



**Nigerian Association of
Library and Information
Science Educators (NALISE)**

**PROCEEDINGS OF
THE ANNUAL NATIONAL
CONFERENCE 2016
IBADAN**

Theme:

**QUALITY ASSURANCE IN LIBRARY AND
INFORMATION SCIENCE EDUCATION IN NIGERIA**

Venue:

University of Ibadan
Conference Centre

Date:

9 - 13 May, 2016

University Press PLC
IBADAN ABA ABEOKUTA ABUJA AJEGUNLE AKURE BENIN CALABAR IKEJA
IKORODU ILORIN JOS KADUNA KANO MAIDUGURI MAKURDI MINNA
ONITSHA OSOGBO OWERRI
PORT HARCOURT WARRI YABA ZARIA

Nigerian Association of Library and
Information Science Educators (NALISE)

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First Published 2016

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ISBN 978 978 940 180 2

Published by University Press PLC
Three Crowns Building, Jericho, P.M.B. 5095, Ibadan, Nigeria
E-mail: unipress@universitypressplc.com
Website: www.universitypressplc.com
0802 342 1333, 0802 052 1801, 0802 052 1802, 0705 591 1684,
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E-Readiness and Technology Use in Teaching by Library and Information Science Lecturers in Nigeria

Dr Airen Adetimirin

Department of Library, Archival and Information Studies
University of Ibadan, Ibadan, Nigeria

Email: aeadetimirin@gmail.com; ae.adetimirin@ui.edu.ng

Telephone: +234 802 333 6038

Abstract

The current trend globally in higher education institutions is student-centred learning which can be facilitated through the use of technology for teaching and learning. This allows for learning to take place not only in the classroom but also outside the classroom. It also affords the students the opportunity to interact with different information resources and technology, their colleagues and the lecturers. This necessitates the deployment of technology by Library and Information Science lecturers. The use of technology requires the awareness of such technology, benefits and acquisition of Information and Communication Technology skills. However, literature has revealed that some lecturers are still reluctant to adopt technology for their teaching because it is time consuming and they do not have the requisite skills. This paper highlights the benefits, types, skills and institutional support required to facilitate the use of technology for teaching and learning by lecturers in library schools in Nigeria. It concludes that LIS lecturers need develop ICT skills and adopt technology for their teaching and learning. It recommends that the management of universities in Nigeria should provide the necessary institutional support for the use of technology by the lecturers in library schools.

Keywords: Technology use, Lecturers, Teaching, Library schools

Word count: 193

Introduction

The role of the lecturer in a university is to teach, conduct research and carry out community service which include administrative duties. Teaching involves knowledge transfer and lecturers are expected to transfer knowledge to their students. One of the ways through which this can be achieved in universities is adopting technology for teaching. Globally in education and tertiary institutions, technology is used for teaching by lecturers. This is to facilitate learning to students which can be done not only in the classroom but also outside the classroom.

Students learn differently, and a lecturer should consider this in the preparation of his lectures. A lecturer may be able to meet the different learning needs of students and impact knowledge positively to his students through the use of appropriate technology for course delivery. Adetimirin (2016), in a study of female lecturers' use of technology in the University of Ibadan, Nigeria, reiterated the relevance of technology use by lecturers to meet the different learning abilities of students. Ncube et al. (2014) reported that universities globally and at present African universities are embracing technology, and one major reason why lecturers at the University of South Africa (UNISA) are adopting technology is to increase the employability of students when they graduate.

It is necessary for lecturers to deploy technology for teaching as the global trend at present is that learning should be student-centred, and this can be facilitated with the use of technology. This

implies that the lecturer must consider the student in his planning, designing and delivery of course. This is buttressed by Marimo et al. (2013) who emphasised the role of lecturers to the use of technology for teaching as fundamental to impacting knowledge to students in a study carried out in Midlands State University in Zimbabwe. Hussein (2010) reported that universities in Egypt have adopted technology for teaching; and due to its importance, such universities provide development programmes for the lecturers to enhance their use of technology for teaching. This makes it necessary for universities in Nigeria to follow the global trend. This implies that LIS lecturers in Nigeria must embrace different technologies for teaching so that they can meet the best practices in teaching in universities.

Technology use for course delivery by lecturers may also promote learning for students, as the students can learn at any time convenient for them. This is referred to as e-learning, which is the adoption of technology for teaching and learning. Ncube et al. (2014) defined e-learning as the delivery of instructional content electronically without geographical restrictions, and interaction occurs between learners and peers and lecturers. Yiong (2008) reiterated the importance of lecturers in deploying technology for teaching in universities in Malaysia and reported that it has a positive influence in students accepting e-learning.

For the successful deployment of technology for teaching, lecturers must possess a positive attitude and the requisite skills and knowledge for content development and management (Ncube et al. 2014; Faheeg, 2011). These skills will enable them prepare their courses well and use the appropriate technology for different topics to enhance course delivery. The university should also provide the necessary infrastructure to facilitate technology use. Eslaminejad and Nakhaee (2012) reported that the cost for the provision of the necessary infrastructure by a university is high; therefore, for cost benefit, the institution must be ready and the lecturers who will use the technology must have a positive attitude and perception towards using technology for teaching.

The use of technology by lecturers will vary from one discipline or subject to another and also with different technologies, as confirmed by Shelton (2014) who reported in a study carried out on 795 university lecturers in the United Kingdom that there were differences in the use of technology across universities, disciplines and technologies. The result further revealed that PowerPoint was a major technology used, while blog was grouped as a marginal technology. The author suggested that the university policy should consider disciplines and context when creating a policy on technology use.

Lecturers must be involved in the adoption of technology for teaching as they are the ones that will be using such technology, and the success of the implementation by the university is highly determined by their acceptance. O'Donnell (2010) reported that lecturers are worried that use of technology for teaching and learning would lead to redundancies and active participation in the use of a Learning Management System (LMS). Some lecturers expressed fears of their work being stolen if put on the world wide web and copyright theft (O'Donnell, 2008). The involvement of lecturers will allay such fears and consequently lead to a positive attitude towards technology use.

It, therefore, becomes imperative for universities to consider lecturers in the design and implementation of technology use programmes by creating awareness of using technology, providing continuous training programmes and institutional support for them to meet the goals and objectives of the university. The need to assess e-readiness of the lecturers will minimise the causes of technology failure as the barriers and probable causes will have been determined (Ncube et al. 2014). Alongside the awareness and attitude of the lecturers, the university must provide access to computers and ICT, regular internet connectivity and technical support to encourage the use of technology for teaching (Broadley, 2007).

Benefits of technology use for teaching

Technology use for teaching could be done without the lecturers being physically present in the class as it affords the answering of queries of students even outside the class. This indicates that teaching

can be done anywhere and anytime. Marimo et al. (2013) and Abu-Hassan-Assari (2005) reported that use of technology is not limited by space, location and time. This was confirmed by Ncube et al. (2014) in their study on benefits of e-learning to lecturers in the Department of Information Science, UNISA, South Africa, where they found that lecturers affirmed that e-learning could take place without the physical presence of the lecturers and it is not limited by time, space and location.

Suhail (2015) postulated that many universities in developing countries are adopting technology for teaching and learning because it is cost effective and an efficient means of delivering educational content to the learners. Technology use enhances student-centred learning which is flexible and allows for interaction between students and lecturers during and outside the classroom ((Eslaminejad and Nakhaee, 2012; Abu-Hassan-Assari, 2005). