Usefulness and Challenges of ICT Use in the Teaching and Learning of Communication in three Nigerian Universities

CHUKWUMA, Nkechi
Department of Mass Communication
Madonna University, Okija, Anambra State

Abstract

Information and Communication Technology (ICT) is a principal driver of communication education, economic development and social change worldwide. In other words, the application of ICT in pedagogical matters cannot be overemphasized especially in the 21st century where ICT is a major driver of educational innovations and has been found to help institutions and lecturers improve the learning environment. Based on the above, this paper discusses the usefulness and the attendant challenges that come with the application of ICT in the teaching and learning of mass communication. Using qualitative research methods (FGD and in-depth interviews), this study selected undergraduate students of three universities in the South East Nigeria (One federal, one state, and one private) that offer mass communication as a course. Data from the analysis shows that students from the private sector have more access to ICT facilities in their institution but most of the students across board think ICT has not been fully deployed in teaching them. The obvious recommendation from this study is the need to deploy ICT and create an enabling environment for both teachers and students to access ICT facilities in their teaching and learning experiences in communication.

Keywords: ICT, Technology, Pedagogy, Communication, Nigerian Universities.

Introduction

Information and Communication Technology (ICT) has several definitions depending on the nature of its use. ICT is used as an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICT in effect can mean the provision of ICT gadgets in tertiary institution for effective use and learning, workable policy and teacher factors that variously support teaching, learning and a range of activities in education. It has been argued that ICT is a principal driver of economic development

and social change worldwide (UNESCO, 2002; Kozma, 2005; Leech, 2008; Chukwuma, 2011).

In many countries, the need for economic and social development is used to justify investments in educational reform and in educational ICT. Another notable argument to this effect is by Kelles-Viitanen (2003) who referring to developing countries in general, commented that ICT plays a major role in all aspects of national life: in politics, in economic life, as well as in social and cultural development. She further argues that ICT is rapidly transforming the way people do business, access information and services, communicate with each other and even entertain themselves.

The formation of ICT policies in education, is seen to be crucial as ICT plays an important role in preparing individuals in school for the workplace (Were, Rubagiza, Denley and Sutherland, 2007). ICT, if carefully integrated in education, has a potential to facilitate the acquisition of relevant life skills that buttress the development process in the prevailing economic and information order.

The right to education as recognised by the Universal Declaration of Human Rights includes the acquisition of literacy, numeracy and other basic skills as a foundation for lifelong learning. Lifelong learning is a central principle of the international post-2015 education agenda. In its Position Paper on Education Post-2015, UNESCO proposes that flexible lifelong and life-wide learning opportunities should be provided through formal, non-formal and informal pathways, including harnessing the potential of ICTs to create a new culture of learning (UNESCO, 2014, p.4).

A Microsoft Corporation (2007) report on its ICT initiatives in Africa acknowledged that technology alone does not drive development but enables it. In the report, while noting that 300 million Africans live on less than $1 per day, it is asserted that:

> ICTs offer special opportunities to stimulate growth and increase innovation in every local setting, thereby enabling individuals and institutions to interact more productively with the global economy and the wider world. . . But to realize their potential, technologies must be part of a mix of productive changes and supporting capabilities. Resources must be matched by resourcefulness – combined with other initiatives by local leaders, educators and entrepreneurs to achieve individual and institutional objectives. "ICT4Development" is therefore an effort to distinguish the most constructive opportunities to apply technologies for growth and poverty reduction.

Librero (2006) observes that conventional universities and other educational institutions are now using ICT to achieve blended learning environments which blend traditional face–to-face classroom delivery with distance delivery. Westbrook (2001) also argues that the introduction of ICT in education has resulted in changes in four

core areas of education such as curriculum, role of teachers and students, organisational structure and, learning environment. National ICT Policy (2012), on the importance of ICT summarises that ICT has been acknowledged to be one of the most critical tools underpinning socioeconomic development in the 21st century. Its global importance has led to numerous countries transforming their ICT sectors to lend support to other critical sectors in terms of efficiency, productivity, and transparency, thus aiding job creation, better governance and overall socio economic development.

