs to introduce new ICT policy frameworks to accommodate, reflect, and maximize the potential of ICT tools for national development (Yusuf, 2005a). The reality of ICT convergence has not yet been reflected in Nigeria, where the institutions that regulate and/or develop the ICT sector still function as distinct actors in the industry, without much coordination. (Yusuf, 2005a). Though, there had been significant enthusiasm in the last decade, especially with regards to mobile technology, however, lack of industry convergence in the Nigerian ICT industries has resulted in fragmented policy implementation largely due to insufficiency in the management resources (harmonization, 2012).

Similarly, the Nigerian government has stepping effort to make ICT become an integral part of the educational system of the country and this effort echoes through its ICT policy on education, the policy has begun to be implement and to an extent some universities and colleges are able to integrate some aspects of educational technology into classroom practice, though, the Nigerian national policy for Information Technology review, 2005 states that; "Information Technology (IT)

is the bedrock for national survival and development in a rapidly changing global environment, and challenges us to devise bold and courageous initiatives to address a host of vital socio-economic issues such as reliable infrastructure, skilled human resources, open government and other essential issues of capacity building” (Yusuf, 2005a).

Moreover, the Nigerian government provides basic infrastructure to the educational sector of the country in order to integrate ICT into primary, secondary and tertiary institutions. In other word, this provision is an attempt of translating the National policy on education of the Federal Republic of Nigeria, 2004 which stated that; “*Government will provide basic infrastructure and training at the primary and junior secondary levels, ICT has been made a pre-vocational elective, and is a vocational elective at the senior secondary school*”(Yusuf, 2005a);(Olatokun, 2006). Furthermore, the Nigerian national ICT Policy on education categorically states that if the policy is fully implemented, it will effectively promote teaching and learning activities in the educational industry of the nation, in order for the Nigerian government to actualize the dream and aspiration of integrating ICT into the classroom, therefore, it is paramount for the government to provide the necessary infrastructure and train the staff of educational sector in the country, in addition, government should develop a pool of IT engineers, scientists, technicians and software developers; increase the availability of trained personnel; provide attractive career opportunities; develop requisite skills in various aspects of IT; develop made in Nigeria software to earn foreign exchange; to develop domestic computer components as observed by (Olatokun, 2006). Nigeria formulated an ICT policy strategy as reported in the study which include:

“making the use of IT mandatory at all levels of educational institutions through adequate financial provision for tools and resources; developing relevant IT curricula for the primary, secondary and tertiary institutions; A virtual university system shall be established; encouraging IT companies with appropriate incentives to compel them to invest in education and training through certification for tax rebates through existing government bodies experienced in such matters such as the Industrial Training Fund (ITF) and Centre for Management Development (CMD); establishing study grants and scholarships to deserving Nigerians; promoting “Training the Trainers” scheme using existing establishments such as the National Youth Service Corps (NYSC), the National Directorate of Employment (NDE) to boost capacity building in IT; empowering IT institutions and development centres to develop IT capacities initially at zonal, state and local levels; facilitating the growth of private and public sector dedicated primary secondary and tertiary IT educational institutions” (Adewole & Fakorede, 2013)

Despite governments’ commitment, observations were made that, there are many factors that are militating against the actualization of the policy at the school and classroom level. Some of the factors identified includes inadequate supply of infrastructure, electricity, internet connectivity, man-power skills as well as funding (Aduke, 2008). Nigerian educational system has succeeded in partial integration of Information and Communication Technology (ICT) despite the hindrance, Government on its part provided some infrastructural facilities such as computer laboratories (Akintunde, 2006), internet connectivity (Harward et al., 2008; Oyelaran-Oyeyinka & Adeya, 2004). This research study focus on new technological device called Interactive Whiteboard (IWB) which is a new technological device introduced to the educational system of the study area. The device has embedded with features which can bring interaction among students during teaching and learning and it enhances collaborative learning. in addition, it improves collaboration amongst the learners, it shapes and brings more opportunities to the educational practice. Similarly, very few secondary schools in the study area have Interactive Whiteboard (IWB) in their classes (Aduwa-Ogiegbaen & Iyamu, 2005). most especially in Borno state, Consequently, most teachers are not familiar with this new device (IWB) and are not optimally using the IWB in teaching and learning business (B. A. Mustapha & Gabasa, 2010).

Research study indicated that a new illiteracy, also known as computer illiteracy, which encompasses the schools to make provision for digital devices such as computers and train personnel to handle the educational content for successful delivery in a digital way (Poole (1996).

