

Full Length Research Paper

Perceived usefulness as a correlate of extent of Information and Communications Technologies (ICTs) use for teaching by library educators in universities in Nigeria

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Information and Communications Technologies (ICTs) integration for teaching is the application of information, communication and telecommunication technologies, equipment and hardware for instructional purposes. With ICT, a lot of information resources and software can be provided on time and with ease. The research presumed that the perception of how useful for teaching (or otherwise) the ICTs are may affect their use among library educators in Nigerian universities. To establish or refute this, descriptive survey design was adopted and the population is 293 educators engaged in 27 universities. All the educators participated in the study. Out of the 293 copies of the questionnaire distributed, 211 copies were returned of which only 208 copies were found useful giving a response rate of 72%. The scales: Extent of Use ($r = 0.883$) and perceived usefulness ($r = 0.959$) were used to collect data which was analysed using descriptive and inferential statistics to answer two research questions and test an hypothesis at 0.05 level of significance. Perceived usefulness was found to be negative. Analysis of its influence on the extent of use of ICT for teaching showed significant correlation ($r = 0.174$; $p > 0.05$). This implies that the library educators perceived ICT not useful for teaching LIS courses and that the extent they will go in using ICT was dependent on how useful they perceived ICT. This may explain the low use of ICT for teaching among them. Therefore, training and support programmes should be designed to encourage a positive perception and an increase use of a wider range of ICTs for quality and effective teaching practices.

Key words: Perceived usefulness, ICT integration, teaching, library educators, library schools, Nigeria.

INTRODUCTION

Information and Communication Technologies (ICTs) integration for teaching is changing educators' role from a traditional teacher to that of a coach and facilitator in

the classroom while at the same time developing students' skills for cooperation, problem solving and lifelong learning. ICTs have not only changed the role of

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educators in the classroom, but have also provided them with a large number of software, websites and resources which can be utilised for instructional purposes (Ruthven et al., 2005; Demirci, 2009).

In spite of the widespread use of ICT for personal research, correspondence and administrative duties observed among library educators in universities in Nigeria, ICT integration for teaching in the classroom of some of these universities is observed to be low and slow. This is because integrating ICT for teaching is a complex phenomenon that involves understanding educators' perception about teaching, learning and technology. If educators perceive a type of technology beneficial for their lessons, technology integration can be achieved more easily. Simply put, spending resources equipping schools and/or classrooms with computer hardware and software without taking into account whether educators are comfortable using technology in instruction would be a waste (Agboola, 2006; Hew and Brush, 2007; Kumar et al., 2008; Keengwe and Onchwari, 2008; Demirci, 2009).

Trucano (2005), Agboola (2006) and Kumar et al. (2008) warned that educational technology is not, and never will be, transformative on its own but requires educators who can integrate it into curriculum and use it to improve student learning. Thus, it is clear that technology cannot replace educators since educators are the key to whether technology is used appropriately and effectively. Grainger and Tolhurst (2005) asserted that the effectiveness or otherwise of educational technology is determined not by its mere presence in the classroom but by educators' acceptance and readiness to use it.

These arguments revealed that library educators' role is really critical as they are the ones who have to decide whether or not to use the available technological tools in library schools. Though ICT tools have become widely used for administrative work (such as, preparation of lecture and unit plans, organising scores and reports of students and for official correspondence), entrance examinations and written interviews in some of the university-based library schools in Nigeria, this wide use of ICT has not yet been observed in the teaching activities of library educators in these universities.

Appreciable ICT integration for teaching may be informed by library educators' perception of how useful they are in contributing to, enabling, promoting and enhancing teaching. Hennessy et al. (2010) explained that the belief that an innovation should offer "added value" above and beyond existing practice is paramount in its adoption and use. New approaches to teaching, according to them, must be seen by educators as meeting their needs and that of their students. In other words, the benefits from ICT must be observable, compatible and manageable before they can be accepted by educators and integrated for teaching.

Tella et al. (2007) examined teachers' use of ICTs and implications for further development of ICT use in Nigerian schools. Their findings showed that most

teachers perceived ICT very useful for teaching and learning. The implication is that teachers will be inclined to use technology if they perceive it to be useful. In a longitudinal study that examined technology acceptance by teachers in Hong Kong, Hu et al. (2003) investigated the impact of perceived usefulness on the use of educational technologies and found significant positive results between these variables.

The preliminary investigation revealed that although educators in university-based library schools in Nigeria own and use computers for their own research and administrative work, many of them are not using computers and other instructional technologies and applications in their classrooms for teaching in spite of reports of an increased number of computers installed at these universities. Hence, this study, on the assumption that some of these ICTs are available and accessible to library educators in university-based library schools in Nigeria, investigated whether their perception of how useful for teaching the ICTs are may affect their use (or non-use) of ICTs for teaching.

Statement of the problem

The problem observed is the low use of ICTs for teaching in university-based library schools in Nigeria. This is due to the fact that in many of the public universities, administrative attention is not given to improving teaching and learning with technology and often investment are done in latest technologies without considering library educators' needs, thoughts, belief, feelings, interests and perception. This has resulted into less desirable ad-hoc implementations in most of the library schools. In some of the private universities where ICTs are procured, it has been observed that they are not being used optimally and maximally by library educators for teaching but to secure pass marks during accreditation exercises.

It was also observed that many of the educators have not been using ICT appreciably for teaching and this has prevented them from knowing how useful they are for teaching. It can also be said that their perceived low usefulness of ICT for teaching may explain why many of them are not integrating ICT extensively for teaching. Furthermore, individual educators' initiative was observed to account for most of the ICTs integration in the classrooms of the university-based library schools in Nigeria but what remains unclear is the extent to which this is occurring across universities.