It then becomes exigent for ICT to be inculcated into the curriculum of teaching and learning for the growth and improvement of the students in order to meet with the challenges ICT would have in educational system. The challenges of using mobile learning to accomplish Education for All (EFA) goals and of mainstreaming mobile learning include building strong multi-sector partnerships to foster widespread uptake, linking mobile analytics to learning theory, training teachers in mobile learning design and promoting mobile learning for all (UNESCO, 2013).

Statement of the Problem

It is evidenced that no nation can rise above its educational attainment. In essence education is power, and effective teaching is the foundation to achieving this power. The level of education in a particular society is key to the distribution of personal incomes in such a society. Literature also seems to suggest that the level of educational attainment by the people may translate into higher rates of innovation, higher overall productivity and faster introduction and application of new technology. Fascinating and exciting new technologies, software and applications are appearing almost on a daily basis. However, exploiting the potential of ICTs can never be an end in itself because technologies are only tools. They have the potential to contribute to effective teaching and learning literacy and numeracy, enhancing access and outreach, motivating learners to engage or re-engage in learning, improving the quality of teaching and learning, and boosting the possibilities for lifelong learning.

However, in order to make effective use of the potential of ICTs, many difficulties have to be overcome and some prerequisites must be met. These cover a wide spectrum including education policies and strategies; physical, hardware, and software infrastructures; human and financial resources; implementation modalities; and teaching and learning contents and methodologies. Literature emanating from the universities seems to suggest that the deployment of technology and ICT innovation in the higher institutions of learning are at various stages and that students are not fully benefitting from the potentials. Are these observations correct or mere exaggeration? The attempt to answer this question lies the problem of investigation.

Objectives of the Study

1. To examine the usefulness of ICT in teaching and learning of mass communication in three select Nigerian universities.
2. To ascertain if the application of ICT in pedagogical matters has helped in the teaching and learning of mass communication in three select Nigerian universities.
3. To identify the challenges experienced by the students of the three select universities in using ICT to facilitate learning.

Research Questions

1. What are the usefulness of ICT in teaching and learning of mass communication in the three select Nigerian universities?
2. To what extend does the application of ICT in pedagogical matters help in the teaching and learning of mass communication in three select Nigerian universities?
3. What are the challenges experienced by the students of the three select Nigerian universities in using ICT to facilitate learning?

Literature Review

A successful approach to introducing ICTs in the teaching and learning of literacy and numeracy recognises the central role of facilitators, educators or teachers who do not only need to be convinced of the benefits of ICTs and sufficiently trained in its pedagogical use, but also should be actively involved in the early stages of planning and developing such learning systems, UIL (2014). While teacher knowledge is certainly a component of teacher professionalism, professional competence involves more than just knowledge. Skills, attitudes, and motivational variables also contribute to the mastery of teaching and learning. Blömeke and Delaney (2012) propose a model that identifies *cognitive abilities* and *affective-motivational characteristics* as the two main components of teachers' professional competence.

ICT, as a sector, can create some employment opportunities directly to the poor both in the manufacturing of hardware and software. Because of the low educational levels and skills of the poor, we can expect that there are more employment opportunities in the service sector. Grameen Bank in Bangladesh is a good example of this. With the exception of China and the Philippines most of manufacturing is also taking place in the more developed countries such as Malaysia or Taipei (Jha, 2002). Although an export focus can produce significant national economic benefits, these gains do not automatically translate into progress on broader development goals. But using ICT in pursuit of development goals allows countries to achieve a wide diffusion of benefits from ICT, which, in the end, will benefit broad-based economic growth, too (UNDP, 2001b).

The broad-based economic growth cannot be achieved in isolation as it

requires appropriate pedagogy in the teaching and learning environment. Chukwuma (2017) asserts that Information Communication Technology is not something that one can dabble into ignorantly. It needs a given idea, to operate or practice. For one to be conversant with its operation and use, she must know the operation and practicalises such over time.