The new literacy is now the focus of the developed nations and it is considered to be the computer know-how (Hoffman & Blake, 2003; Shapiro & Hughes, 1996). Few research study made the developing nations to emulate the developed countries around the globe by encouraging the new literacy among its schools (Rose & Straub, 1998). There is a strong belief and clear evidence shows that computer can enhance instructional processes by helping students to have easy access to learning (Aduke, 2008; Orr, 2008; Warschauer & Healey, 1998). In addition, the 21st century teaching in the developed nations seems to promote student engagement, increase collaboration between teachers and their learners’. Yet little is known compared to the developing countries like Nigerian educational practice (Tella, Tella, Toyobo, Adika, &

Adeyemi, 2007). Moreover, in this aspect Nigeria is seen to face some challenges as well as in the area of integrating ICT into the education sector (Tella, Tella, Toyobo, Adika, & Adeyemi, 2007). Despite the laudable ICT policy on education implemented by Nigerian government, still the effective utilization of technological tools in the classroom is very low (Aduke, 2008).

Number of research study have reported that, digital tools enhance and facilitate instruction (Burnett, 1994; Fitzgerald & Werner, 1996). Furthermore, a researcher maintain that the application and integration of ICT into the classroom is paramount for the purpose of enhancing more opportunities for the learners to acquire and utilize the vast knowledge in the field of digital technology (Aduke (2008). Some research study claim that, digital technology tools could make learning more successful and fruitful (Siemens, 2014). Another research study states that, how digital technology tools play an important roles in the classroom, the study concluded that teachers who had experience of using ICT emphasized on how it makes students active and control their studies with it (Hakkarainen et al. (2000).

Furthermore, digital technologies, also identified hardware and software as application tools as well considered as the basic components of all digital tools used in the classroom setting (Scheffler & Logan, 1999). The potentialities of digital tools over the years have dramatically changed the educational setting to increase the teaching and learning practice (Al-Faki & Khamis, 2014). Today's learners are regarded as digital age learners or 21st century learners' due to the availability and easy access to technology both at home and in the school respectively (Beetham & Sharpe, 2013; Siemens, 2014); (Kivunja, 2015). These have made learning more interesting and motivating to both learners and teachers, moreover, learners today, have grown up in a world where digital tools are very common, the learners are expected to learn in an environment that reflects their lives and their futures (Beetham & Sharpe, 2013; Siemens, 2014). Researchers have now shifted their focus from studies of individual thinking and began to concentrate on how people solved problems in groups using different digital tools and machines with the zeal of assisting collaborative learning (Beetham & Sharpe, 2013). Present day ICT has infiltrated the globe at an exceeding pace making information to be readily available from many sources (Fraser, 2015). Learners in this digital age can learn independently with little effort from teachers who could only serve as pace setters (Kennewell, Tanner, Jones, & Beauchamp, 2008).

The hindrance of ICT integration in the education sector may lead to the failure to meet the yearning and aspiration of the 21st century learners (Hennessy, Wishart, et al., 2007; Khan, Hossain, Hasan, & Clement, 2012). Successful use and integration of educational technology in our schools probably depends upon the teachers' capabilities to facilitate interaction among the students (Ajayi, 2008; Kwache, 2007). However, many Nigerian teachers are said to have less prior ICT experience in using technologically driven pedagogy approach in their classrooms (Tella et al., 2007; Yusuf, 2005c). Consequently, this may hinder effective integration of many technology tools especially IWB (Aduwa-Ogiegbaen & Iyamu, 2005). Moreover, the factors militating against the full implementation of ICT in Nigeria may include funding, inadequate infrastructure, lack of manpower and skills, inadequate application of technological tools for effective use in the classroom and level of teachers technological know-how (Esharenana, 2010).

Despite the fact that the Nigerian government invested heavily in the educational sector of the country and the budgetary allocation of educational sector in Nigeria has kept on increasing year in year out, but, the full implementation of ICT in Nigerian secondary schools has not yet been realized due to high level of corruption (Jones, Beynon-Davies, Apulu, Latham, & Moreton, 2011). The actual funds release for intended projects are hardly spent, rather it goes to the pockets of some few individuals who are assigned to execute particular projects, unless the government takes some necessary measures to wipe out the corrupt practices among such individuals from the system for actualizing the implementation of ICT in the Nigerian schools may not be realized (Nwabuzor, 2005).