Though literature revealed that much has been written about the general use of ICT and multimedia resources by secondary school teachers, students, librarians and general faculty in universities in Nigeria, personal factors affecting library educators' use of technology for teaching have not been well researched into. It was on this premise that the study investigated whether the library educators' perceived usefulness of ICT for teaching may

influence the extent of their use of ICT for teaching with the aim of proffering solution to the identified problem in order to enhance teaching quality and effectiveness.

Objectives of the study

The main objective of this study was to investigate the influence of perceived usefulness on the extent of use of ICT for teaching by library educators in universities in Nigeria. The specific objectives were to:

1. Determine the extent of use of ICT by library educators for teaching in universities in Nigeria;
2. Ascertain the educators' perceived usefulness of ICT for teaching;
3. Find out the relationship between perceived usefulness and the extent of use of ICT by library educators for teaching;

Research questions

The research questions are:

1. What is the extent of use of ICT for teaching by library educators in universities in Nigeria?
2. How useful for teaching do the library educators perceive the use of ICT?

Hypothesis

The following null hypothesis was tested in the study at 0.05 level of significance:

There is no significant relationship between perceived usefulness of ICT and the extent of use of ICT for teaching.

Scope of the study

The study is an investigation of the effect of perceived usefulness on use of ICT for teaching by library educators in universities in Nigeria. The population of the study consists of all (full/part time) library educators that were engaged by the 27 university-based library schools in Nigeria. This sums up to 293. How useful the educators perceived ICT and the influence of this perception on the extent of use of ICT for teaching were investigated using descriptive and inferential statistics.

Significance of the study

An evaluation of the extent to which library educators

integrate ICT for teaching and exploration of the influence of their perception of usefulness on ICT integration for teaching, may contribute to decisions about future professional developmental needs because more will be known about the educators' preparedness for change in teaching practices. The information gathered from this study could also be helpful in providing more up to-date information on the current practices in the use of ICT for teaching in university-based library schools in Nigeria. The study through, its logical review of relevant literature; its findings and recommendations, is expected to contribute to knowledge and be an addition to the body of literature in Library and Information Science (LIS) that will be available to future researchers and educational policy makers for consultation.

LITERATURE REVIEW

Educators' perception of usefulness of ICT for teaching

Perception is the result of individuals gaining knowledge through seeing, hearing or through the other senses. Perception is an immediate or intuitive recognition, understanding or insight (Bluff, 2011).

In this study, perceived usefulness is defined as the ability of the educators to "see", conceive, realise or come to the understanding of the value, relevance, usefulness and impact (or otherwise) of ICTs in enhancing instructional preparation and delivery. From the literature reviewed (Shen et al., 2006; Ataran and Nami, 2011; Aypay et al., 2012; Ke et al., 2012), it was found that perception of the usefulness of technology in aiding classroom work is influential and the belief that an instructional innovation should offer "added value" above and beyond existing instructional practice is important in determining its acceptance, adoption and use. New approaches to teaching must also be seen as compatible with existing practices and be perceived as meeting a need (Hennessy and Deaney, 2005).

According to Askar et al. (2006), the nature of the innovation largely determines what specific type of relative advantage is important to adopters expressed as economic profitability, social prestige, decrease in discomfort, low initial cost, time savings, and immediacy of rewards. Other features of sustainable and transferable innovations in schools as opined by Hennessy and Deaney (2005) in their report on sustainability and evolution of ICT-supported classroom practice in UK are user-friendliness, adaptability and applicability to other classroom contexts.

Library educators' perception of the usefulness of ICTs for teaching is very germane to their acceptance and use. This is because not only that an ICT that is perceived useful will be used; it will also be committed to more use. Researchers in the past have studied usefulness of

systems as perceived by systems' users and had found significant effects between this variable and system use. For instance, in a longitudinal study that examined technology acceptance by teachers in Hong Kong, Hu et al. (2003) investigated the impact of perceived usefulness on the use of educational technologies by teachers and found significant positive results between these variables.

Another study that established that teachers will be inclined to use technology if they perceive it to be useful, is that of Tella et al. (2007) who examined teachers' use of ICTs and implications for further development of ICT use in Nigerian schools using a census of 700 teachers drawn from 25 purposively selected private secondary schools in Ibadan, Oyo State. Their findings showed that most teachers perceived the use of ICT in teaching as a very useful instructional innovation.

On perceived usefulness of technology, research shows that educators who have a high value for educational technology and perceive it to be useful completely transform their teaching (Tella et al., 2007; Kumar et al., 2008; Ataran and Nami, 2011). Kumar et al. (2008) investigated the effects of technology acceptance constructs on actual usage of computer (AUC) among 318 teachers in Malaysia and reported a significant positive effect between perceived usefulness and actual use of computer by the teachers. The positive effect points out that as the perceived usefulness of computer amongst teachers' increases, they experience better actual use of computer. According to the study, as teachers find the application of computer technology to be more useful, they would be determined to use it more. Perceived usefulness in relation to the use of ICTs has been universally recognized as an important factor in the success of ICT integration in instruction. The role that perceived usefulness plays in the adoption of an instructional innovation has been examined by different researchers (Shen et al., 2006; Tella et al., 2007; Ataran and Nami, 2011; Aypay et al., 2012; Ke et al., 2012). Tella et al. (2007) stated that the application of technology to teaching and learning has the advantage of:

heightening the motivation; helping recall previous learning; providing new instructional stimuli; activating the learner's response; providing systematic and steady feedback; facilitating appropriate practice; sequencing learning appropriately and providing a viable source of information for enhanced learning. Teachers who use this system of instructional strategy would be able to kindle in the hearts of the learners a desirable attitude towards information technology tools in their entire way of life.

