

Teachers' Cultural Perceptions of ICT in Nigerian Schools

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ABSTRACT

This report explores concepts that had emerged, grown, or diminished in teachers' cultural perceptions of the use of Information and Communications Technology (ICT) in Nigerian schools. Five Nigerian school teachers who were enrolled in a doctoral programme at a Malaysian university participated in this study that used a qualitative method with a case study strategy. Interviews were employed to collect data about teachers' cultural perceptions of the use of ICT in Nigerian schools. Findings from the interviews revealed that although teachers held positive views about ICT use, they were discouraged by inadequate ICT facilities and limited access to computers in schools. There were also some reservations about the negative impact of ICT on students and the society as a whole. Nevertheless, the participants were optimistic that the Nigerian education system would benefit greatly in the long run if ICT was integrated effectively in education. Teachers are a key component in the delivery of technological innovation in the classroom, and findings from this study would give an insight into perceptions of teachers towards the use of ICT in the classroom. Such information would be helpful to policy makers and curriculum planners in their review of ICT policies to help improve the quality of education and transform Nigeria into a knowledge-based economy.

Keywords: Cultural perceptions of ICT, Nigerian teachers, Nigerian schools.

INTRODUCTION

The application of information and communications technology (ICT) in education is of primary concern to educators all over the world (Zhang, 2007). Drawing upon a cultural perspective, this article focuses on the impact of culture on ICT use in Nigerian schools, the challenges and issues of adoption, and alternative perspectives in ICT use, i.e. the perspective of looking beyond what is usually the culture or norms in a particular location. Sparapani, Seo and Smith, (2011) view culture as the thinking, customs, spirituality, and traditions of a people that are communal and shared. According to Wild (1999), culture has a strong influence on the design, use, as well as management of information, communication, and learning systems. Besides taking into account the influence of the complexities of culture, the challenge to make schools more effective is timeless, and one that troubles and intrigues policymakers and educators (Fuller & Clarke, 1994).

In order to understand the challenges of using ICT in Nigerian schools, it might be useful to examine briefly the educational backdrop of the country. Nigeria is a developing country with a large population and abundant natural resources. Since gaining independence from the British in 1960, education for all had been the mission of successive governments in Nigeria. Starting from the early 1990s, the Federal Republic of Nigeria had made tremendous progress in the field of education by introducing various technologies in schools. The National Policy for Information Technology of 2012 was preceded by the National Policy of 1988 and 2001, which brought about the introduction of computer education in the nation's secondary school system. The goal of the 2012 policy was to provide a framework for streamlining the ICT sector and enhancing its ability to help address socioeconomic and development knowledge-based economy. Such a transformation required significant investments in the development of ICT skills (FME, 2007; FRN, 2001, 2006). The policy had a

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sustained programme to develop a critical pool of ICT skilled personnel, integrate ICT into the national education curriculum, train and retool teachers and facilitators at all levels to enhance their ICT competence.

A World Bank (2007) report emphasized the pertinent role of the teacher in the effective utilization of this new global innovation and practice. It pointed out that it was not the presence of technology itself that stimulated significant changes inside a school. Without the involvement of the teacher and staff, most students, on their own, might not take advantage of the potential of ICT, or appreciate and use the computer in various aspects of their lives and in future employment. The reality of technology and market convergence implies that existing policies relating to the ICT sector in Nigeria (at the time of writing) are in need of critical review since most of the objectives in existing policies have been overtaken by rapidly changing technological advancements and market transformation worldwide.

In Nigeria, as in many parts of the world, national education reform has proven to be a complex, challenging process as implementation of new policies mandates competing against the influence of strong social, cultural and contextual factors. Although ICT is now often at the centre of educational reform, not all countries are currently able to benefit from the developments and advances that these technologies can offer. According to Wodi and Dokubo (2008), ICT based learning intervention can either be used to enhance practical investigations or as a virtual alternative to real practical work. This researchers further point out that in the field of education, there is a widely held view that when properly used, ICT holds great promise to improving teaching and learning in addition to developing skills useful for the job market.