Several number of researchers identified that, to fully integrate ICT into the educational sectors, provision of infrastructure is paramount, further maintain that, globally technology evolution, certainly has unmarked Nigeria's insufficiency in the area of technology infrastructure development and the use of ICT, many technologically advanced nations around the globe are fostering new technologies that will develop the 21st century as well as program digital age learners for technological advancement demands, Nigeria and some developing nations are emulating developed countries to gear up to meet the inadequate ICT infrastructure (Greenhow, Robelia, & Hughes, 2009); (Arikpo, Osofisan, & Usoro, 2009). Lack of infrastructure could dwindle the use of ICT in Nigerian secondary schools (Asogwa, Ugwu, & Ugwuanyi, 2015).

Lack of manpower and skills are major challenges that affect integration of ICT into Nigerian schools. Some of the schools are partially equipped with infrastructure but the skills of manpower to run such facilities is the question (Igun, 2005). Therefore, there is need to train personnel to overcome this problem. Most of the technology tools used in Nigerian schools today, for example, overhead projector (OHP), slide and sound projector, film streaming and opaque projector and so on do not seem to be up-to-date and some may be obsolete compared to the 21st century digital age tools like, podcasts, Voicethreads, Myspace, skype, YouTube, blogs, Wikipedia, IWB among others (Robin, 2008). Today's learners are more acquainted with technology than their instructors, learners grows up in a digital society where technology becomes the order of the day (Al-Faki & Khamis, 2014). To integrate 21st century digital tools in Nigerian schools, there is every need to provide the required infrastructure as well as manpower and skills to fully implement and optimally use them, since many Nigerian teachers seem to have less prior ICT experience (Rosen & Weil, 1995). There is need for human capital training that will assist teachers to use the tools in the classroom (Bingimlas, 2009). However, the absence of the ICT may dwarf full scale of acceptance of ICT into the Nigerian educational sector, most especially, among secondary school teachers. Despite the fact that digital technologies have a notable effect on all areas of human endeavor, especially the educational sector of any developing country like Nigeria, it is not yet fully harnessed (Ben & Ashang, 2013). The application and use of digital technology tools in Nigerian secondary schools will bring more benefits to the students and make them potentially active in their studies and improve the standard of education system toward economic building of the country (Goshit, 2006).

Since the successful integration of ICT into the classroom depends upon the competencies and experiences of teachers and how they operate the particular technology device, teachers' prior ICT experience and how they can integrate IWB into classroom seems to be the focus of the study. Thus, this study investigates the prior ICT experience of teachers, how it influences the use of IWB as well as teachers' perception on the use of IWB.

1.1 Statement of Problems

Many young learners enjoy new things as part of teaching and learning business (Gee, 2005). Therefore, integrating new teaching tools may promote learners interest – thereby making learning easy and motivating (Torff & Tirota, 2010). Despite many new digital tools for instruction in classroom, not many are fully tapped in Nigerian schools (Smaldino, Lowther, & Russell, 2008; Weigel, 2002; Aduwa-Ogiegbaen & Iyamu, 2005; Igwe, 2005). IWB is considered by many studies as effective instructional device which integrate multimodal interface in teaching and learning. This considers all the learners' interest and learning characteristics (Biggs & Collis, 1991; Kress, 2001; Moreno & Mayer, 2007). Many research studies reported that, educational institutions in the developed world, the use of IWB became part of the classroom instructions (Beauchamp, 2004; Betcher & Lee, 2009; Domingo & Marquès, 2011; Gillen, Staarman, Littleton, Mercer, & Twiner 2, 2007; Higgins et al., 2005; Knight, Pennant, & Piggott, 2004; Mercer, Hennessy, & Warwick, 2010; Sharma & Barrett, 2011). Despite its pedagogical and practical importance IWB is yet to be fully implemented in the Nigerian secondary schools (M. A. Mustapha, Wali, & Ali, 2015; Zevenbergen & Lerman, 2007). Also there is no much research on its impact on the school instruction in Nigeria (Chijioke, 2013), especially in the study area (Borno State) (M. A. Mustapha, Wali, & Ali, 2015). Therefore, this study will investigate the use of IWB in secondary school setting in Borno state, Nigeria.

1.2 Objectives of the Study

- i. To examine teachers' prior ICT experience

1.3 Scope of the Study

This research work is limited to Model Secondary School Kashim Ibrahim College of Education, Maiduguri-Borno State-Nigeria. Data for the study is also limited to the year 2016. It focused on the ability and acquaintance of teachers to use educational technology device in lesson delivery. The lessons considered for the studies last for about three (3) months, and in each month a teacher conducts four (4) lessons using the technology device (IWB) totaling twelve (12) lessons per teacher.