On the contrary, Bennett and Bennett (2003) in a review of factors affecting the diffusion of innovation when structuring a faculty training program opined that the most important barriers that educators face while using

technology for teaching is educators' lack of willingness and their belief that technology is not useful, not lack of technology or funds. In the same vein, Hennessy et al. (2010) indicated that while teachers in Sub-Saharan Africa did not feel that their own jobs were threatened by computers, they still saw them as dehumanising, isolating, prone to error and data loss and possibly as a violation of their right to privacy.

Similarly, the respondents in Phelps and Maddison (2008) study of teachers' values, attitudes and beliefs in technology in the visual arts classroom in Australia submitted that technology makes teachers' jobs so much more demanding and at times, stifled student creativity or take away their natural ability. Technology, according to them, could be very removed and isolating. A number of the teachers surveyed were reserved, if not afraid, that students would no longer develop foundational skills. Other challenges to technology use in teaching as perceived by the teachers are students' over reliance on the Web for information; Internet information being at times invalid; students losing the ability to read, write and research with books and the issue of their involving in plagiarism.

Though, some of these challenges may be true in some cases but the immense benefit of having a world of information resources on educators' desk at the click of the computer mouse; the integration of sound, graphics and audio into text, a feat which is not possible in some years past; the enticing prospect of an unlimited access into computers/servers, networks, databases and resources across the world at any time of the day; instantaneity of consultation and feedback; the cooperative learning and "across-country or continent" teaching and research collaboration enabled by this technology-driven approach and the mobility, visibility (and sometimes anonymity) afforded academia and their works, may outweighed any perceived disadvantage. Hence, educators who wish to deliver a current, cutting-edge and quality instruction and "stand-out" among colleagues are advised to accept, acquire the skill and use ICT extensively in their teaching practices.

Gray and Souter (2004) in a study of teachers' use of ICT in USA, found that although there appeared to be an awareness of the potential of technology, the teachers indicated that they did not "see" the introduction of technology radically changing teaching, nor changing the teacher-student relationship, though they were reasonably confident in their use of technology. However, Tearle (2003) cited by Grainger and Tolhurst (2005) observed that the issue is not the relative importance of equipment, support or training, but a "much broader debate about mindsets, assumptions, beliefs and values of individuals and organisations".

Supporting this view, Tella et al. (2007), opined that "if teachers "see" no need to question or change their professional practice... then they are unlikely to adopt the use of ICT [but] if they perceive ICT to be useful to them,

their teaching and their students' learning, ... they are more likely to have a positive attitude to the use of ICT in the classroom". Therefore, integrating technology into teaching not only requires dealing with hardware and software issues but also dealing with complex issues like human cognition, values and policy (Hsu et al., 2007). It has been found that educators' theories about teaching and educational beliefs are central in influencing educators' use of technology in their teaching (Peeraer and Petegem, 2011; Mumtaz, 2000).

Every school, however, has a culture which may affect ICT integration for teaching. School culture is the basic assumptions, norms and values, and cultural artifacts that are shared by school members. These meanings and perception indirectly affect behaviour in the organisation of schools. Hence, if the technology is not well-received by educators there must be a mismatch of values between the school's cultural perception and the perception of the cultural fit of the technology. Thus, educators who have positive perception about the cultural relevance of educational technology will apply technology in instruction (Zhao and Cziko, 2001; Zhao and Frank 2003; Hsu et al., 2007; Afshari et al., 2009).

Each specialty, subject or subject area also has a particular way of imparting knowledge to its learners or initiates, hence, any technology or application to be introduced in teaching and learning must pay particular attention to this subject subculture for effective integration and result. Supporting this view, John (2005) while investigating subject sub-culture, pedagogical practice and teachers' perceptions of the classroom uses of ICT in UK, reported that school subject cultures are built on deep traditions and that these need to be addressed if technology is to become more embedded in the curriculum of schools. Understanding educators' values, motivations and discipline specific concerns is a vital ingredient in effective and sustainable instructional support.

Consequently, Abdo and Semela (2010) recommended that school administrators and instructional designers and researchers need to seriously consider educators' perspectives while attempting to integrate or encourage the integration of ICT for teaching in schools as educators' non-support of a particular instructional innovation may have a far-reaching effect than the technical challenges faced in its adoption. This is because the non-cooperation of the educators may still remain for a longer time even after the technical issues have been resolved. Supporting this view, Askar et al. (2006) opined that how teachers perceive and react to these technologies is far more important than the technical obstacles affecting implementation and use. Hence, the need to carry educators along in any instructional innovation planning and implementation can never be over-emphasised. It therefore follows that if educational policy is to successfully integrate ICT into teaching and learning, the school managers need to find ways of

adjusting positively educators' perception about the usefulness and pride of place ICT should be given in teaching and learning.

METHODOLOGY

Design

Descriptive survey design was adopted for the study. This is because it is the most appropriate in systematically collecting and analysing data without any manipulation or control.

Population

The target population is all the (full/part time) library educators engaged in the 27 universities presently offering (LIS) courses. The figures collected from the universities summed up to a total of 293 library educators.

Sample size and sampling technique

Total enumeration technique was adopted. In other words, all the library educators were covered in the study.

