

# Exploring Teachers' Cultural Perception of ICT in Nigerian Schools through a Qualitative Approach

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**Abstract** The purpose of this study was to explore teacher's cultural perception of ICT in Nigerian Schools. The study was guided by three research questions and used the qualitative method, with a case study as a strategy. Interviews were employed to collect data about teacher's cultural perception of ICT in Nigerian schools. Findings from the interview revealed that teachers are incompetent and blame lack of ICT facilities and access for this inadequacy. All five participants demonstrated that their current ICT status did not match up with global standards. Findings also revealed reservations about software and materials on the internet as being inappropriate to norms and values of the country. Findings of this study are important for policy makers and stakeholders in the Nigerian education system.

**Keywords:** Cultural perception, ICT, teachers, Nigerian schools.

## 1.0 Introduction

In Nigeria, as in many parts of the world, national education reform has proven to be a complex process with implementation of policy mandates competing against the influence of strong social and contextual factors. Although Information and Communication Technology (ICT) is now at the centre of education reform efforts, not all countries are currently able to benefit from the developments and advances that technology can offer. Much research in the area of technology integration in education has been conducted in technologically advanced countries, but little in the developing countries and few statistics are available from developing countries (Jhurreev, 2005).

Nigeria is a developing country with a large population. It is a country with abundant natural resources. Since its independence from the British in 1960, education for all has become the mission of different governments in Nigeria. Starting from the early 1900s, the Federal Republic of Nigeria has made tremendous progress in the field of education by introducing technologies in schools. The Nigeria's National Policy for Information Technology of 2012 is 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 new National ICT Policy, 2012 is to provide a framework for streamlining the ICT sector and enhancing its ability to help address some socioeconomic and development challenges while facilitating the transformation of Nigeria into a knowledge based economy. Transformation to a knowledge based economy requires significant investment in the development of ICT skills (FME, 2007; FRN, 2001, 2006).

The policy has a sustained program to build a critical mass 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. The World Bank (Bank, 2007) report emphasized the pertinent role of the teacher in the effective utilization of this new global innovation and practice. It opines that it is not the presence of technology itself that stimulates significant changes inside a school. Without the involvement of the teacher and staff most students may not take full advantage of all available potential on their own and will not enable present school children to appreciate and use the computer in various aspects of life and in future employment. The reality of technology and market convergence implies that existing policies relating to the ICT sector in Nigeria are in need of critical review, most of the objectives in existing policies have been overtaken by technological advancement and market transformation worldwide.

In the face of educational reforms in Nigeria's ICT national policy, this paper explores the personal, social, and context-related factors that Nigerian teachers perceive could influence their utilization of ICT in teaching in the context of technology-oriented instruction, a central component in the new ICT policy.

### *1.1 Education and ICT*

Education is not only limited to teaching the students according to prescribed syllabus at a specific school level. It has much broader objectives, goals and other concepts. Thus, education is becoming an increasingly important tool to combat poverty and to establish a modern nation. Feature of modern society is the penetration of information technologies in all spheres of life, including schooling. In general, the new technologies have been recognized to play a valuable role in developing and improving the teaching and learning situations. (Al-Zaidiyeen, Mei, & Fook, 2010). According to Cavas, Cavas, Karaoglan, and Kislal (2009), ICT plays a critical role in information societies' educational systems. In these societies, the stakeholders of educational policy, redesign and reconstruct their educational systems based on the new educational paradigms such as constructivist theory so that both teachers and students develop the necessary knowledge and skills sought in this digital age. The emergence of the knowledge-based economy has resulted in educational reforms in many developed and developing countries across the world. In essence, these reforms aim to develop active learners to work collaboratively with others to construct knowledge. Pedagogically, they demand a teaching practice that is learner-centred and constructivist-oriented (Jimoyiannis & Komis, 2007). Hence, most countries around the world are focusing on approaches to integrate ICT in learning and teaching to improve the quality of education by emphasizing competencies such as critical thinking, decision-making, handling of dynamic situations, working as a member of a team, communicating effectively among others. Also governments especially in developing countries have tried to improve their national programs to integrate ICT into education. ICT is an indispensable part of our contemporary world. The field of education has certainly been affected by the penetrating influence of ICT worldwide and in particular developed countries (Yusuf, 2005). ICT has made an impact on the quality and quantity of teaching, learning and research in educational institutions. The benefits of ICT also show that it enhances teaching and learning through its dynamic, interactive, flexible, and engaging content. ICT provides real opportunities for individualized instruction, it has the potential to accelerate, enrich and deepen skills; to motivate and engage students in learning; to help relate school experiences to work practices; to help create economic viability for tomorrow's workers; contributes to radical changes in school; to strengthen teaching, and to provide opportunities for connection between the school and the world. Yusuf (2005) further state that the pervasiveness of ICT has brought about rapid technological, social, political, and economic transformation, which has eventuated in a network society organized around ITC.