1.4 Significance of the Study

This research work will add to the number of literatures on the use of educational technology device in secondary schools. It will also furnish policy makers with data on whether teacher's skills about using the IWB are up to date or not. Apart from extending the frontier of research on education technology usage in secondary schools, this study will also create avenue for academic discussion.

The findings of this research are intended for the use by the ministry of education official who formulates educational policies and procedures, the school administrators, who are the managers of schools' human and material resources and the teachers who are at the centre to actualize educational purpose.

The ministry of education and all educational practitioners would benefit from the work to reappraise its policies from time to time when the importance of ICT become clear to them, and this can result to laying more emphasis on ICT in the school curriculum. The students who are the recipients of the school curriculum will see the importance and need to become digital literate.

This research will also help teachers to have a better understanding of individual's needs and demand of their profession and the teacher will have a broader view and idea as to its role in enhancing effective learning through the use of IWB in secondary schools.

Lastly the outcome of this research work will be of great benefits to any researcher who may like to conduct research on a similar topic.

1.5 Operational Definitions

For the purpose of clarity and understanding, certain terms used in this research were defined.

MSKICOE: This is an acronym for; Model School Kashim Ibrahim College of Education

Uptake of educational technology device: This refers to the way in which digital tools are optimally use in educational setting.

Teachers: This referred to any person who is capable of impacting knowledge in a school. In Nigerian content the minimum qualification for teaching is Nigeria Certificate in Education (NCE).

Model school: a designated or classified school usually operated under the supervision of tertiary institutions, especially, Universities and Colleges of education of teachers training in Nigeria used as a model in organization and methods of teaching.

Educational Technology device: Any information and communication technology (ICT) related tools means for teaching in the educational programmes.

Interactive whiteboard: is an electronic board, which has sensitive screen use for teaching and found in most of the 21st century smart classrooms

Prior ICT experience: This refers to the teachers who have previous knowledge on the use of Information Communication Technology tools otherwise they received formal training on the use of ICT tools in teaching activities.

2. LITERATURE REVIEW

In this section, some related literatures of past scholars were reviewed.

2.1 Teachers' prior ICT experience and the use of IWB

Recent study shows that digital technology device (IWB) in Nigeria have the potential to revolutionize the quality of teaching and learning when fully integrated into the classroom. The teacher plays a major role toward the integrating the new technologies. Yet, the factors militating the teachers' in using ICT related tools in the classrooms are their readiness and confidence, the efficiency and the gain of this technology tools geared towards the learners in attainment of their objectives (Passey, Rogers, Machell, McHugh, & Allaway, 2004). Many research studies indicates that, despite the potentialities of ICT identified, but its effective integration in teaching and learning business could be influenced by teachers' prior ICT experience, skills and competence of usage of ICT in their day-to-day classroom activities (Butcher & Wilson-Strydom, 2008; Olalere & Taiwo, 2009; Ben & Ashang, 2013; Kennewell & Beauchamp, 2007). However, some research study Supported that, there are evidences indicating that most teachers who have the knowledge and skills competence still partially integrate ICT in their teaching (Moursund & Bielefeldt, 1999). The teacher's characteristics such as experience and level of computer literacy and experience with the ICT tools for teaching and learning can influence integration of technology tool such as IWB (Buabeng-Andoh, 2012). Teachers with ICT experience have more opportunities to use and integrate technology tool into teaching and learning in the classroom activities, but teachers' readiness and preparedness to use ICT tool (IWB) into teaching environment seems to promote the effectiveness of the technology tool and not present in the classroom (Schiller, 2003).

Furthermore, some research study claims that, lack of competence and inexperience teachers are often drawback ICT to traditional learning pedagogy (Kreijns, Vermeulen, Kirschner, Buuren, & Acker, 2013) . Therefore, level of teacher's experience can determine the influence and integration of ICT tools positively to teaching and learning adequately (Russell & Bradley, 1997). Moreover, the successful initiation, implementation and integration of technologies tools in school's curriculum depends strongly on the teachers' experience and capability to facilitate how to use the particular technology tool, it is believed that if teachers perceived technology programs as neither fulfilling their needs nor their students' needs, it is likely that they will not integrate the technology into their teaching and learning. Among the factors that influence successful integration of ICT into teaching are teachers' experience and background towards the use particular technology technology, teachers' experiences are positive toward the use of technology tool then they can easily provide useful insight about the adoption and integration of such technology into teaching and learning processes (Hew and Brush, 2007; Keengwe and Onchwari, 2008)..