Instrumentation

A questionnaire tagged "*Influence of Perceived Usefulness on ICT Use for Teaching*" was used to collect data from the educators. The questionnaire contained two scales or sections. Section A tagged *Extent of Use of ICT for Teaching (EOUT)* was developed by the researcher based on the discussions from the literature. In this section, the respondents were required to indicate by ticking, their extent of use of 23 types of ICT for teaching on a Scale that ranged from daily to never use (that is, on a scale of 1-7. Daily (DLY) was taken as 1, Every Other Day (EOD) as 2, Weekly (WKL) as 3, Every Other Week (EOW) as 4, Monthly (MON) as 5, Occasionally (OCC) as 6 and Never (NEV) was taken as 7). In other words, higher mean values on the scale indicate low use while low mean values indicate high use. **Section B** collected data on *Library Educators' Perceived Usefulness of ICT for Teaching (LEPUI)*. The scale was adapted from the studies of Jaber (1997), Mumtaz (2000), Tella et al. (2007), Hsu et al. (2007), Gulbahar and Guven (2008) and Theng and Hua (2008). There were 24 items that measured perceived usefulness of ICT for teaching. The scale had 12 items each for both positive and negative perception statements. The respondents were asked to indicate their level of agreement or disagreement to the statements. Those who strongly agreed and/or agreed to a positive statement in the scale and disagreed and/or strongly disagreed with a negative statement perceived ICT useful for teaching and vice versa.

Reliability of the Instrument

For pretest, a trial data collection was made on 22 library educators from four federal polytechnics in Nigeria (Nekede, Oko, Ede and Offa). The data collected from the pretest was used to improve the reliability of the questionnaire by calculating the reliability coefficient values for the questionnaire using Cronbach Alpha method contained in the Statistical Package for Social Sciences (SPSS) version 18. The Cronbach Alpha values for the items in the questionnaire were confirmed for the two scales and the result is as follows: Extent of

Use of ICT ($r = 0.883$) and Perceived Usefulness ($r = 0.959$). These values were found from literature to be high enough and good indicators of reliability (Hair et al., 2010). Hence, the researchers proceeded with the research using the questionnaire as a data collection instrument.

Procedure for data collection

The questionnaire was administered on all the library educators on a hand-to-hand basis. The administration of the questionnaire took place during the school hours in each of the universities. Copies of the questionnaire that were filled and returned immediately were collected. A return visit of one week interval was made to some schools to collect copies of the questionnaire outstanding. After the initial retrieval, reminder SMS were sent, through some contacts in universities with low rate of return, to those who had not responded, in order to ensure at least 50% rate of response per university. The researcher resorted to postal and courier services and/or phone call to retrieve some copies of the outstanding questionnaire. The data collection exercise took five months (February to June, 2015) in all. Instrument return rate: Out of the 293 copies of the questionnaire distributed, 211 copies were returned out of which only 208 copies were found useful giving a response rate of 72%.

Method of data analysis

The research used quantitative statistical methods. The data collected from the respondents were described, summarised and analysed with descriptive statistics (that is, frequency distribution, percentages displayed in tables, means and standard deviation) and inferential statistics (that is, Pearson Product Moment Correlation) using the Statistical Package for Social Sciences (SPSS) version 18. The study provided answers to two research questions and tested one hypothesis. The two research questions were answered with the use of descriptive statistics while the null hypothesis was tested with Pearson Product Moment Correlation. Statistical significance test was made at alpha 0.05.

RESULTS

Findings from the research questions:

Two research questions were answered in the study. The findings are presented as follows.

Research question 1: What is the extent of use of ICT for teaching by library educators in university-based library schools in Nigeria?

The results in Table 1 reveal the extent of use of ICT for teaching by the library educators. On a Scale of daily (1) to never (7), and a grand mean of 3.90 which serves as a borderline for high or low scores, it was revealed that camcorders was the first among the ICT with low use by mean score rating and was followed by web camera; analogue/digital camera; analogue/digital video devices; discussion/ mailing lists, forum, listserv and newsgroups; radio cassette / audio recorder and electronic bulletin boards for news. It was also revealed that majority of the ICTs were of low use (that is, having mean values above

the grand mean). In other words, higher mean score indicates low use. However, ICTs such as electronic whiteboards, mobile and handheld technologies, modems/ Wi-fi/wireless, cable Internet, computers, scanners and printers were used appreciably.

Research question 2: How useful for teaching do the library educators perceive the use of ICT?

Findings of the library educators' perception of the usefulness of ICT for teaching in university-based library schools in Nigeria is presented in Table 2.

Responses on library educators' perceived usefulness of ICT for Teaching (LEPUI) are as shown below:

ICT enable my working at my pace, place and time (mean =2.14) ranked highest by the mean scores rating, and was followed by Using ICT would enable the accomplishing of my teaching tasks more effectively (mean =2.13). I don't get current information useful for teaching while using ICT for teaching has mean weight of 1.93 while Using ICT for teaching decreases student/teacher interactions has its mean as 1.91. However, Using ICT for teaching makes me lose control of the class and My use of ICT for teaching has reduced my students' learning achievement both weighted 1.89 by mean score ranking. ICT offers me great opportunities to reach a world of information resources has a mean score of 1.88 while My use of ICT for teaching hindered my discussing teaching ideas with colleagues weighted mean score is 1.85.

Using ICT makes my lessons more diverse by bringing in different materials/ideas and Use of ICT would reduce my instructional productivity have the same mean score of 1.82. Similarly, Using ICT improves the presentation of materials for my lessons, The use of ICT makes my classroom administration more efficient, Teachings and learning are enriched with the use of ICT, Better networking opportunities and peer support are hindered with the use of ICT for teaching and My using ICT for teaching could hinder effective use of my class time, all have the same mean score of 1.81. Furthermore, Using ICT makes my lessons more fun with a mixture of texts, sounds and images and Using ICT for teaching could hinder my students' developing ability for lifelong learning both have mean scores of 1.77.