In light of Nigeria's ICT national policy and educational reforms, this paper explores the personal, social, and context-related factors that could influence the use of ICT in schools, from the perspective of Nigerian teachers.

ICT in the classroom

Education is not only limited to teaching prescribed syllabus at a specific school level; it has much broader goals and objectives, and embraces wider concepts. For example, education is becoming an increasingly important tool to combat poverty in the establishment of modern societies. A feature of the modern society is the penetration of ICT in all spheres of life, including education. In schools, new technologies play a valuable role in developing and improving teaching and learning (Al-Zaidiyeen, Mei, & Fook, 2010). Specifically, ICT plays a critical role in the educational system of the modern society (Cavas, Cavas, Karaoglan, and Kisla, 2009). The stakeholders of educational policy must redesign and reconstruct their educational systems based on new educational paradigms so that both teachers and students can develop the necessary knowledge and skills sought after in this digital age. Thus, the emergence of the knowledge-based economy has brought about the need for educational reforms in many developed and developing countries. In essence, these reforms aim to develop active learners to work collaboratively with others to construct new knowledge. Pedagogically, they demand a teaching practice that is learner-centred and constructivist-oriented (Jimoyiannis & Komis, 2007). Hence, many countries are focusing on approaches to integrate ICT in learning and teaching to improve the quality of education. In this connection, there is much emphasis on competencies such as critical thinking, decision-making, handling of dynamic situations, working as a member of a team, and effective communication (Cavas, et al., 2009). Governments, especially in developing countries, have tried to integrate ICT into education as part of the national development programme.

Saverinus (2008) posits that the role of ICT is constantly changing, especially when the Internet is incorporated in education. In view of this, education authorities should seriously consider reviewing strategies to in their effort to integrate ICT with classroom lessons. According to Owen (2014), the challenge for teachers facing 21st century learners is ever more daunting as they tend to be more disengaged and non receptive to traditional classroom settings. Classroom learning is no longer about pen and paper as students expect to be plugged in to ICT and study in an engaging, collaborative manner. Learners want easy access to ICT devices such as telephones, iPods, notebooks, palmtops, laptops, and the Internet.

Cultural Perception in the Adoption of ICT

Findings by Zhu, Valcke, Schellens, and Li (2009) indicate that the use of ICT for educational purposes is influenced by the cultural perceptions of the teachers. Similarly, according to Albirini (2006), cultural perceptions need to be considered as a key factor in the implementation of ICT as culture may play an crucial role affecting the manner teachers relate their beliefs to ICT use (Chai, Hong, & Teo, 2009). Cultural variations were identified in a study that compared the perceptions of Chinese and Flemish teachers on integrating ICT in teaching and learning (Zhu, Valcke & Schellens, 2010). Findings in the study indicated that Chinese teachers, particularly, expressed more reservation towards using the constructivist theory in ICT applications (such as self-directed learning, collaboration, independent learning). The findings also identified differences in the

perceptions of Chinese teachers, as compared to their Flemish counterparts, regarding teacher–student and student–student interactions. These differences were attributed to cultural traits such as competition, power distance, and collaboration, which were greatly emphasized by Chinese teachers.

As societies are cultural constructs, it is therefore important to understand culture as a set of values and beliefs that inform and motivate people’s behaviour (Castells, 2004). Similarly Albirini (2006) believes that studying teachers’ cultural perceptions is particularly important in developing countries where ICT is not yet part of the national culture. Due to its novel presence in society at large, and in schools in particular, ICT may not be well received by teachers from developing countries. Albirini (2006) further states that many technology experts have pointed out that the integration of ICT in education should take into consideration the cultural climate of the country and the prevailing school culture. Grainger and Tolhurst (2005) assert that there is a wide range of factors which impact the use of ICT in the classroom. These include access to resources, the quality of software and hardware, ease of use, incentives to change, support and collegiality, school policies, commitment to professional learning and teachers’ background in formal ICT training. Teachers’ lack of self-confidence in using ICT in the classroom is also an obstacle that needs to be overcome.