Teachers' ICT experience relates positively to their ICT background, those teachers who possesses the experience of ICT may likely exhibit positive attitudes towards the usage of ICT tool (IWB) (Rozell & Gardner, 1999). Positive ICT attitudes are expected to foster technology integration in the classroom. Research study indicates that, "for successful transformation in educational practice, user need to have experience toward the innovation" (Woodrow, 1992; Van Braak, Tondeur & Valcke, 2004).

Teachers with ICT background is paramount for the success of integrating technology into the classroom, considering the importance of teachers technological experience in implementing teaching with technology device (Koehler & Mishra, 2009). However, new technology came with new way of operation and thus poses challenges to teachers with no prior ICT experience to use technology in classroom activities, perhaps, teaching is a complex activity that requires an integration of different experiences and skills to be successful (Koehler, Mishra, and Cain, 2013). One of the skills for effective teaching and learning is considered to be skills in technology (Hew & Brush, 2007). ICT skills could promote effective teaching at the part of the teacher, "the expert teacher needs to make creative links between what is being learned (content), how it is taught (pedagogy), and the appropriate tools (technology)", teachers need to relate their mastery of subject matter to the technology use in their classrooms, teachers with prior ICT experience may be a factor in full implementation of ICT into the classroom (Koehler, Mishra, & Cain 2013).

Some researchers provide definition of the ICT as, "being able to handle a wide range of varying computer applications for various purposes" (van Braak et al., 2004). Teachers' ICT competence is largely determinant of integrating technology tool in teaching and learning. Number of evidence suggests that, "most of the teachers who reported negatively or neutral attitude towards the integration of ICT into teaching and learning processes lacked knowledge and skills that would allow them to make "informed decision" (Berner, 2003; Na, 1993; Summers, 1990; Aloteawi, 2002; Bordbar, 2010: p.253).

This largely consider how the teachers use particular technology tool for a particular context for successful delivery of their lessons, teachers should embrace the Technology Pedagogy Content Knowledge. According to a study by Koehler, Mishra, and Cain (2013) described TPCK as "the basis of effective teaching with technology, requiring an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students' prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on existing knowledge to develop new epistemologies or strengthen old ones". Furthermore, another research study, which described TPCK as "a framework for teacher knowledge and technology integration" (Mishra and Koehler 2006). In the 21st century, ICT comes up with new direction in learning on how to process and access knowledge in the field of all educational endeavors information technology also polish ways in which methods are used to engage students (Koehler, Mishra, and Cain (2013).

Some researchers observed the use of IWB by teachers in their studies and reported the frequency and purpose of using IWB in their lessons (Higgins et al., 2005). IWB is employ in uptake, repeat, or probing questions in teachers during lessons. Moreover, IWB is used in direct teaching and questioning of the whole class as well as facilitate classroom discussion, despite these Aduke (2008); Walker (2002b) lamented that some teachers in spite of the presence of IWB in their classes, they prefer using traditional talk-chalk. This is a practice among many Nigerian classroom teachers (Aduke 2008; Walker 2002). On the contrary, many researchers in the field of education most widely accept and say their minds on the benefit of incorporation of ICT to teaching and learning (Demetriadis et al., 2003; Galanouli, Murphy, & Gardner,

2004; Zhao & Cziko, 2001). Use and integration of IWB in the classroom perceived to be positive to many teachers and students as well encourage effective teaching and learning activities (Kearney & Schuck, 2008; DiGregorio & Sobel-Lojeski, 2010; Whyte, Beauchamp, & Hillier, 2012). Moreover, use of IWB belief to be motivating and ease teaching and learning (Glover, Miller, Averis, & Door, 2005). Proper integration of ICT into the classroom, it may enhance interaction between the teachers and students (Smith, Hardman, & Higgins, 2006)

3. RESEARCH QUESTIONS

This study investigates the experience of teachers in the field of educational technology during lesson, in order to identify their problems with integrating the technology device (IWB) into the classroom. The researcher in this study tried to answer the following questions:

- i. What are the teachers' prior ICT experience

4. METHODOLOGY

Methodology is the link that give shape for any research by introducing philosophical position based on ontology, epistemology and the strategies or tool that are used in carrying out the research. It is an instruction which help the researcher's experience throughout the study Cohen (2013). This chapter presents the procedure and method employed in conducting this research. The research design, participants, method of data collection, procedure for data collection and method of data analysis were presented.