Using ICT makes me disorganized in my teaching has a weighted mean of 1.76 while "I can handle different learning preferences of my students having varying learning needs by using ICT" has a mean score of 1.75. Using ICT makes my lessons more interesting by varying the ways it is presented, ICT encourage students' deep processing and boost their class performance and the Use of ICT makes me lose interest in teaching, all have weighted mean score of 1.74. Finally, Use of ICT does not make my teaching lively weighted mean is 1.71 while My using ICT in teaching prepare my students for the technology-driven world of work has a mean score of 1.69.

Table 1. Extent of use of ICT for teaching by the library educators

S/N	Types of ICT in use for teaching	Extent of use														Mean	S.D
		DLY		EOD		WKL		EOW		MON		OCC		NEV			
		N	%	N	%	N	%	N	%	N	%	N	%	N	%		
9	Camcorders	38	18.3	7	3.4	16	7.7	7	3.4	2	1.0	46	22.1	92	44.2	5.09	2.36
8	Web Camera	40	19.2	14	6.7	12	5.8	4	1.9	6	2.9	36	17.3	96	46.2	4.99	2.45
7	Analogue/digital camera	36	17.3	22	10.6	9	4.3	3	1.4	9	4.3	36	17.3	93	44.7	4.96	2.43
6	Analogue/digital video devices	44	21.2	8	3.8	18	8.7	10	4.8	7	3.4	38	18.3	83	39.9	4.80	2.43
21	Discussion/ mailing lists, List service and news groups	40	19.2	21	10.1	22	10.6	7	3.4	6	2.9	37	17.8	75	36.1	4.58	2.43
5	Radio Cassette / Audio recorder	54	26.0	23	11.1	6	2.9	4	1.9	6	2.9	37	17.8	78	37.5	4.48	2.59
20	Electronic bulletin boards for news	59	28.4	18	8.7	7	3.4	8	3.8	5	2.4	24	11.5	87	41.8	4.45	2.65
22	Social networking media account	51	24.5	26	12.5	7	3.4	4	1.9	10	4.8	37	17.8	73	35.1	4.44	2.55
2.	Overhead / LCD multimedia projector	40	19.2	18	8.7	27	13.0	13	6.3	7	3.4	49	23.6	54	26.0	4.40	2.32
23	Online public access catalogue	56	26.9	15	7.2	20	9.6	7	3.4	14	6.7	47	22.6	49	23.6	4.18	2.43
19	University website/ blogs	58	27.9	23	11.1	25	12.0	2	1.0	4	1.9	29	13.9	67	32.2	4.09	2.56
13	Intercom and Fixed line telephones	72	34.6	13	6.3	15	7.2	8	3.8	6	2.9	33	15.9	61	29.3	3.99	2.60
15	Public address system / Mini-microphones	55	26.4	16	7.7	26	12.5	20	9.6	4	1.9	45	21.6	42	20.2	3.99	2.35
16	Local area network (Department-wide)	65	31.3	28	13.5	14	6.7	9	4.3	3	1.4	33	15.9	56	26.9	3.87	2.55
17	Wide area network (Campus-wide)	68	32.7	28	13.5	11	5.3	10	4.8	1	0.5	34	16.3	56	26.9	3.84	2.57
4	Satellite/Cable television/ Plasma / Laserdiscs	81	38.9	18	8.7	12	5.8	5	2.4	-	-	31	14.9	61	29.3	3.78	2.67
10	Printers	76	36.5	29	13.9	15	7.2	3	1.4	3	1.4	37	17.8	45	21.6	3.57	2.54
11	Scanners / Digitizers	65	31.3	28	13.5	32	15.4	11	5.3	6	2.9	27	13.0	39	18.8	3.49	2.35
3	Computer (desktops and laptops)	84	40.4	19	9.1	19	9.1	7	3.4	2	1.0	43	20.7	34	16.3	3.43	2.47
18	Cable Internet	76	36.5	30	14.4	21	10.1	7	3.4	2	1.0	29	13.9	43	20.7	3.42	2.47
12	Modems / Wi-fi/wireless	86	41.3	24	11.5	11	5.3	14	6.7	5	2.4	34	16.3	34	16.3	3.32	2.44
14	Mobile and handheld technologies	97	46.6	22	10.6	8	3.8	5	2.4	6	2.9	27	13.0	43	20.7	3.26	2.56
1.	Electronic whiteboards	92	44.2	26	12.5	20	9.6	11	5.3	3	1.4	25	12.0	31	14.9	3.03	2.34

Grand mean = 3.90; Grand SD = 2.48. %, percentage (%); N, number.

Overall, with a grand mean of 1.83, eight responses were positive (greater than or equal to the grand mean) while 16 were negative (lesser than the grand mean). This implied that the library educators' perception of the usefulness of ICT for teaching was negative, that is, they perceived ICT not useful for teaching library science courses.

Hypotheses testing

A null hypothesis was tested in the study at 0.05 level of significance. The finding is presented as follows.

Hypothesis 1: There is no significant relationship between perceived usefulness of ICT and the

extent of use of ICT for teaching.

Result of the data analysis displayed in Table 3 revealed a positive and significant relationship between perceived usefulness of ICT and the extent of use ($r = 0.174^*$; $N=208$; $p < 0.05$).