All societies are cultural constructs, it is important to understand culture as the set of values and beliefs that inform and motivate people's behaviour as stated by Castells (2004). Similarly Albirini (2006), informs that studying teachers' cultural perceptions is particularly important in developing countries where ICT is not usually part of the culture. Due to its novel presence in society at large and in schools in particular, ICT may not be well received by developing-country teachers under various cultural influences. Nigeria as a developing country falls along this line of thought. Albirini (2006) further states that many technology experts have pointed out that the integration of ICT in education should occur in the light of the cultural conditions of the country and the prevailing school culture.

Grainger and Tolhurst (2005) in their study showed that there are a wide range of factors which influence educators' under-utilization of ICT in their teaching. These include access to resources, such as quality of software and hardware, also ease of use, incentives to change, support and collegiality in their school, school policies, commitment to professional learning and their background in formal ICT training. It is believed that capabilities and constraints determine the efficacy (real and perceived) of an individual's taking particular actions. For many teachers who may have the capability to use ICT, the lack of self-confidence in using the technology is noted to be a strong limiting factor to its use (BECTA, 2003). Research in the field of teachers' use of technology in the classroom identifies a complex pattern of interrelated factors that are assumed to be determinants of the successful utilization of ICT in teaching. According to Player-Koro (2012)

research classifies factors that facilitate (or act as barriers to) the use of ICT in schools by teachers as either arising from the external environment or the personal characteristics of teachers –including the beliefs, values and attitudes that are felt likely to influence them.

A study conducted by the Global Information Technology in 2005 used the Networked Readiness Index (NRI), covering a total of 115 economies in 2005-2006, to measure the degree of preparation of a nation or community to participate in and benefit from ICT developments. Nigeria was ranked 90th out of the 115 countries surveyed. United States of America topped the list, followed by Singapore, Denmark, Iceland, Finland, Canada, Taiwan, Sweden, Switzerland and the United Kingdom etc. Likewise, Nigeria was ranked 86th out of 104 countries surveyed in 2004 which shows a decline in the country's preparedness to participate in and benefit from ICT developments. Similarly, a study by Nigerian Information Technology Professionals in America in 2002 indicated that given the current ICT penetration, it may take Nigeria 50 years to catch up with America on the aspect of PC count per household (Yusuf, 2006). ICT application and use will prove beneficial in improving Nigeria's educational system and giving students a better education. A technologically-advanced workforce will lead to ICT growth in Nigeria, with the potential to improve military technology and telecommunications, media communications, and skilled ICT professionals who will be well-equipped to solve ICT problems in Nigeria and other parts of the world (Goshit, 2006).