Research in the field of teachers’ use of technology in the classroom identifies a complex relationship of interrelated factors that are determinants of the degree of successful integration of ICT in teaching. According to Player-Koro (2012), factors that facilitate or act as barriers to the use of ICT in schools by teachers can either arise from the external environment or the personal characteristics of teachers, including their beliefs, values and attitudes. Ely (1990) points to conditions of successful change, using the term “conditions of change” to refer to a set of factors to describe the environment. He believes that the setting in which the innovation is to be introduced plays a significant role in determining the success of a change effort. Furthermore, Ely states "the setting in which these conditions are used is the ultimate determinant of their utility. Care should be taken to allow for cultural and personality variables" (Ely, 1990, p. 300).

Hofstede (2001) defines culture as patterns of thinking, feeling and potential acting, which have been learned throughout a lifetime, and which are likely to be used repeatedly and unlikely (or difficult) to be changed by the individual. Cultural patterns are shared within a social environment such as nation, ethnicity or profession. However, in this study, national cultures are defined by nationality or geographic location, while professional culture is defined by the individual’s educational background and professional practice in a given domain. Hence, this study examined the cultural perceptions of Nigerian teachers toward the use of ICT in schools in Nigeria.

Culture can also be conceptualised as a shared way of life of a group of people, influencing their behaviour, perspectives, values and understanding (Berry, Poortinga, Segall & Dasen, 2002). Sang (2010), states that perceptions are cognitive processes that build on internal and external experiences. Similarly, Wigfield and Eccles (2000) view perceptions as the personal translations of these experiences. As such, the opinions of colleagues or the school team will invoke perceptions in fellow teachers. Teachers seem to adopt different cognitions and varying degrees of ICT integration, depending on their socioeconomic and regional position, their gender, their teaching experience, the subject domain they teach, and the levels of study years for pre-service teachers. The teacher’s educational beliefs may also be shaped by culturally shared experiences and values. In a way, teaching is a cultural activity as ideas about teaching and learning are shared among colleagues (Correa, Perry, Sims, Miller & Fang, 2008). In this study, cultural perception of ICT is operationally defined as the values, habits, ability to use and apply technology and software in teaching, as opposed to traditional norms of instruction. Norms are established patterns of behaviour that tell members of the system what behaviour is expected of them (Rogers, 2010).

There is a clear consensus that culture has a definite influence on the design and use of ICT (Chai et al., 2009). The researchers further argue that culture plays a mediating factor that influences how teachers relate their beliefs to ICT use. The social and cultural contexts in which ICT resources are perceived and used by teachers are key influences in the development of a range of personal and professional practices. Lee, Choi, Kim, and Hong (2007) conducted a study on the relationship between users’ cultural profiles and technology adoption in the context of the mobile internet. Findings from this study of large scale on-line surveys in Korea, Hong Kong, and Taiwan indicated that cultural factors had a significant influence on users’ perception of the adoption of mobile internet services. It was concluded that cultural differences were contributing factors in the adoption of technology, particularly in developing countries.

Teachers’ Perceptions of ICT

In the present study, the use of ICT in the teaching of Modern Studies, Languages, Science, and the Arts in Nigerian schools was examined. The data collected revealed that various subject cultures impacted differently

on how ICT was used in the classroom, with History and Geography teachers appearing to be the most technophobic. Sutherland et al. (2004) found that "...for some subject areas and for some teachers, ICT was seen as a Trojan Horse, secretly bringing in new approaches to learning that conflicted with the deep grammar of the subject" (p. 417). However, despite this obvious aversion to technology use in the classroom, the history teachers who participated in the project reported several positive outcomes with regard to ICT integration in the projects implemented. The teachers reported marked improvements in the writing skills of lower ability students, increased levels of interaction among students, greater student enthusiasm and engagement, and an increase in confidence for both the teachers and the students.

Sutherland, Armstrong, Barnes and Brawn (2004) reported on the findings of the InterActive Education Project conducted in the United Kingdom. In this project, teachers and researchers worked together to develop and evaluate initiatives which focused on using ICT to enhance learning in curriculum areas where students had difficulty grasping. The study was conducted over a two-year period and involved 54 teachers from both primary and secondary schools. The project was predicated on the view that ICT in itself did not enhance learning, but rather how it was incorporated into learning activities was what made the difference.