Therefore, the null hypothesis was rejected. This result implies that perceived usefulness of ICT for

Table 2. Perceived usefulness of ICT for teaching

S/N	Perceived usefulness items	SA		A		D		SD		Mean	S.D
		N	%	N	%	N	%	N	%		
1	ICT enable my working at my pace, place and time	51	24.5	92	44.2	50	24.0	15	7.2	2.14	0.87
2	Using ICT would enable my accomplishing my teaching tasks more effectively	58	27.9	79	38.0	57	27.4	14	6.7	2.13	0.90
14	I don't get current information useful for teaching while using ICT for teaching	68	32.7	99	47.6	29	13.9	12	5.8	1.93	0.83
22	Using ICT for teaching decreases student/teacher interactions	67	32.2	100	48.1	34	16.3	7	3.4	1.91	0.78
13	Using ICT for teaching makes me lose control of the class	72	34.6	97	46.6	28	13.5	11	5.3	1.89	0.83
15	My use of ICT for teaching has reduced my students' learning achievement	72	34.6	93	44.7	37	17.8	6	2.9	1.89	0.79
9	ICT offers me great opportunities to reach a world of information resources	64	30.8	113	54.3	23	11.1	8	3.8	1.88	0.75
20	My use of ICT for teaching hindered my discussing teaching ideas with colleagues	78	37.5	94	45.2	26	12.5	10	4.8	1.85	0.82
5	Using ICT makes my lessons more diverse by bringing in different materials/ideas	75	36.1	102	49.0	25	12.0	6	2.9	1.82	0.75
17	Use of ICT would reduce my instructional productivity	75	36.1	100	48.1	29	13.9	4	1.9	1.82	0.74
6	Using ICT improves the presentation of materials for my lessons	76	36.5	102	49.0	24	11.5	6	2.9	1.81	0.75
7	The use of ICT makes my classroom administration more efficient	73	35.1	106	51.0	25	12.0	4	1.9	1.81	0.72
10	Teaching and learning are enriched with the use of ICT	77	37.0	100	48.1	24	11.5	7	3.4	1.81	0.77
23	Better networking opportunities & peer support are hindered by the use of ICT for teaching	82	39.4	89	42.8	31	14.9	6	2.9	1.81	0.79
24	My using ICT for teaching could hinder effective use of my class time	82	39.4	92	44.2	26	12.5	8	3.8	1.81	0.80
4	Using ICT makes my lessons more fun with a mixture of texts, sounds and images	88	42.3	88	42.3	24	11.5	8	3.8	1.77	0.80
21	Using ICT for teaching could hinder my students' developing ability for lifelong learning	84	40.4	94	45.2	23	11.1	7	3.4	1.77	0.78
18	Using ICT makes me disorganized in my teaching	88	42.3	88	42.3	25	12.0	7	3.4	1.76	0.79
11	I can handle different learning preferences of my students having varying learning needs by	85	40.9	96	46.2	20	9.6	7	3.4	1.75	0.76
3	Using ICT makes my lessons more interesting by varying the ways it is presented	99	47.6	74	35.6	26	12.5	9	4.3	1.74	0.84
8	ICT encourage students' deep processing and boost their class performance	84	40.4	100	48.1	19	9.1	5	2.4	1.74	0.72
19	Use of ICT makes me lose interest in teaching	89	42.8	90	43.3	24	11.5	5	2.4	1.74	0.76
16	Use of ICT does not make my teaching lively	87	41.8	98	47.1	19	9.1	4	1.9	1.71	0.71
12	Using ICT in teaching prepare my students for the technology-driven world of work	91	43.8	99	47.6	9	4.3	9	4.3	1.69	0.75

Grand mean = 1.83.

teaching had positive and significant relationship with the extent of use (p=.000). This implies that the higher the library educators perceived usefulness of ICT, the greater they will tend to use it. In other words, perceived usefulness of ICT for teaching is a significant and positive correlate of the extent of use of ICT for teaching by the library educators. The result of correlation analysis

indicating the relationship between perceived usefulness of ICT and the extent of use of ICT for teaching is shown in Table 3.

DISCUSSION

The findings revealed that many ICTs which could

have been beneficial to teaching and learning were not being used by library educators in university-based library schools in Nigeria. For example, camcorders, camera, video devices, and audio recorder which many library schools were not taking full advantage of, could be used to take care of the sick, indisposed and the challenged (among the educator and student population).

Table 3. Correlation result for perceived usefulness and extent of use of ICT

Variable	Mean	Std. Deviation	N	R	P	Remark
Perceived usefulness	43.9712	12.9012	208	.174*	0.000	Sig.
Extent of use	93.4279	40.0417			-	-

*Significant ($p < 0.05$).

This is because a live lecture could be captured by using these devices and kept for later relay and use. For instance, past records of previous year's lecture, could be played or given to the present class of students whose teacher is indisposed, instead of leaving them disappointed.

In addition, these devices could also be used to record presentations, interviews, discussions and role-plays. Past research studies have supported the use of these technologies and devices for teaching and highlighted their educational benefits. For example, Almekhlafi and Almeqdadi (2010) examined video technology as a tool used by teachers in the school classroom of the United Arab Emirates. Not only that their study found this technology in use against the findings of this study, they recommended that educators should make gainful use of them for classroom teaching. Liquid-crystal display (LCD) multimedia projectors were available in some of the universities but were found to be of low use. This may be as a result of negative perception and/or inadequate technical and infrastructural support. This finding is similar to that of Peeraer and Petegem (2011) in Vietnam and Ofuyatan et al. (2014) in Nigeria who found limited use of modern systems and resources such as multimedia projectors for teaching in higher education. It is believed that adequate support and increase experience in the use of these systems may lead to their higher use for teaching.

Nevertheless, some ICT (for instance, electronic whiteboards, mobile and handheld technologies, wireless and cabled Internet connectivity, computers, scanners and printers) were found to be used appreciably. Library educators' familiarity with the use of some of these systems for research, personal correspondences and administrative purposes seems to explain their high use for instructional purposes. Hence, library educators should be encouraged to sustain their present high use of these common ICTs for teaching as this will prepare them and serve as the foundation of their training in more advanced instructional technologies.