The concept of culture points at the shared way of life of a group of people which influences people's behavior, 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 teachers. Teachers seem to adopt different cognitions and 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. Considering the nature of beliefs, teachers' educational beliefs may be largely shaped by culturally shared experiences and values. Teaching is a cultural activity and thinking about teaching and learning is informed by culturally shared ideas about teaching and learning (Correa, Perry, Sims, Miller, & Fang, 2008). In this study cultural perception is operationally defined as the value, habits, ability to use and apply technology and software in their instructional process, moving away from the norms of society and school. Norms are the established patterns of behavior that tell members of the system what behavior is expected (Rogers, 2010).

There is a clear consensus that culture must have a definite influence on the design and use of ICT (Chai, Hong, & Teo, 2009). The researcher's 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 user's 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 have a significant influence on users' adoption perception of mobile internet services. Concluding that, cultural differences are contributing factors in the adoption of technology, particularly in developing countries.

Sutherland, Armstrong, Barnes, Brawn (2004) reported on the findings of the InterActive Education Project conducted in the United Kingdom in which teachers and researchers worked together to develop and evaluate initiatives focused on using ICT to enhance learning in curriculum areas that students would normally find difficult. 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 and of itself does not enhance learning but rather how it is incorporated into learning activities is what makes the difference.

The integration of ICTs in several subject areas including Modern Studies, Languages, Science and the Arts were examined. The data collected revealed that different subject cultures impact differently on how ICT is used in the classroom with History and Geography teachers appearing to be the most technophobic. Sunderland 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 regards to ICT integration in the projects implemented. 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 teacher and the students.

Rogers' (2010) theory of Diffusion of Innovations 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 the social norms on the rate of innovation adoption. Norms are the established patterns of behaviour that tell members of the system what behaviour is expected. There is, however, evidence that adoption rates differ significantly across countries with similar economic situations (Meijer, 2001; Van Ark, Inklaar, & McGuckin, 2003). A possible explanation may be that the meaning attributed to technologies differ among people, depending on their socio-cultural attitudes. Hence, the socio-cultural ambience, perceived values, institutions and political atmosphere might influence the perception of the individuals within a society in a certain way, and these factors may consequently impact the adoption decisions (Erumban & de Jong, 2006).

## **1.2 The purpose of the Study.**

This study aims to provide insights into the immediate challenges teachers face and teachers' cultural perception of ICT and its benefits and how it might be better supported.

The major research questions the study seeks to explore are as follows:

- 1) What are the cultural perceptions among teachers' towards the use of ICT for education?
- 2) What are the levels of ICT use for educational purposes by teachers'?
- 3) What are the teacher's views about current and future perception towards ICT in Nigerian schools?

## **2 Methodology**

### *2.1 Sample and Data Collection Procedures*

This study adopted a qualitative method of an exploratory nature, with a case study strategy for data collection. The study seeks to explore teachers' cultural perception towards ICT and factors identified as potentially influencing teachers' perception. Interviews became a source of major data collection to explain issues and also to gain a deeper understanding of teachers' Cultural Perceptions and ICT use. For the purpose of this study, five respondents were selected to participate. This study was conducted in Malaysia where the five respondents are pursuing their PhD at Universiti Putra Malaysia (UPM). The criterion for choosing the interviewees were their being Nigerians with 10 – 20 years of teaching experience, all five respondents are PhD students, who had very low levels of computer competence, computer access, and computer training prior to their candidacy, while also maintaining their perceptions towards ICT in education. Respondents were interviewed in order to gain a better understanding of their cultural perception, given that interviews were especially helpful to obtain information that might be difficult to acquire including first-hand knowledge of people's feeling and perception (Salkind, 2012). The interview statements was developed by the first author and took into account the teachers' perceptions of the cultural value, relevance, and impact of ICT as it relates to both Nigerian scholastic and national cultures.