Rogers (2010) identifies the social system as an important parameter in the innovation diffusion process. The social system denotes the social context in which the innovation diffuses. The structure of the social system affects diffusion in many ways. Rogers points specifically to the effects of social norms on the rate of innovation adoption. There is, however, evidence that adoption rates differ significantly across countries even with similar economic status (Meijer, 2001; Van Ark, Inklaar, & McGuckin, 2003). A possible explanation is that the meaning attributed to technology differs among people, depending on their socio-cultural attitudes. Hence, socio-cultural ambience, perceived values, institutions, and the political environment might influence the perception of individuals within a society in a certain way. These factors may subsequently impact their adoption decisions (Erumban & de Jong, 2006). First session of interviews were conducted to investigate the immediate challenges and issues Nigerian teachers faced in using ICT for teaching and learning, and the second was to obtain feedback from teachers regarding their perceptions of ICT benefits and how ICT might be better supported in Nigerian schools.

Purpose of the Study

This study was carried out to investigate teachers' perceptions of ICT integration in schools from a cultural perspective. The research questions for this study were as follows:

- 1) What are the cultural perceptions among subject teachers towards the use of ICT for education?
- 2) What are the current levels of ICT use for educational purposes by teachers?
- 3) What changes in the future do teachers expect to see regarding perceptions of ICT in Nigerian schools?

METHODOLOGY

Sample and Data Collection Procedures

This study adopted a qualitative method which used a case study strategy for data collection. The study sought to ascertain the current status of teachers' cultural perceptions towards ICT, their levels of ICT use in the classroom, as well as to explore the factors identified as potentially influencing such perceptions. Information gathered during interviews with the selected teachers was the major source of data collected to answer the research questions. According to Salkind (2012), interviewees often give information that might be difficult to acquire, such as including first-hand knowledge of their feelings and perceptions (Salkind, 2012).

Two stages of interviews were conducted with five Nigerian teachers who were enrolled as doctoral students at Universiti Putra Malaysia. Five teachers were selected for the interview. In the follow-up interview, only four out of the five were available to participate in the interview as one of them had graduated. There was a six-month interval between the first and second interviews. In the first stage interview, all five participants were interviewed three times on a one-to-one basis. For the second stage of the interview, the remaining four participants were interviewed two times on a one-to-one basis. Each session lasted between 20 and 30 minutes. This meant that there were 15 interview sessions for the first stage while there were eight interviews for the second stage.

The interview statements were developed by the first author. The question structure took into account the teachers' perceptions of cultural values, relevance, and impact of ICT on Nigerian scholastic and national cultures. The first stage interview involved nine semi-structured questions and allowed for open-ended comments; the second stage interview comprised six semi-structured questions. In the second stage three questions were similar to those in the first stage and three new questions were developed. Questions probed the

participant's current views about ICT in Nigerian society and schools, computer attributes, computer competence/access/training and general cultural perceptions. Answers from the second stage interview also served to determine if the participants still held perceptions similar to those in the first stage interview, i.e. whether they had positive or negative views on ICT use in teaching and learning. The interviews also sought to investigate the participants' future plans in terms of increasing their computer competence/ access/ training as well as their suggestions about training opportunities for further professional development upon graduation.

As the context of this study was Nigerian schools, the interviewees were chosen based on their being Nigerians with 10 – 20 years of teaching experience. These teachers were reported to have very low levels of computer, competency, limited computer access, and little computer training. The interviews also sought to gain a better understanding of their cultural perceptions of ICT. According to Schwandt (2005), interviews facilitate the comprehension of the subjective meaning of an action (grasping the actor's beliefs, desires and so on) in an objective manner.