Both quantitative and qualitative research, consist of an explicit that is audible, which mostly accorded with disciplined and has systematic approach to research problems, using the technique which is most appropriate to the research questions being asked (Hancock, Ockleford, & Windridge, 1998). Most of the research in the social sciences such as (psychology, sociology and anthropology) have interest in studying human attitude and behaviour and the social world inhabited by human beings, which relate to difficulty in trying to explain human attitude and behaviour in quantitative method. People behave in a distinct ways and to understand how and why can only be determine by means of measurements. Qualitative research attempts to broaden understanding of how things happens the way they are in the social world (Hancock, Ockleford, & Windridge, 1998). To achieve a successful outcome of this study, the researcher employed qualitative methods of approach, this derived from methodology, ontology and epistemology. The study focus on uptake of interactive whiteboard by secondary school teachers and explore on how does the teachers prior ICT experience influence the use of IWB and their perception towards the use of IWB in teaching. The researcher adopted a position of interpretative; which deal with social world and trend as well view the relationship by discovering new things and collect data from the participants setting (Staff Model School) and prove by testing. According to researchers assert that, "Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings and memos to the self" ((Richardson, Denzin, & Lincoln, 2000)). Purposely this researcher study employed qualitative approached to explain or make interpretation by naturalistic approach to the natural world. This study makes some investigation under natural setting and explore the findings by interpreting the phenomena from the data collected (Johnson & Christensen, 2008).

Research Design:

Both qualitative and quantitative procedures was used to collect data required to solve the research questions. The instrument consists of observation and semi-structured interview. The qualitative (observation) data dealt with how, why and when teachers use IWB in their teaching. Quantitative (interview) which dealt with teachers' perceptions and their influence towards the use of IWB in teaching. The research design employed to the current study is most appropriate considering the method employed in the collection of the data. Moreover, a study that collected data through observation and interview are considered to be a qualitative research (Cohen, Manion, and Morrison (2013); Jamshed (2014)).

Research Participants:

This study adopted a purposive sampling technique to obtain data on the uptake of interactive whiteboard device by secondary school teachers in Nigerian context. Denscombe (2014), describes the technique, operation on the principle that data obtain through concentrating on a small number of participants who are selected based on their characteristics on relevancy and knowledge. For this research, 7 secondary school teachers, who have ICT experience, were selected from a

model secondary school in Nigeria. All participating teachers selected used interactive whiteboard in their teaching activities and have prior ICT experience. The researcher used a qualitative method of data collection to investigate prior ICT experience of teachers and their perception on the use of IWB in teaching.

Data Collection:

The data for this research was collected through quantitative (interview) method, the researcher interviewed the participatory teachers, employing a focus group approach. This method of data collection is purely a qualitative method as maintained by (Cohen et al., 2013; Creswell, 2013).

Interview Procedure:

The interview was conducted after the classroom observation to ascertain how, when and why the teachers use the IWB during their lessons during the period of the study. The interview also elicits responses of the participatory teacher about their perception on the use of IWB. The researcher conducted a focus group interview across 7 participatory teachers. The interview method was used to support the data collected through the observation. A semi structured interview questions was conducted with the teachers using a focus group approach after the classroom observation, which lasted for a period of three months of the study. Focus group interview is one of the qualitative method of approach in interview method. The teachers were briefed on the conduct and procedure of the interview. The interview focus on the teachers' prior ICT experience.

The interview was conducted within the school premises (computer laboratory). The centre was constructed purposely for computer lessons/practical, as at when the laboratory is free from lesson/practical the centre is mute and siren. Which is appropriate for conducting a focus group interview (Ritchie, et al, 2013). The interview lasted for about 35 minutes and the process is recorded, transcribed and group into themes (see appendix 2).

Method of Data Analysis:

To analyse the data collected for this study, the researcher employed both qualitative and quantitative methods of data analysis. The study maintained that, qualitative and quantitative method of data analysis can be best described as triangulation method or mixed method (Jick (1979). This method is appropriate in social sciences and education (ibid). The qualitative analysis, data collected through the interview were analyzed using thematic-based method. A thematic – based approach according to Braun and Clarke (2006); Guest, MacQueen, and Namey (2011) Bulsara (2015) is a type of method strictly use for “identifying, analyzing and reporting patterns (themes) within data. It minimally organizes and describes the data set in (rich) detail. However, frequently it goes further than this, and interprets various aspects of the research topic” p79. The qualitative data in this research study answer research question 1, 2 and 4. For the quantitative analysis, data collected through the observation were analyzed using a descriptive statistic (simple Percentage %), in order to answer research question three (3).