The interview involved 12 semi structured questions and allowed for open-ended comments. Questions probed on the participants' views about the entry of ICT into Nigeria and school, computer attributes, computer competence/access /training and general cultural perceptions, also if such perceptions were positive/negative towards ICT. The interview sought to investigate participant's future plans in terms of increasing their computer competence/ access/ training as well as their suggestions about the training opportunities that they would like. Lastly, they were allowed to add open comments about their experiences as student teachers in UPM. The interview instrument was pilot tested on one participant to ensure that the questions were comprehensible, this participant was not part of the study. Due to the smooth flow of the pilot interview and the positive feedback, no change was made after the pilot study. All interviews lasted between 20-30 minutes of four sessions

each, the interviewing session took into account convenience of the participant's availability taking note of their work schedule. Interview was audio taped and notes were taken.

The first author took time to explain to all participants about the objective of the study, the confidentiality of their response and possible publication of the study. Participants were also informed that their participation in the study was voluntary and could withdraw if they wish to at any point in the study. The result of the study might not be generalized to teachers in the country. Given the self-reporting nature of this study, it will be possible that the teachers will over rate or under rate their proficiency, and will not reflect the true nature of teachers' cultural perception.

### 3. Findings and Discussion

In this study two themes and two sub-themes emerged from the responses to the 12 interview questions. Findings are classified and presented in Table 1.

Table 1: Emerging sub-themes

| Themes                    | Outcomes                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cultural perception       | All see the web as foreign and course-ware not appropriate to norms and nation value. Want software to suit the national value. Comfortable with text books.                                                                                                                                                                                                                                                                      |
| Infrastructure Facilities | Insufficient computer laboratories and poor maintenance. Desktop computers installed with archaic operating systems. No central database - still file processing system is used. Most of the time down even during school hours. Obstacles - Poor support from school administrators. Negative attitude of teachers. Administrative burden – many tasks still manual or have other people search the web for them even for email. |
| Computers                 | Limited; Notebook computers are purchased by teachers for personal use.                                                                                                                                                                                                                                                                                                                                                           |
| Skills                    | ICT Skills of Teachers - Generally poor. Request for more training.                                                                                                                                                                                                                                                                                                                                                               |

#### 3.1 Cultural Perception

As regards to cultural perception towards ICT, participants were of the view that the internet did not have enough software for national education and information on the country in terms of traditions and culture, they expressed the fear of generations losing their identity to information posted by the internet.

*“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 and European History and when mention is made of the country it is in the negative”*

Findings from Li and Kirkup (2007) in their study of cultural perception reveals perceptions held by educators, they state that tools and machines reflect the values of the culture in which they are designed. The origin of the Internet is an American technology. It has been argued that ICTs are racially white, Western, male artefacts and that the Internet itself overtly embodies 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 American/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 that have been done suggest that, in different cultures, people might have different perceptions and uses of computers and the Internet.

However, motivated by the prospect of greater economic, social, educational and technological gains, both developing and developed countries, are bringing about education reform, with a clear focus on ICT integration in education. Nations have recognised not only the positive effects of technology in education, but also the pivotal roles that it plays in securing jobs in the competitive job market of the 21st century

Having been exposed to ICT during their studentship all participants admit that ICT use is not difficult, all respondents are in support of e-library, social network, internet as a source for information for self- development and materials for teaching students. On school culture, concern by the respondents were that if computers are to be used in teaching, the Ministry of Education should prepare programs that educate students morally and culturally about the improper materials viewed on the Internet.

### 3.2 *Infrastructure Facilities*

In answering the second research question, participants indicated that computer laboratories in their respective schools are inadequate and facilities absolute. They pointed out that there is need for a classroom setting which is facilitated with ICT tools such as computer, projector, TV and video, overhead projector, internet and other instructional technology. They mentioned that the standardization of technology in every classroom and some special classrooms will facilitate high utilization of the technology. This is line with Ely's 1990 third condition of change which states that the things that are needed to make the innovation work should be easily accessible. Resources are broadly defined as those tools and other relevant materials that are accessible to assist learners to acquire learning objectives (Ely, 1990). Innovations are less likely to succeed if adequate resources are not provided. Such as computers, classroom remodelling, personnel salaries and teacher training, it also covers things so small that they may be over looked. Some schools are unable to supply textbooks. If resources are unavailable, acquisition of learning objectives will be impeded.

