

FAMILIARITY, UTILIZATION AND EFFECTIVENESS IN THE USE OF ICT FOR INSTRUCTIONAL DELIVERY

By

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Abstract

The study examined the familiarity, utilization and effective use of ICT (Information and Communication technology) in instructional delivery. It adopted descriptive survey research design. 80 educators were participated from university, college of education, secondary and primary education. Multistage sampling techniques were used. Purposive sampling technique was used to select educators in higher institutions while simple random sampling was used to select those in primary and secondary education. The study made use of a three point Likert scale structured questionnaire validated by experts with reliability co-efficient measure of 0.85. The results revealed that educators in Nigeria had low level of familiarity with ICT tools, they had not been utilizing ICT tools in preparing students for future challenges and had not been effectively use ICT strategies for classroom instruction. Based on these findings, the researchers recommended that educators should try to get themselves familiarized with ICT tools and effectively utilize ICT strategies for classroom instruction.

Keywords: Familiarity, Utilization, Effective, Educators, Instructional Delivery, Information and Communication Technology.

Introduction

The integration of Information and Commuincation Technology (ICT) into teaching, learning, research, and information dissemination as well as management activities in all education sectors has been a priority issue in education institutions for a number of years. In Nigeria, ICT has begun to have a significant presence in education. Institutions within the country, are currently exploring ways in which the use of information technology can be mainstreamed across the education sectors. ICT use is underlined by OECD (2001) as a necessity for improving quality in teaching and learning. In line with the new demands of technology, Gates (1996) opine that the digitalization of information will be the disparity between what exists and future demands. In reaction to this, Okolocha and Ile (2007) stress that technology has opened a new world of learning which has drastically increased output. The new technology therefore calls for the update of education programme and training of students to acquire technological competencies in our institutions.

The demand for education in the country remains very high and enrolment continues to grow at a very fast rate, especially within the privately sponsored students' programmes.. ICT can greatly contribute to addressing the upcoming educational challenges. The use of ICT, therefore, will continue to be important, and this importance can be further enhanced and harmonized through proper utilization and availability of these technologies.

The Need for Use of ICT for Instructional Delivery

ICT is needed for instructional delivery in order to accomplish many objectives and improve the quality of teaching in every subject areas. It penetrates into various aspects of our daily lives. ICT leads all processes based on information, therefore there is need for every individual in the country to be computer literate and be technology competent. Thus, all schools have to be equipped with the necessary ICT tools and resources for access and use and also to acquire the expected skills. According to Al-Bataineh and Brooks (2003), teachers must receive adequate ongoing training, technology use must match the curriculum's philosophy and theory of learning, and adequate numbers of computers must be conveniently located within the classroom. Merely providing training, hardware and software is not enough; this must be supported with follow-up and peer tutoring so as to ensure successful utilization of the technology. As a tool, "ICT has the potential to transform the way that education is delivered" (Fisher, 2001). ICT can facilitate differentiation and individualization in education: it makes it possible to tailor both the content and the presentation of the subject matter to the individual background, experience and needs of students.

The new digital ICT is not single technology but combination of hardware, software, multimedia, and delivery systems. Today, ICT in education encompasses a great range of rapidly evolving technologies such as desktop, notebook, and handheld computers, digital cameras, local area networking, Bluetooth, the Internet, cloud computing, the World Wide Web, streaming, and DVDs; and applications such as word processors, spreadsheets, tutorials, simulations, email, digital libraries, computer-mediated conferencing, videoconferencing, virtual environment, simulator, emulator etc. It is important to mention that use of newer ICT is being integrated with use of older technologies, enabling the existing resources and services to be continuous use (Mishra, Vinay, & Tripathi, n.d). Research studies show that most teachers do not make use of the potentials of ICT to contribute to the quality of learning environment, although they value this potentials quiet significantly (Smeets, 2005). Harris (2002) submits that the benefits of ICT will be gained"...when confident teachers are willing to explore new opportunities for changing their classroom practices by using ICT".