Interviews were recorded and notes were taken. They were transcribed verbatim and then coded. Coding followed the procedures recommended by Glense (1999) for data cataloguing using analytic codes, categorization, and theme-searching. Taking into consideration the participants' work schedule, all interviews were conducted during the weekends at a time convenient to the interviewees. The first author took time to explain to all participants about the objectives of the study, the confidentiality of their responses, and possible publication of the study. The interviewees were informed that their participation in the study was voluntary and they could withdraw if they wished to at any point in the study.

FINDINGS AND DISCUSSION

Two themes and three sub-themes emerged from the responses gathered from both stages of the interviews conducted. The findings were classified and summarised in Table 1.

TABLE 1
Emerging Themes and sub-themes

Themes	Outcomes
1. Cultural perceptions	<ul style="list-style-type: none"> • Participants held positive views of ICT use. All viewed the web as a foreign learning tool and courseware not appropriate to norms and national values but could be adopted and modified. • ICT could complement text books as teaching and learning tool. • The challenges identified in the first stage of the interview included insufficient computer laboratories and poor maintenance. Also desktop computers were installed with archaic operating systems.
2. ICT Facilities	<ul style="list-style-type: none"> • There was no central database; file processing system was used. • Most of the time, the Internet was down, even during school hours. • Obstacles were encountered; there was poor support from school administrators. • The attitude of some teachers was negative • Administrative burden: Many tasks were still completed manually. Schools should look beyond the government for the provision of ICT facilities.
2.1 Teacher access to ICT	<ul style="list-style-type: none"> • Notebook/ computers should be provided free to teachers to facilitate teaching and learning.
2.2 ICT Skills	<ul style="list-style-type: none"> • ICT skills of teachers were generally poor. More training was required.
2.3 Teacher training	<ul style="list-style-type: none"> • Teacher training programmes at colleges should be reviewed to include ICT skills.

Theme 1: Cultural Perceptions

With regard to cultural perception towards ICT, all four participants held positive views about using ICT for teaching and learning although they felt that there was inadequate software for national education and information on the country in terms of traditions and culture. The existing sites contained insufficient information. Moreover, they expressed the fear of the younger generation losing its identity as a result of exposure to foreign materials posted on the Internet. The statements below reflect their state of mind:

“My concern is about the students who will have access to foreign materials that are not the custom and values we hold in Nigeria. It is all American. History, when mention is made of the country, is negative”. (Teacher B)

“I hold a positive view about ICT on cultural perception. To me, it is a transition from my culture to the western culture. It is also acquisition of knowledge in the 21st century. In order to transmit knowledge, the use of ICT cannot be overemphasised”. (Teacher D)

According to Li and Kirkup (2007) in their study on cultural perceptions of educators, the participants stated that ICT tools reflected the values and culture of the designers. The Internet being result of American technology, it was argued that ICT was racially white, embedded with Western, male artefacts and that the Internet itself overtly embodied American cultural qualities in terms of its language and technical users' values (Chen, 2007). These cultural issues have been given attention recently by educators. Collis and Messing (2001) argue that culture is a critical factor in influencing people's acceptance and use of Internet-based learning resources. It is not surprising that English makes up 80% of the language of Web sites on the Internet. Li and Kirkup (2007) further state that cross-cultural studies of people's perceptions of computers suggest that in different cultures, people might have different perceptions of the uses of computers and the Internet.

However, motivated by the prospects of greater economic, social, educational and technological gains, both developing and developed countries have embarked on educational reforms, placing much emphasis on ICT integration in education. Nations have recognised not only the positive effects of students acquiring ICT skills, but also the pivotal roles such skills play in securing jobs in the competitive job market of the 21st century.