Library educators' perception of the usefulness of ICT for teaching is found to be negative in this study. This means that the library educators perceived ICT not useful for teaching library science courses; hence, their low use and integration for teaching. This may be an expression of the need for exposure and training in the use of wider range of ICT for teaching. This finding is in agreement with the studies of Bennett and Bennett (2003) which

identified the most important barrier that educators face while using technology as educators' belief that technology is not useful for teaching and that of Hennessy, et al. (2010) that some teachers in Sub-Saharan Africa did not believe that technology has a useful educational objective and that they are supplemental and not essential to their teaching and classrooms. Related to this is the finding of Butler and Sellbom (2002) that the belief that technology enriches and improves education or otherwise is a factor affecting technology adoption and use.

Any of these thoughts may explain the library educators' reluctance to change the status quo, though, many research studies (Shen et al., 2006; Tella et al., 2007; Kumar et al., 2008; Aypay et al., 2012), developments, and global practices in education daily point to the increasing use and usefulness of ICT for teaching. It therefore follows that if educational policy in Nigeria is to successfully integrate ICT into teaching and learning, the school managers need to find ways of training and support that will help in adjusting positively educators' perception about the pride of place ICT should be given in teaching and provide necessary encouragement for educators' seamless adoption and use of ICT-based instruction.

Furthermore, analysis of the relationship between perceived usefulness of ICT and the extent of use for teaching showed significant correlation ($r = 0.174^*$; $N=208$; $p < 0.05$). This means that the extent of ICT use for teaching is influenced by the perceived usefulness of ICT. The implication of this is that the extent the educators will go in using a particular ICT for teaching will depend on how useful the particular ICT is perceived to be for teaching. This finding is in line with past studies (Davis et al., 1989; Ataran and Nami, 2011; Ke et al., 2012). Davis et al. (1989) found users' perceived usefulness of a particular system influencing their quest for the system's use. They maintained that how useful or otherwise a system is may affect users' decision to use (or not to use) a system.

Going by the evidence of the many empirical studies reviewed and the present finding that usefulness is important to the library educators in determining the extent of ICT integration for teaching, it is hoped that the heads of the library schools will expose the educators to training and support programmes that will demonstrate the usefulness of a wider range of ICT instructional tools and with experience, it is believed that the library

educators will make more use of the ICT tools for teaching and commit them to more usefulness.

Conclusion

Based on the research objectives, the study found that:

1. The use of many ICT tools for teaching by library educators in universities in Nigeria was low.
2. Library educators' perceived usefulness of ICT for teaching LIS courses were found to be negative.
3. There was a significant and positive relationship between the library educators' perceived usefulness of ICT for teaching and the extent of ICT integration for teaching.

In the light of the findings of this study, it was concluded that the educators' negative perceived usefulness of ICT for teaching may indicate the need for exposure to best practices in the use and usefulness of a wider range of ICTs for teaching. Nonetheless, the extent the library educators will go in using ICT for teaching will depend on how useful they perceive ICT to be. Hence, any of the ICT they perceive not useful, may be immediately dismissed and denied its usefulness.

The following recommendations were therefore, proffered:

1. For a sustainable ICT use, researchers, policy makers and system developers who seek to attract more library educators into an increasing ICT use for teaching should kindle personal, institutional and national interests in the use and usefulness of ICT for teaching, especially in universities, so that there will be synergy and collaboration among all the stakeholders in ICT resource acquisition and implementation.
2. Regular on-the job hands-on training and/or short practical courses on ICT use for teaching at the tertiary education level can be offered within the library educators' immediate domain or vicinity (for instance, within their usual classrooms and/or campus environment); the impact of the training should be constantly evaluated; knowledge gained from the training promptly integrated into teaching practices and any challenge encountered should be quickly reported and immediately arrested for an appreciable or extensive ICT teaching use.
3. Future researchers may consider a study on institutional culture, management attitude and resource allocation as correlates of instructional use of technology by educators since corporate values, administrators' support and the measure of allocated resources may also impact on the extent an educator may go in integrating technology for teaching.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