Limitations to the Integration of ICT in Nigerian Educational Institutions

Many factors limit the infusion of ICT in educational institutions in Nigeria. These include teacher attitudes toward ICT, lack of relevant content, lack of access to internet and computers after school, lack of adequate funding and resources, lack of training focusing on pedagogical innovation and learner centric strategies, weak ICT infrastructures at the IUCEA and member universities, unstable and unreliable electricity supply in many parts of East Africa, low student-computer ratio in most universities, inability to share information resources amongst universities, and lack of current information resources.

Content and Curriculum Development through ICT

This is the most significant aspect of the use of ICT in education. If ICT applications are to yield meaningful results they will depend primarily on the quality of the content and curriculum that is being transacted in the class. There is a need to ensure that ICT is not used simply to teach but that concepts are taught in a fundamentally new way leveraging the advantages provided by ICT. Visualization, experimentation, and learning by doing are some of the hall marks of this new method (Ministry of Human Resource Development, MHRD, India, 2009).

Introduction of ICT in the learning environment is an opportunity, therefore, for rethinking our teaching-learning paradigm at the most fundamental level. As models of learning change, what should be taught in class at what level also needs to be re-taught. This is an opportunity to instill in learners the 21st century teaching learning skills.

Curriculum content needs to be designed which is relevant to the target group. Content development and curricular reform are important pillars and often with all the other aspects in place if these are ill designed, we will not be able to see any utilization or performance improvement through ICT. In the focus countries almost all policies underscore the need for appropriate curriculum and content. Curriculum is usually prescribed for ICT as a subject starting at the secondary school level and at the primary level the aim is to improve general ICT literacy and facility with working with technology.

Statement of the Problem

There is increase in demand for computer literates and almost everything in the world around us is computerized. It is therefore necessary for all educators to meet up with all these challenges so as to be able to groom the leaders of tomorrow and fully equip them. Therefore the study sought to:

- i. Find out the extent to which educators are familiar with the ICT innovations currently existing in across the world.
- ii. Find out the extent to which educators utilize ICT tools in preparing students for future challenges.
- iii. Determine educators' opinion regarding their effectiveness in the use of selected strategies in preparing students for the challenges in the global world.

Research Questions

The following research questions guided the study.

- i. To what extent are educators' familiar with the ICT innovations currently existing across the world?
- ii. To what extent do educators utilize ICT tools in preparing students for future challenges?
- iii. How effective are educators in the use of selected ICT instructional strategies in preparing students for the world beyond?

Methodology

The study was a descriptive survey research design and this enables the researchers to make use of a sample out of a large population. The study comprised 80 educators from all sectors of educational institutions in Oyo State (primary, secondary, colleges of education and universities). Multistage sampling technique was adopted. Simple random sampling technique was used to select Local Government for primary and secondary schools educators. Four Local Government areas were used, where five teachers each were selected randomly and participated for primary and secondary schools educators. This makes 20 teachers for primary and 20 teachers for secondary, while purposive sampling was used to select 20 colleges of education lecturers and 20 universities lecturers based on the fact that the lecturers in the higher institutions have access to ICT through government provision.

A modified three point likert scale structured questionnaire validated by experts was used for data collection. The questionnaire contained four sections. Section A was on respondents' bio-data, B contained items on familiarity of educators with ICT tools in instructional delivery, while section C and D consisted items on educators utilization of ICT tools in preparing students for future challenges and educators effective use of ICT strategies in instructional delivery respectively. The consistency and reliability of the instrument was tested using Cronbach Alpha reliability test which yielded reliability co-efficient of 0.85. The questionnaire has the keys as U = University Educators, C = College of Education Educators, S = Secondary school Educators, P = Primary school Educator, and T = Total. Data collected

was analyzed using percentage statistics. Copies of the instrument were distributed by the researchers with the help of two research assistants in each school used.

Data Analysis and Results

Data were analyzed accordingly and accurate statistical tool used.