In this study, having been exposed to ICT for a year during their studentship, the participants were of the view that ICT use was not as difficult as they had initially thought. They were very supportive of e-library, social network, and the Internet as a source for information for self-development and a provider of materials for teaching. When probed further on the statement that ICT provided a transition from Nigerian culture to an international culture of learning, the participants were unanimous in their responses that the country's culture would still be intact but the school culture should be modified in line with international standards of teaching and learning. They also suggested that proper guidance be given to the adoption of ICT skills by the younger generation to keep up with current trends in global system of education. The following statements are indicative of the teachers' cultural perception:

“Traditions are to be upheld, true, we take a cue from the Arabs and the Chinese. We can adopt and modify like them. We can develop to meet with the cultural demands in learning like these countries. We adjust to our tribal differences using the mother tongue in the regions of the country to advance learning to meet international standards”. (Teacher C)

“I agree with adoption and modification. It is all about taking what is worth taking. To make up for what should be available, we have to do it for ourselves like all those other countries did”. (Teacher A)

These responses confirmed the earlier findings on school culture *vis-a-vis* the use of ICT. During the interviews, the teachers voiced several concerns. In their opinion, if computers were used in teaching, the Ministry of Education should prepare programmes to help students steer away from improper materials that could easily be accessed on the Internet, while also making a case for software designed by Nigerians to ensure appropriate course materials in line with each region's differences, while striving for international standards in teaching and learning.

Theme 2: ICT Facilities

All the participants maintained that ICT facilities and structures needed to be improved in their respective schools. Generally, ICT facilities were inadequate, and where available, were obsolete, compared to what were available. The following two statements reflect their views:

School administrators are ineffective. (Teacher E)

Administrators currently in all schools know that they are to meet up with others on a global scale but they are not doing anything. They have to put those facilities in place and should keep tab of current development. (Teacher D)

They proposed the standardization of technology in every classroom and that there should be special classrooms to facilitate high utilization of ICT. They further stated that administrators must ensure that facilities were available and should keep tab of the latest ICT development. If such facilities were absent, school administrators should solicit assistance from agencies and stakeholders in education. This is in line with Ely's (1990) two conditions of change, *viz.* dissatisfaction with status quo and resources. Resources are broadly defined as those tools and other relevant materials that facilitate learning and thus help to achieve learning objectives (Ely, 1990). Such resources should be readily accessible to both teachers and learners. While dissatisfaction with the status quo may lead to the desire for change, participants must perceive the status quo to be less comfortable, that things could be better, and therefore something needs to change. Measuring dissatisfaction with the status quo can provide much more than just a number. One needs to examine the source of disaffection. It could be internal frustration with textbooks that are full of out-dated information or the frustration stem from an external source, such as pressure for change from the state and from parents. Innovations are less likely to succeed if adequate resources are not provided. Hence there should be sufficient financial allocation for classroom remodelling, personnel salaries, teacher training, and purchase of computers. According to Surry, Porter, Jackson, and Hall (2004), it is important to show teachers what they can do with ICT so that they would be more aware of the need to change the status quo in schools. This can take the form of technology fairs or other forums designed to showcase excellent uses of ICT, from inside or outside the school, with the intent of creating dissatisfaction with the status quo. Understanding the sources and level of dissatisfaction would facilitate the adoption of innovation, making it more acceptable. In this study the participants were of the view that school administrators should expose teachers and students to ICT facilities through excursions, and such trips should be made part of the curriculum.

Wlodkowski (1993) suggests several ways to ensure that planned changes are on target and identified needs are addressed. These include encouraging collaboration and communication with key stakeholders/leaders, establishing and addressing the goals and objectives of the users, identifying the context and setting, addressing motivation and the need to change, as well as conducting formative/summative evaluations. According to Koo (2008), attention has focused mainly on policy, and research has been on how the lack of infrastructure and access to technology affect the use of ICT in pedagogy. Like many other developing countries, Nigeria's potential ICT usage to support pedagogy has yet to be fully realized.

In answering the second research question, what are the current levels of ICT use for educational purposes by teachers? Three sub themes emerged, *viz.* personal computers/laptops for teachers' use, skills for ICT, and curriculum review.