In effect, The Belém Framework for Action (UIL, 2010), in its article 11 on Adult Literacy, states that Literacy is an indispensable foundation that enables young people and adults to engage in learning opportunities at all stages of the learning continuum. As an age-independent, context-bound and continuous process, the acquisition and development of literacy takes place both within and outside explicitly educational settings and throughout life. Increasingly, reading, writing, language and numeracy are viewed as part of a broader conception of key competencies, including ICT skills, which require sustained learning and updating. Instead of being perceived as a stand-alone set of skills to be developed and completed in a short time frame, literacy and numeracy are increasingly seen as fundamental components of a complex set of foundational or basic skills.

As a consequence, a number of UNESCO member states have included ICT skills, together with other essential skills, in their literacy definitions (UIL, 2013, p.21). With the implementation of the OECD Programme for the International Assessment of Adult Competences (PIAAC), the use of ICT skills was introduced as one of the new elements into direct testing of literacy skills. Problem solving in technology-rich environments as the ability to use digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks (OECD, 2013, p.59), includes the use of computers at different proficiency levels.

According to World Bank (2001), in Brazil's urban slums, the Committee to Democratize Information Technology (CDI) has created 110 sustainable and self-managed community-based Computer Science and Citizenship Schools, using recycled technology, volunteer assistance, and very limited funds. CDI schools train more than 25,000 young students per year in ICT skills that give them better opportunities for jobs, education, and life changes. CDI also provides social education on human rights, non-violence, environmental issues, health and sexuality. CDI cites many cases in which participants have developed renewed interest in formal schooling, resisted lure to join drug gangs, and greatly increased their self-esteem.

Successful reforms require a very strong leading role by government and a robust long-term vision for education. The growth of information and communication technologies has dramatically reshaped teaching and learning processes in higher education. It is on the high note that the use of ICT offers powerful learning environment and can transform the teaching and learning processes so that students can deal with knowledge in an active, self directed and constructive way (Sara

Hennessy et al, 2010).

In spite of all the benefits derived from ICT use, Nigeria is still disadvantaged when compared to other nations (Ololube, Eke, Uzorka, Ekpenyong, and Nte, 2009). It suffices to mean that if the nation is still lacking behind in the deployment of ICT facilities for teaching and learning, then the universities suffer from the effect and must therefore become innovative in ensuring staff and students acquire relevant skills for the teaching and learning required in the 21st century. The required 21st century skills are used for problem-solving, collaboration, communication, and creativity.

In a similar study by Ani (2012) on the accessibility and usage of ICT among students of Technical Education in Tertiary Institutions in Niger State of Nigeria, it was found out that ICT facilities are not available for students use at the department and as such they do not have access to such facilities. Oduma (2013) also carried out a similar study in the Northern part of Nigeria and corroborated the argument that the non availability of ICT facilities in tertiary institutions in Nigeria cuts across the country and is hindering effective learning.

Hamilton-Ekeke (2011) in a related study reveals that majority of education students are not using the internet in studying, also internet/internet facilities are not readily available to students of education, and that students do not make use of internet in studying and research writing. These findings corroborate the findings of this research where a greater percentage of the respondents indicated that they do not use ICT facilities and do not even know what electronic blackboard is. Similarly Eze and Eze (2013) found a lack of ICT facilities and lack of trained personnel in schools to operate ICT facilities, where they are available.

Hamilton-Ekeke and Mbachu (2015), in a study titled: "Place of Information, Communication and Technology (ICT) in Teaching and Learning in Nigerian Tertiary Institutions" state that despite the glaring fact that ICT is regarded as the world's most influential instrument for the development of quality teaching, learning, and research in the educational system around the world, students of Niger Delta University, Wilberforce Island, Bayelsa State, are still not utilising ICT in their learning environments and therefore not maximizing the potentials ICT offers in higher education. The import of this is that the government is not doing well in this area and should immediately mobilise resources for the deployment of ICT facilities in teaching and learning and make adequate provision to ensure its availability and practical use.

Theoretical Framework

The theories used in this study were Technological Acceptance Model, TAM, and The Technology-Organisation-Environment (TOE). The Technology Acceptance Model (TAM) is regarded as the most widely used theoretical framework for assessing the acceptance of technologies in the literature (Legris *et al*., 2003). The TAM was

developed by Davis (1989), to evaluate users' acceptance or adoption of technological innovations as predicted by the users' views of the perceptions related to ease of use and usefulness of the system (Davis, 1989).