- Abdo M, Semela T (2010). Teachers of poor communities: the tale of instructional media use in primary schools of Gedeo Zone, Southern Ethiopia. *Aust. J. Teach. Educ.* 35(7): 78-92.
- Afshari M, Abu Bakar K, Su Luan W, Abu Samah B, Say Fooi F (2009). Factors affecting teachers' use of information and communication technology. *Int. J. Instr.* 2(1):78-104.
- Agboola AK (2006). Assessing the awareness and perceptions of academic staff in using e-learning tools for instructional delivery in a post-secondary institution: a case study. *Innov. J.* 11(3) Article. 4:1-13.
- Almekhlafi AG, Almeqdadi FA (2010). Teachers' perceptions of technology integration in the United Arab Emirates school classrooms. *Educ. Technol. Soc.* 13(1): 165-175.
- Askar P, Usluel YK, Mumcu FK (2006). Logistic regression modeling for predicting task-related ICT use in teaching. *Educ. Technol. Soc.* 9(2):141-151.
- Ataran A, Nami K (2011). Examining acceptance of information technology: a longitudinal study of Iranian high school teachers. 3rd International Conference on Information and Financial Engineering. Singapore: IACSIT Press. *IPEDR* 12:190-195.
- Aypay A, Çelik HC, Aypay A, Sever M (2012). Technology acceptance in education: a study of pre-service teachers in Turkey. *The Turkish Online J. Educ. Technol.* 11(4): 264-272.
- Bennett J, Bennett L (2003). A review of factors that influence the diffusion of innovation when structuring a faculty training program. *Int. High. Educ.* 6:53-63.
- Bluff L (2011). Something to think about – motivations, attitudes, perceptions and skills in work health and safety: a review of the literature on socio-psychological factors and their influence on organisations" and individuals" responses to regulation. Report prepared for Safe Work Australia. pp. 13-16.
- Butler DL, Sellbom M (2002). Barriers to adopting technology for teaching and learning. *Educause Q.* 25.2:22-28.
- DavisFD, Bagozzi RP, Warshaw PR (1989). User acceptance of computer technology: a comparison of two theoretical models. *Manag. Sci.* 35(8):982-1003.
- Demirci A (2009). How do teachers approach new technologies: geography teachers' attitudes towards Geographic Information Systems (GIS). *Eur. J. Educ. Stud.* 1(1):43-53.
- Grainger R, Tolhurst D (2005). Organisational factors affecting teachers' use and perception of information and communications technology. *Conferences in Research and Practice in Information Technology* 46. Australian Computer Society South East Asian Regional Computer Confederation (SEARCC) Sept. 2005. Sydney, Australia: Graham Low Ed.
- Gray DS, Souter N (2004). Secondary science teachers' use of and attitude towards ICT in Scotland. A Report. Glasgow, UK: University of Strathclyde.
- Gülbahar Y, Guven I (2008). A survey on ICT usage and the perceptions of social studies teachers in Turkey. *Educ. Technol. Soc.* 11(3):37-51.
- Hair JF, Black WC, Babin BJ, Anderson RE (2010). *Multivariate data analysis*. 7th ed. New Jersey: Prentice Hall.
- Hennessy S, Deaney R (2005). Sustainability and evolution of ICT-supported classroom practice. *Becta ICT Research Bursary*. 1-52. Retrieved Nov. 20, 2015, from <http://www.becta.org.uk>.
- Hennessy S, Harrison D, Wamakote L (2010). Teacher factors influencing classroom use of ICT in Sub-Saharan Africa. *Itupale Online J. Afr. Stud.* 2:39-54.
- Hew KF, Brush T (2007). Integrating technology into K-12 teaching and learning: current knowledge gaps and recommendations for future research. *Educ. Technol. Res. Dev.* 55:223-252.
- Hsu YS, Wu HK, Hwang FK (2007). Factors influencing junior high school teachers' computer-based instructional practices regarding their instructional evolution stages. *Educ. Technol. Soc.* 10(4):118-130.
- Hu P.J, Clark THK, Ma WW (2003). Examining technology acceptance by school teachers: a longitudinal study. *Inf. Manag.* 41:227-241.
- Jaber WE (1997). A survey of factors which influence teachers' use of

- computer based technology. Ph.D Thesis. Virginia Polytechnic Institute and State University, Virginia.
- John P (2005). The sacred and the profane: subject sub-culture, pedagogical practice and teachers' perceptions of the classroom uses of ICT. *Educ. Rev.* 57(4):469-488.
- Ke C, Sun H, Yang Y (2012). Effects of user and system characteristics on perceived usefulness and perceived ease of use for the web-based Classroom Response System. *TOJET: The Turkish Online J. Educ. Technol.* 11(3):128-136.
- Keengwe J, Onchwari G (2008). Computer technology integration and student learning: barriers and promise. *J. Sci. Educ. Technol.* 17:560-565.
- Kumar N, Che RR, D'Silva JL (2008). Teachers' readiness to use technology in the classroom: an empirical study. *Eur. J. Sci. Res.* 21(4):603-616. Retrieved July 30, 2014, from <http://www.eurojournals.com/ejsr.htm>.
- Mumtaz S (2000). Factors affecting teachers' use of information and communications technology: a review of the literature. *J. Inf. Technol. Teach. Educ.* 9(3):319-342.
- Ofuyatan O, Opaluwa E, Adeola A (2014). Challenges and effects of e-learning in the development of architecture and engineering in Nigeria's private tertiary institution. *Dev. Ctry. Stud.* 4(23):130-134. Retrieved Feb 1, 2016, from www.iiste.org.
- Peeraer J, Van Petegem P (2011). Factors influencing integration of ICT in higher education in Vietnam. Retrieved Nov. 17, 2015, from <http://www.edilib.org/p/34284/>
- Phelps R, Maddison C (2008). ICT in the secondary visual arts classroom: a study of teachers' values, attitudes and beliefs. *Aust. J. Educ. Technol.* 24(1):1-14.
- Ruthven K, Nennesy S, Deaney R (2005). Incorporating Internet resources into classroom practice: pedagogical perspectives and strategies of secondary-school subject teachers. *Comput. Educ.* 44:1-34.
- Shen D, Laffey J, Lin Y, Huang X (2006). Social influence of perceived usefulness and ease-of-use of course delivery systems. *J. Interact. Online Learn.* 5(3):270-282.
- Tearle P (2003). Enabling teachers to use information and communication technology for teaching and learning through professional development: influential factors. *Teach. Dev.* 7(3):457-471.
- Tella A, Tella A, Toyobo OM, Adika LO, Adeyinka AA (2007). An assessment of secondary school teachers uses of ICTs: implications for further development of ICT's use in Nigerian secondary schools. *The Turk. Online J. Educ. Technol.* 6(3):5-17. Retrieved Sept. 28, 2011, from <http://www.tojet.net>.
- Theng BL, Hua CS (2008). Exploring the extent of ICT adoption among secondary school teachers in Malaysia. *Int. J. Comput ICT Res.* 2(2):19-36
- Trucano M (2005). Teachers, teaching and ICTs: a knowledge maps on Information & Communication Technologies in education. Washington, DC: infoDev / World Bank.
- Zhao Y, Cziko GA (2001). Teacher adoption of technology: a perceptual control theory perspective. *J. Technol. Teach. Educ.* 9(1):5-30.
- Zhao Y, Frank KA (2003). Factors affecting technology uses in schools: an ecological perspective. *Am. Educ. Res. J.* 40(4):807-840.