Sub-theme 1: Teacher Access to ICT

The participants were of the view that if teachers were provided with computer or laptops, it would facilitate their acquisition of basic ICT skills. Nevertheless, the participants admitted that although they themselves owned laptops, they still lacked basic skills in ICT integration because the computers in schools were not allocated for staff use in teaching and learning in the classrooms. As such, it was difficult to use ICT for teaching. The statements below are indicative of their views:

"I am not comfortable with the way things are. We are losing out on what is going on with the rest of the world. We should have the opportunity to network with other teachers all over the world. Prior to coming to UPM my typing was done at a business center by a paid typist. I had to learn to type when I got here." (Teacher A)

"Provision of laptops or computers for teachers free to facilitate teaching and learning should not be seen as a luxury by administrators who presume such

since they (administrators) may not have had such opportunities in the past.”
(Teacher E)

Ely (1990) mentions the importance of rewards and incentives to implementers of innovation such as financial incentives (bonuses) and professional opportunities. Teachers who use ICT could do with intrinsic rewards such as praises, achievement certificates. Providing teachers with personal computers, free Internet access, and course credits are examples of extrinsic rewards.

Sub-theme 2: Acquisition of ICT Skills

Teachers had to take up short courses in computer literacy as required by the school administration, not necessarily for ICT use in the classroom but to sustain career advancement. The participants suggested that appropriate skills training on the use of MS Word, MS Excel and MS PowerPoint be given to all teachers on an on-going basis. The following three statements are indicative of the various challenges faced by teachers:

On ICT skills I would say I was previously ‘illiterate’, my current exposure as a student has redefined my literacy in ICT, I have developed skills to facilitate implementation and can impact on others. (Teacher A)

I spent a lot of time putting up my notes, I write first then type. On PowerPoint preparation that is a different story. I didn’t quite know the A to Z of it. (Teacher B)

I can now develop teaching slides and present my lessons, it was such a difficult thing when I started my programme and had to present an assignment in class in front of students who came from a better background than I did in terms of ICT exposure. (Teacher D)

Nawawi (2005) states that when an individual perceives technology to be difficult and complex, this often leads to a decision to reject it. Therefore it is crucial in the transfer of technology that faculty members involved in the use of a technological innovation receive adequate information about the innovation in relation to his or her work environment. They should also receive training on the relevant skills so that they can use the innovation with confidence. Gülbahar (2008) states that regardless of the quantity of technology placed in classrooms, the key to how the tools are used depends on the instructor. Although the majority of instructors believe that it is important to incorporate technology in the teaching process, instructors lack confidence and understanding about how to go about it. Gülbahar further stresses that instructors should possess the skills and competencies essential for designing, delivering, and evaluating instruction, since successful integration of technology requires not only the knowledge of the technology and its potential use but also the skill to plan and execute a good lesson.

Sub-theme 3: Teacher Training

The participants in this study felt that if teachers were equipped with the necessary skill, this would facilitate the use of ICT in schools. They were of the view that ICT training should be introduced at the teachers training colleges. Hence teacher training programmes should be modified and updated accordingly to accommodate this pressing need. Indicative of this sub-theme is the statement:

Constant training and retraining is very important. ICT is dynamic and the advances are on a daily basis. Such should be the same for teacher training programmes. (Teacher C)

According to Šorgo, Verčkovnik, and Kocijančič (2010), two important roles with regard to ICT are assigned to school: the first is to fulfil the expectations of society for the demand ICT skills, and the second is to raise the quality of education in schools with the support of ICT. Schools are tasked with the responsibility of producing ICT-literate students in line with the demands of the e-economy, and also upgrading these skills as more advancement is made in ICT. Thus, many countries have developed national education policies which incorporate the use of ICT. These policies include the improvement of the quality of education by using ICT in the classroom, and educating teachers to be knowledgeable and proficient in ICT skills in order to facilitate educational transformation (Tondeur, van Braak, & Valcke, 2007).

Teacher Perceptions of the Current and Future Use of ICT

Findings from this study revealed that perceptions of a lack of adequate ICT resources and infrastructure in schools were the main obstacles that impeded the utilization of ICT in teaching and learning. Computers that were already installed in schools were for the exclusive use of computer classes. Moreover, the interview findings revealed that many of the computers were often out of order, and or should be completely replaced. According to the participants of the study, there were barely any ICT facilities in rural schools at the time of the interviews, and even urban schools were equipped only with the bare minimum. Even computer laboratories that were properly equipped were often under-utilized.