The Technology-Organisation-Environment (TOE) framework posits that the adoption of innovations depends on organisational, environmental as well as technological factors (Tornatzky & Fleischer, 1990). In general, the TOE model is an integrative schema that incorporates the characteristics of the technology, contingent on organisational factors, and other elements from the macro-environment. According to Ifinedo (2011a), factors that contributed to e-business usage and acceptance in small firms included top management support, organisational readiness, and financial resources.

Methodology

Using qualitative research methods (Focus Group Discussions and In-depth Interviews), popularly referred to as FGD and IDIs, this study selected six focus group discussants (three male and three female groups) in three Nigerian Universities. The following universities were involved: University of Nigeria Nsukka (UNN), Abia State University (ABSU), and Madonna University Okija (MUO). The aim was to obtain in-depth knowledge of how the students' use ICT in their learning environment and the attendant challenges that come with the application of ICT in the teaching and learning of mass communication as a course of study at the undergraduate level. Course representatives of each university were purposively selected who helped to select those students that can speak English fluently, have speaking skills, and could communicate more effectively as participants. In each university, groups were divided in terms of gender to ensure homogeneity. The six focus groups involved a total of 25 students: 12 males identified as M1-M12 and 13 females identified as F1-F13.

Face to face in-depth interview was done with selected sample (twenty-five) of the participating students. The intent was to triangulate the findings from the focus group discussion. In phenomenological study (qualitative), data emerge from rich description of phenomenon and the inquiry utilises inductive theory development (Creswell, 2013). Although there was an interview guide, questions and follow-up questions developed through the evolution of conservation with the participants. The format includes detailed orient probes, elaboration probes and clarification probes to enhance the understanding and clarity of statements as appropriate. Open-ended questions were used to obtain data from the participants. This gave the participants opportunity to express themselves to their satisfaction as regards the phenomenon under study.

Table 1: Facility characteristics

Students	**UNN**	**ABSU**	**MUO**	**Total**
Group A-Males	4	4	4	12
Group B-Females	4	4	5	13
Total	**8**	**8**	**9**	**25**

Permission for the study and tape recording of discussions was obtained from the Heads of the Department as well as the students and the potential benefits of the study were explained to the students in order to gain their cooperation and establish an interpersonal relationship between the researcher and the participants. Male facilitators and note takers conducted focus group discussions for the male participants while female facilitators conducted that of the groups of female participants. Focus group discussion guidelines were used during the study.

All FGDs and IDIs took place in a private setting with only participants present, were audio recorded, lasted 60–90 minutes and were conducted by research assistants. The data were transcribed after the discussions and the final written report was checked with the participants.

Data Analysis

This analysis employs a thematic analysis approach, as described by Braun and Clarke (2006). Thematic analysis is inherently a flexible method, and is useful for identifying key themes, richly describing large bodies of qualitative data and highlighting similarities and differences in experiences.

After transcription, line-by-line coding was performed on a subsample of transcripts by the researcher to develop an initial thematic framework. These codes emerged naturally from the data and were initially structured as "free codes" with no established link between them. Free codes were synthesized with questions from the discussion guide and systematic review findings into a coding scheme transferable to other transcripts (*Bohren M. A, Vogel J. P, Hunter E. C, Lutsiv O, Makh S. K, Souza J. P, 2015)*. The coding synthesis yielded a hierarchical codebook to explore higher-level concepts and themes and organised the codes into meaningful code families. Reliability testing of the codebook was conducted in two stages where the researcher coded three transcripts, one from each type of participant; and where the researcher coded two transcripts and discussed coding decisions until consensus. After reliability testing, the final codebook was developed, which includes the structure of code families, code names, definitions, and an example of proper use. Memos were used to collate emerging thoughts, highlight areas of importance and develop ideas throughout the analysis process. A subset of the coded transcripts was reviewed by an independent researcher to check reliability of the coding.