Ethical Issue:

The researcher followed appropriate channel to obtained permission and considers ethical issue on conducting this study, by writing a letter to the Director of the school to gain access to the school (see appendix 3), an approval was granted (see appendix 4). The participants were notified to give an audience to brief them on their roles in the research. The 7 teachers who participated in this research were provided with participant consent form before scheduling for a meeting with them. This was done to enable them read and understand the purpose of the study, have a clear mind and identify their roles and rights to withdraw at any time. It was also to assure them that confidentiality and anonymity would be preserved, for that pseudonyms. This is supported by a study as stated as, “In the most radical understanding, all statements about the external world have such strong subjective elements that no shared observation can exist. The acknowledgement of the role of interactions between researchers and the object of the research poses many ethical issues; among others, whom to accept as a sponsor, how much to reveal about the research to the interviewees, how to protect their privacy, how to compensate them for their collaboration, how to keep them informed about the results of the research and how to avoid manipulation” (Richardson et al. (2000).

They were informed about the processes: audio recording of the interview. The participants agreed with the purpose of the research and the research procedure; and they all signed and returned the consent form (see appendix 5).

Findings:

This chapter presents the results and discussion of the data collected and analyzed. The data were collected through interview. The research question for data collected through the interview were analyzed and presented.

The data collected through the qualitative means (interview) from the 7 participatory teachers in this study were presented using the thematic based analysis approach, the study adopted pseudonyms for ethical reason. The names of the participatory teachers were represented with letters A, B, C, D, E, F and G to ensure confidentiality and anonymity. The responses of the interview are identified, analyzed and presented below. The interview questions elicit teachers' perceptions on the use of IWB as well as how their prior ICT experience on the use of IWB. These interview questions answered the research questions 2, 3, and 4. The responses of the interview are presented below based on the following themes identified:

i. Prior ICT experience

ICT Prior experience

The following responses were recorded from the teachers on their prior ICT experience. This answered research question 2. There are mixed responses about the teachers' ICT experiences ranging from 5 – 17. This is presented graphically below for pictorial view:

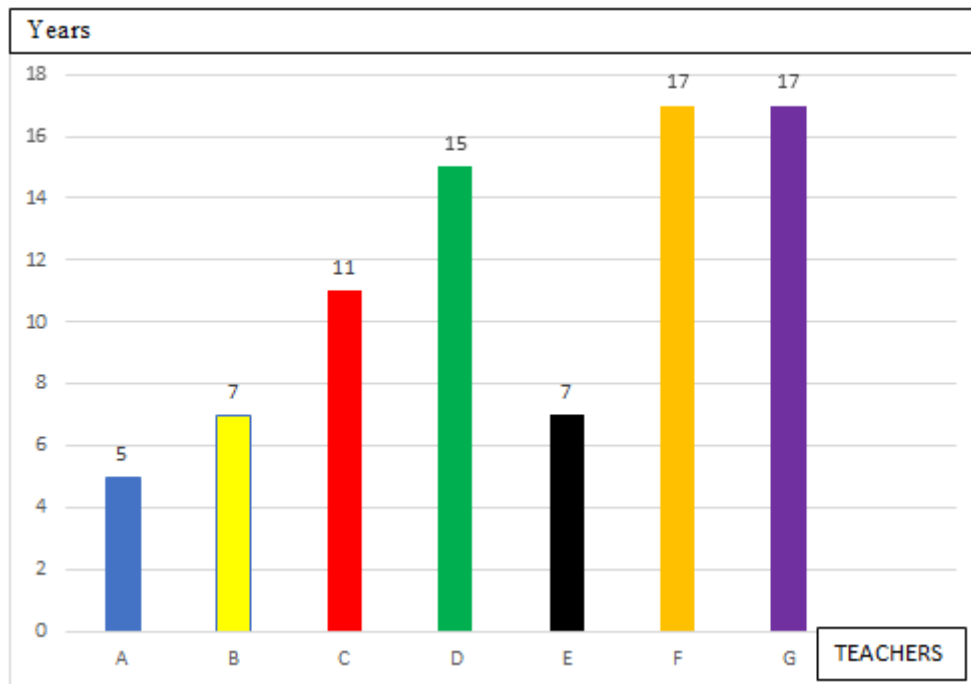


Figure 1: TEACHERS' PRIOR ICT EXPERIENCE (BY YEAR)

Keys:

- Blue - Teacher A
- Yellow - Teacher B
- Red - Teacher C
- Green - Teacher D
- Black - Teacher E
- Orange - Teacher F
- Purple - Teacher G

The figure 1 above presents the teachers interviewed in this study on how their prior ICT experience to handle the IWB in teaching. The teachers are of the opinion as a result of their prior ICT experience they found using IWB interactive, motivating and engaging above all their teaching strategies has improved. The interviewed revealed that the teachers have computer. This finding contrast what Esharenana (2010) reported in his study that many teachers seem to be computer illiterate. However, Koehler and Mishra, (2009) their study on technology pedagogy content knowledge (TPACK) revealed that many teachers in the technological advanced society can use educational technological devices such as ICT tools. Supporting what (Koehler & Mishra, 2009) revealed, a survey study conducted by Esharenana (2010) on Nigerian teachers ICT background, concluded that most of the Nigerian schools teachers have some appreciable level of ICT experience. Olakulehin (2007), appreciate the level of computer literacy among lectures in Nigerian Universities. As such, the teachers' prior ICT experiences is appreciable.