Presentation of Results

Research Question One: To what extent are educators familiar with the ICT tools in instructional delivery exist across the world?

Table 1: Familiarity of Educators with ICT Tools in Instructional Delivery

S/ N	Items	Familiar						Somehow Familiar						Not Familiar					
		U	C	S	P	T	%	U	C	S	P	T	%	U	C	S	P	T	%
1	E-conferencing	4	4	2	4	14	17.5	5	2	1	-	8	10.0	11	14	17	16	58	72.5
2	E-Learning	10	10	4	2	26	32.5	6	4	4	3	17	21.3	4	6	12	15	37	46.3
3	Interactive Learning	8	6	2	2	18	22.5	8	8	6	2	24	30.0	4	6	12	16	38	47.5
4	Mobile Learning	12	10	5	3	30	37.5	5	5	2	2	14	17.5	3	5	13	15	36	45.0
5	Social media	17	12	9	4	42	52.5	3	4	6	4	17	21.3	-	4	5	12	21	26.3

N = 80

The findings of this study clearly reflect to some extent the low level of Nigeria educators' familiarity with currently existing ICT innovations. The percentages of familiar were quite lower than that of not-familiar. This could be attributed to the level of exposure of the individual educators to current ICT applications. From table1, most of the primary and secondary school teachers are not all that familiar with the existing tools while those that are in higher institutions indicates better degree of familiarity.

Research Question Two: To what extent do educators utilize ICT tools in preparing students for future challenges?

Table 2: Educators utilization of ICT tools in Preparing Students for future challenges

S/N	Items	Greatly Utilized						Partially Utilized						Not Utilized					
		U	C	S	P	T	%	U	C	S	P	T	%	U	C	S	P	T	%
1	Web-Based Lessons	-	-	-	-	-	-	3	1	-	-	4	5.0	17	19	20	20	76	95.0
2	Computer	11	9	5	1	26	32.5	8	7	7	5	27	33.8	1	4	8	14	26	32.5
3	Interactive SMART Board	8	-	-	-	8	10.0	8	2	-	-	10	12.5	4	18	20	20	62	77.5
4	E-Mail	12	6	1	1	20	20.0	8	10	4	2	24	30.0	-	4	15	17	33	41.3
5	Yahoo Chat Room	6	1	-	-	7	8.8	5	3	-	-	8	10.0	9	16	20	20	65	81.3

N = 80

The analysis in the Table 2 revealed that ICT tools had the level of not well utilized in preparing the students for future challenges. Web-Based lessons, Interactive SMART Board and YahooChat room were not utilized at all with 95%, 77.5% and 81.3% respectively while computer and e-mail were partially utilized with 33.8% and 30.0% respectively. The implication was that Nigerian educators had not been utilizing ICT tools in preparing students for future challenges. They were however, found not to be utilizing most of the ICT tools such as search engine, interactive whiteboard, yahoo chart room, among others as instructional delivery media.

Research Question Three: How effective are the educators in the use of selected ICT strategies for classroom instruction?

Table 3: Educators Effective use of ICT Strategies in Instructional Delivery

S/ N	Items	Greatly Effective Used						Somehow Effective Used						Not Effective Used					
		U	C	S	P	T	%	U	C	S	P	T	%	U	C	S	P	T	%
1	ICT PowerPoint	12	4	-	-	16	20.0	8	6	2	1	17	21.3	-	10	18	19	47	58.8
2	E-Learning	3	-	-	-	3	3.8	11	4	-	-	15	18.8	6	16	20	20	62	77.5
3	Simulation	6	1	2	-	9	11.3	11	6	11	4	32	40.0	3	13	7	16	39	48.8
4	E-conferencing	-	-	-	-	-	-	5	-	-	-	5	6.3	15	20	20	20	75	93.8
5	Computer Game	4	4	9	1	18	22.5	11	9	10	9	39	48.8	5	7	1	10	23	28.8

N = 80

From Table 3, the result indicated that the selected ICT strategies in instructional delivery were not effectively used. The percentage of not effectively used was higher than that of greatly effective and somehow effectively used. The implication of this was that educators had not been effectively using or not using at all the ICT strategies for classroom instruction.