Data from these reports and output were synthesized into meaningful sub-themes, narrative text and illustrative quotations to draw connections between recurrent patterns and themes. These themes were interpreted within the context of the study and the typology of the usefulness and challenges of ICT. The researcher named ICT facilities to include: Tablets/Handsets/Ipads that are useful for learning, internet cyber cafe, WIFI internet network system, Electronic blackboard, Audio visuals/instructional television, RTV, radio, power point facilities, centralized e-mail message transfer system, among others.

Usefulness of ICT in Teaching and Learning in Communication Education

In three of the six groups, most of the participants believed that ICT facilities were available in their universities. They identified the available once to include:

1. The availability of computer systems, printers and power point facilities for students use.
2. Internet cyber cafe, WIFI internet network system and centralized E-mail message transfer system on campus for students' use
3. Audio visuals/instructional television and radio.

Respondent (R)

One of the participants queried ICT in use in the institution? I know that we have group chat, I personally browse and I see students browsing with their phone but the content is what I wouldn't explain, but I have not seen the electronic blackboard that the facilitator mentioned when she was naming the ICT facilities that should be used in teaching and learning (FGD group A, MUO).

I: So how accessible are ICT facilities to the students at the study centre.

R: Having most of the equipments is not questionable but using them have question mark attached. IDI's, group B. MUO.

In another contribution one of the participants clarified that the installation of all the ICT facilities mentioned in the institution is hundred percent but the use is not feasible (FGD, group B. UNN).

I: Do you use audio visuals/instructional television and radio in the classroom during lecture.

R: I have not experienced such since I was admitted in the university (IDI's group A. ABSU.)

Table 2: Use of audio visuals/instructional television and radio in the classroom during lecture

	Federal Uni 8		**State Uni 8**		**Private Uni 9**		**Total**
Statement	**M**	**F**	**M**	**F**	**M**	**F**	**25**
usefulness of computer systems and printers	2	2	1	2	2	3	12
Use of internet cyber café	1	2	1	2	3	3	12
WIFI internet network system	1	1	2	1	2	3	10
Audio visuals/instructional R/TV	-	-	-	-	-	-	-
Power point facilities	1	2	1	1	2	3	10
Centralized E-mail message transfer system	3	4	4	4	4	5	20

The result in Table 2 above shows that centralized e-mail message transfer system was common ICT usage among students in all the universities, 20 participants agree that there are centralised E-mail message transfer system, however, a total of 10 participants pointed out that power point facilities and WIFI internet network system are available for use in the campuses. Twelve participants asserted that usefulness of computer systems and printers and internet cyber café are available for use in the institutions. As can be seen from the table no participant talked about using audio visuals/instructional Radio and Television.

Research Question 2: To what extend does the application of ICT in pedagogical matters help in the teaching and learning of mass communication in three selected Nigerian universities.

R: *I tell you I* do not know how CDROMs can be used for effective learning, not aware of electronic blackboard and would not know how audio visuals/ instructional gadgets are used in classroom setting (FGD group B.ABSU).

R: Personally I do not know how CDROMs can be used for learning (IDI's group B UNN).

Many participants agreed that ICT application in pedagogical matters has not helped in the teaching and learning of mass communication since this is achieved when the knowledge base of the teaching profession sufficiently incorporates the latest scientific research on learning and meets the expectations for teaching and learning 21st century skills as the participants confirmed that they do not know how CDROMs can be used for effective learning, not aware of electronic blackboard and non-application of audio visuals/instructional RTV among others.

The students described the challenges experienced by the students of the three universities in using ICT to facilitate learning as ubiquitous ranging from novelty on the use of ICT facilities and non-application of the ICT facilities in the classroom environment.

R: The issue remains that some of the ICT facilities mentioned have not been known before to me especially electronic blackboard, and audio visual radio and television is not applicable anywhere in the school (IDI's group B ABSU).

Challenges abound in the use of ICT as unavailability of its facilities hindered what is to be known about it, even the one that can be assumed to be common as e-messaging also challenged by network (IDI's group A UNN).