*"Computer department only can use the computers, 80% of the teachers do not know how to use the internet to search for material. None utilization means no access, no training, no competence"*

*Teacher "C"*

*"I don't even bother with the school computer laboratories, its either one problem or the few times I have had reason to be there"*

*Teacher "E"*

However, in most developing countries like Nigeria, the potential of ICTs to support pedagogy is yet to be fully realized. To date most of the attention both on policy and research has been on how the lack of infrastructure and access to technology affect the use of ICT in pedagogy (Koo, 2008). The second research question therefore identified two sub themes; first is personal computers for teachers use and skills needed for ICT implementation.

#### 3.2.1 *Computers and Skills*

All five participants said that they own laptops, but still lack basic skills in ICT because computers are not allocated for staff to use. The teachers added that due to this limitation, they find it rather difficult to use ICT for teaching. The teachers have to take up short courses in computer literacy as requirements by school administration not necessarily for ICT use but to keep their teaching jobs. The participants suggested that appropriate skills training on the use of MS Word, MS Excel and MS PowerPoint be given to all teachers at an on-going basis. One participant said:

*"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"*

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

*Teacher “B”*

Player-Koro (2012) states that the motives and arguments in favour of implementing ICT come from many directions; both advocates inside schools and, more often, from outside, the researcher stated further that despite the positive results obtained in small-scale, often experimental, studies and the considerable effort and resources put into educational computing by many governments, there is still a lack of evidence that ICT has actually enhanced educational standards (Nivala, 2009; Ottestad, 2010). Reasons for this listless state have been reported, ranging from technical factors such as a lack of technology and software in schools and the limited expertise of teachers regarding ICT use to other factors such as teachers’ beliefs and knowledge about how to integrate ICT into teaching.

### **3.3 Current and Future Views Held by Teachers**

On participant’s views about current and future perception towards ICT in Nigerian schools, findings from this study revealed that lack of ICT resources and infrastructure facilities in schools as the most common reason that impedes the utilization of ICT in teaching and learning. Computers in fact are available in school for only computer education departments but the interview findings revealed that many of them are out of order. ICT facilities in rural schools are barely there, urban schools at this point are still at the bare minimum with proper computer laboratories and those that were built were not to specifications, all of these obstacles are responsible for none utilization. All have a positive attitude towards ICT utilization, and see continuous training to update teachers’ ICT skills and appropriate training on when, when not and how to use ICT tools appropriately in classroom situations as necessary to fully realize the benefits of ICT integration, since ICT skills gained at courses are being used to the maximum to further the participants’ qualifications and promotion, but such knowledge are not being used to improve their presentation skills for the benefit of students.

*“I have attended quite a number of those workshops on ICT’s, I had to sit in just to sign the attendance. I am just fine with Textbooks.*

*Teacher “D”*

This finding is in line with the study by Rogers, (2010), Rogers states that people’s attitudes towards a new technology are a key element in its diffusion. Regardless of the quantity of technology placed in classrooms, the key to how those tools are used is the instructor (Gülbahar, 2008). Understanding the factors contributing to the utilization of technology and the possible relations of these factors will lead to the education technology-competent teachers.

## **4. Conclusion and Suggestion**

The aim of this study was to explore cultural perception held by Nigerian teachers towards ICT in Nigerian schools, prior to UPM. Views held by all participants towards ICT were based on fear of the unknown, such as fear of being replaced by technology and making them redundant. Participants held a negative perception towards social network, and belief information posted on them as being inappropriate for school and national value, postings had all the foreign elements about them which were not in norms with social norms and views held. A major interesting finding from the study is the lack of basic facilities and skills needed to implement ICT. Thus there is a need to put in place necessary structures in schools for competence building and access to ICT for daily usage to erase pre-held negative perceptions towards ICT by teachers.

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