Discussion of the Findings

From the data analysis and the results obtained from this research work showed that the level of familiarity of educators particularly those in primary and secondary schools was considered low. The implication is that teachers are not well acquainted and exposed to various and new available technologies that can be used to support and enhance effective instructional delivery. The finding was in line with Salehi and Salehi (2012) reported that majority (76.6%) of high school teachers had never use ICT in the classroom and 83.2% believed that their colleagues are not familiar with ICT or they use ICT very little. The study also revealed that Nigerian educators had not been utilizing ICT innovations in preparing students for future challenges. This might be attributed to lack of good access to ICT facilities for teaching as found by Agbamu (2004). It could also be because they lack the knowledge, skills and attitudes to utilize ICT tools as instructional materials. This is why Olaofe (2005) held the view that the greatest challenges for lecturers in our institutions is now on their up-to-date ability to exploit the ICT facilities in teaching and learning situations. ICT strategies have not been effectively used for classroom instruction.

Conclusion

The researchers therefore conclude that educators should try to get themselves familiarized with ICT tools and utilize them in preparing students using effective and appropriate instructional strategies like ICT strategies to improve teaching and learning, there is no doubt this will equip the students with necessary knowledge and skills that may help them cope with new challenges in our modern innovative world.

Recommendations

Based on the challenges confronting educational institutions, it is recommended that educators should move beyond just mere familiarization of innovations and embrace the utilization of ICT tools and appropriate instructional strategies in the delivery of lessons. Management of institutions should provide ICT facilities especially projectors and internet connectivity (wireless) to enable lecturers utilize the ICT tools in instructional delivery. A stringent policy statement should be made on the use of ICT facilities in instructional delivery, giving students' group assignments that involve the use of internet and presentations

Using PowerPoint and projector. Widening of training opportunities in ICT should be considered. The Association of Educators of Nigeria should also encourage lecturers to use power-point and projectors during their annual conference paper presentations. This will force them to learn how to go online and use most of the ICT tools especially now that ICT is forcing itself into our vein. This will make educators to be relevant in this global competitive and innovative arena.

References

- Agbamu, T. P. (2004). Restructuring business teacher education through ICT-driven curriculum. Paper presented at the Annual National Conference of the National Association of Business Educators, University of Calabar.
- Fisher, T. (2005). 'Technology means nothing without humans'. Retrieved on October 4, 2012, from http://www.tes.co.uk/search/story/?story_id=2082994
- Gates, B. (1996). *The road ahead*. New York: Penguin Books.

- Government of India (2009). Draft National Policy on ICT in School Education in India, Ministry of Human Resources Development (MHRD)
- Harris, A. (2001). Contemporary perspectives on school effectiveness and school improvement. Harris, A. & Bennett, N. (Eds). School effectiveness and improvement: alternative perspectives. London: Continuum.
- Mishra, M. P., Vinay, K. S. & Tripathi, R. C. (n.d). ICT as a tool for teaching and learning in respect of learner with disability. Retrieved on October 4, 2012 from www.col.org/pcf6/fp/zIN1307.doc
- Okolocha, C. C. and Ile, C. M. (2007). Meeting the personnel needs of the industrial sectors through business education: The views of private industrialist. UNIZIK Orient Journal of Education, 3 (1), 39-48.
- Olaofe, I. A. (2005). Nigeria educational emancipation: roadmap from crises to resurgence. Faculty of Education Seminar Series, Ahmadu Bello University, Zaria.
- Organization for Economic Cooperation Development, OECD, (2001). Schooling for tomorrow: Learning to change. <https://www.oecd.org/site/schoolingfortomorrow/knowledgebase/.../ict/41289267.pdf>