Conducive environment has part to play in the hindrance of ICT and the light in the screen of the gadgets also strain the eyes (IDI's group B MUO).

Discussion of Findings

Data from the analysis show that students from the private sector have more access to ICT facilities in their institution but most of the students across board think ICT has not been fully deployed in teaching them. Based on the research question one, on the

usefulness of ICT in teaching and learning in communication, ICT facilities are unavailable for students' use. This outcome is consistent with the work of Hamilton-Ekeke and Mbachu (2015). The study shows very poor ICT facilities usage because the percentage of students that make use of ICT facilities very frequently is very low compared to students that make use of it occasionally and sometimes. Thus, it is an indication that the students do not frequently use ICT facilities, which might not be unconnected to the fact that the facilities are grossly unavailable in the first instance.

On the application of ICT in pedagogical matters that helped in the teaching and learning of mass communication in three select Nigerian universities, the responses authenticate the fact that they do not know how CDROMs can be used for effective learning, not aware of electronic blackboard and non-application of audio visuals/instructional RTV among others. In effect it suffices to say that the students were not taught how to use CDROMs, which can be used for supplementary learning by students and electronic blackboard which supports students learning by having notes put up on Blackboard by lecturers because it can be quite tricky getting all the notes down. The application becomes problematic because professional competence involves more than just knowledge. Skills, attitudes, and motivational variables also contribute to the mastery of teaching and learning and this authenticates the model proposed by Blömeke and Delaney (2012) which identifies *cognitive abilities* and *affective-motivational characteristics.*

The challenges experienced by the students of the three universities in using ICT to facilitate learning are quite revealing. These include non application of some of the ICT facilities in the class room environment, unavailability of ICT facilities, and lack of power supply to power the systems as at when needed. These findings confirm the findings of Ajegbelen (2016) study on the use of ICT to enhance university education in Nigeria. According to her, the opportunities provided by ICT to support teaching and learning in the university studied in respect of the mean scores are not satisfactory, many respondents disagree that there were enough ICT instructional technical support equipment in their university. As a new technology, the response is that there is the problem of inability to quickly adopt and adapt usage, low access to ICT facilities in the university, non possession of personal computer and some essential software hindered the use ICT in the universities studied.

Conclusion

Irrespective of the fact that ICT is regarded as the world's most influential instrument for the development and growth of quality teaching, learning, and research in the educational system around the world, it is obvious from the study that students are faced with many challenges that prevent them from maximising the benefits of ICT in their classroom environment or develop supporting materials through ICT. The integration of information and communications technology in teaching and learning is considered as a medium in which a variety of approaches and pedagogical philosophies may be implemented. However, ICT as a teaching aid is more

complicated in that it demands more specific skills from the teachers if students must be carried along in this information age. The findings of this study indicate that the students from the universities do not benefit from the educational revolution derived from the frequent use of ICT and as well the impact cannot be felt on teaching and learning experiences of the students.

Recommendations

Based on the findings of the study, it is recommended that the need to deploy ICT and create an enabling environment for both teachers and students to access ICT facilities in their teaching and learning experiences in communication has become very imperative. More time should no longer be wasted in making this possible. Government can partner with the private sector to make this happen.

Action programmes on education in Nigeria should be revisited because while the researcher was searching for the material for the work she was opportune to run into the action programme on education that was submitted in 2004-2005. Till date, that document has not been improved and nowhere in the document was ICT for education mentioned. This is a serious gap.

The institutions investigated in this study should organise ICT training workshops for their students, to expose them to the available ICT facilities on campus and how to maximize them in their learning pursuits.

Every university in Nigeria should set up an organized ICT Centre, with WiFi for free and easy internet connectivity, an organized e-mail transfer system between management, staff and students, to enable easy transfer of messages between students and staff as well as for other ancillary services on campus.

The students should be given assignments, course projects, group work, which will involve sourcing for information from the internet as this will not only expose the students to the use of ICT but will also encourage them to be conversant with the facilities and maximize its potentials.

Lecturers should encourage students to organize mini seminars for presentation of assignment through the use of PowerPoint, as this will acquaint them to tap the potentials derived from such exercises.

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