“I will use ICT for my subject if only this was possible. ICT should be made available to all subjects. No subject is superior.” (Teacher A)

All the participants had a positive attitude towards ICT utilization in teaching. They emphasised the importance of training and retraining of teachers to update their ICT skills. They felt that teachers should attend periodic seminars, exhibitions and ICT fairs, international workshops, and conferences so as to be fully aware of the benefits of ICT in education. Nevertheless, they thought that attendance at ICT skills courses were often used to the participants' qualifications and promotion, but such knowledge was not being used to improve their presentation skills for the benefit of students. However, they were of the view that with greater exposure, the unfavourable attitude of such teachers would change since they themselves used to be in this category of teachers.

“I have attended quite a number of those workshops on ICT. I had to sit in just to sign the attendance. I am just fine with textbooks. (Teacher D)

This finding was in line with a study by Rogers (2010) who states that people's attitudes towards a new technology are a key element in its diffusion. A sense of success while learning new skills builds confidence, satisfaction and an intrinsic desire to learn (Keller, 1983). Acquired knowledge is a collaborative effort among all affected in the change process upon which a clear concise goal must be identified, and a hierarchy of needs and objectives defined (Brown, 2008). The problem is that when teachers do not use their newly gained ICT knowledge and skills, knowledge “atrophies” and “de-skilling” occurs (Hargreaves, 2003). In addition, if new knowledge is left unexamined, there will be no change in practice, and real, deep learning will not occur (Rios, Montecinos & van Olphen, 2007). In such a case, new teachers will teach the same way they themselves were taught as students (Goodwin, 2010).

In summary, all participants in the study had a positive attitude towards ICT utilization in teaching, the lack of adequate ICT resources and infrastructure in schools and lack in basic skills in ICT integration were the main obstacles that impeded the utilization of ICT in teaching and learning. Participants emphasised the importance of training and retraining of teachers to update their ICT skills. Providing teachers with personal computers, free Internet access, and course credits will encourage the use of ICT. Proper guidance should be given to the adoption of ICT skills through a transition from the Nigerian culture to an international culture of learning, where the country's culture would still be intact but the school culture should be modified in line with international standards of teaching and learning.

It is important to take cognizance of the fact that teachers may have varying degrees of ICT integration, depending on their socioeconomic and regional position, their teaching experience, the subject domain they teach, and their academic qualifications. As the study involved only five (later the number was reduced to four) Nigerian teachers, the opinions and perceptions elicited during the interviews might not necessarily be representative of the views of fellow teachers in Nigeria. Moreover, the participants in this study were PhD students and thus were not representative of the general Nigerian teacher population. Although the findings cannot be generalized, they shed some light on importance of culture as a mediating factor in the use of ICT in education.

CONCLUSION

The aim of this study was to explore cultural perceptions held by Nigerian teachers towards the use of ICT in Nigerian schools. An important finding from the study was the lack of basic infrastructure and skills needed to implement ICT. Thus, it was important to put in place the necessary facilities in schools to bolster teachers' confidence in the competent use of ICT and provide easy access to the computer. With regard to the teachers' views on current and future perception towards ICT, the participants held positive views about ICT use for teaching and learning, even though they still felt that there was a lack of suitable software for national education and information on the country in terms of traditions and culture. Hence the participants expressed the fear of

younger generations losing their identity to information posted on the Internet. They also had negative perception towards online social networks as they believed that information posted on them by foreign citizens might not be compatible with the school norm and national culture.

To conclude and answer the research questions in this study, the participants had some reservations about the negative impact of ICT on themselves as teachers and the society, they believed that the Nigerian education system would benefit greatly in the long run if ICT was used effectively in the classrooms. Given the participants' positive views on the use of ICT for teaching and learning in Nigerian schools, the authorities concerned needed to rise to the challenge of providing adequate teacher training in ICT skills and ensuring ease to access in the use of computers so that ICT would be integrated effectively to facilitate teaching and learning in the Nigerian classroom. Cultural issues in the Nigerian context need to be resolved to ensure that teachers embrace ICT use wholeheartedly.

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