ICT experience and the use of IWB:

One of the focus of the interview is to elicit the teachers' prior ICT experience as well as their experience on the use of IWB. This answered research question 4. The teachers responded on the importance of prior ICT experience and use of IWB. The teachers were practically observed and interviewed in the school setting. The interview revealed that the teachers have positive perception on the use of IWB in their classes as a result of their prior ICT experience. Some of the responses from the teachers about the importance of prior ICT experience and effective use of IWB is quoted below:

Teacher A: *"Without ICT experience you cannot operate the IWB"*.

Teacher D: *"Teachers without ICT background will find it difficult to operate IWB because of its inbuilt features"*.

Teacher E: *"without ICT experience/background one could not fully operate the IWB"*.

The teachers are on the opinion that without ICT experience or background, one could not fully operate IWB let alone integrating it into the classroom. This concurred with what Esharenana (2010) find out on how prior ICT experience could positively influence the use of any technology tool. Because in using IWB, there are certain embedded screen tools aiding it operation which require basic computer knowledge, t without basic computer skills one may find it challenging in manipulating the IWB for classroom teaching purposes (Slay et al., 2008). The knowledge of computer seem paramount in successful use of digital devices for teaching (Hakkarainen et al., 2000). additionally, teachers need to manipulate IWB in delivering of lessons, they could download, upload, record, and play audio or video teaching materials and these require knowledge of basic computer operation (Slay et al., 2008). Similarly, Koehler and Mishra (2009) urge that teachers with computer literacy may effectively use ICT in their classrooms and may integrate TPACK..

5. SUMMARY

This study consists of five chapters. Chapter one gives the Background and objectives of the study. This chapter give an insight on why this study is important considering the prospects of integrating technology devices into teaching and learning. Therefore, this chapter reviewed the incorporation of ICT tools in Nigerian schools. The use of ICT is not new in most developed nations (Cox et al., 2000). This is considered as important tools in classroom teaching. Teachers employ ICT in teaching/learning and proved to be effective (ibid). There are many educational ICT tools which includes among others is the IWB (Northcote, Mildenhall, Marshall, & Swan, 2010). IWB is an emergent tool for the 21st century learners, it is one of the component of an ICT device used in teaching and learning (Kennewell & Beauchamp, 2007). It promotes collaboration and interactivity among the students through it features embedded in it which allow interactivity between the teacher, students and the tool. There are specific number of interactivity within the tool, which the teachers to operate. To operate the IWB effectively teachers and students can manipulate the tools, for certain operation teachers and students need to have basic computer knowledge that influence teachers' prior ICT experience in using IWB. According to some researchers, teachers face some challenges when using IWB without any basic computer knowledge. IWB has some special features that requires computer literacy (Slay et al., 2008).

Impact of IWB and teachers' perception on the use of IWB; from the literatures reviewed, teachers using IWB have positive perception towards the uses of this tool. In addition, some scholars identified some of the important of using IWB in class which includes triggering students' interest, motivating both teachers and the students (Torff & Tirota, 2010), promote collaboration Kershner, Mercer, Warwick, and Staarman (2010) and interaction (ibid) as well as improves learning performance.

Chapter 3 of this research study dealt with methodology. The chapter presents the research design (qualitative methods), the research participants, method of data collection (observation and interview), and the method used in analyzing the data (simple percentage and thematic based analysis). The fourth chapter, presents the results and discussion of the study while the fifth chapter summarized and concludes the study.

6. CONCLUSION

This research study examined teachers' prior ICT experience is investigated. The teachers have appreciable level of ICT background. Therefore, this study concluded that the teachers' prior ICT experience contribute positively in the way which they handle the technology tool (IWB) in their classroom activities.

It is evident that teachers can use IWB in teaching and learning through which they have a positive perception towards the use of IWB. Government should look into the challenges of integrating ICT to schools by providing uninterrupted power supply and dedicated bandwidths in order to optimally use all the features of IWB in the class. Finally, much attention should be given to the development of ICT skills among teachers through training and retraining to improve and up rise teachers' technological skills.

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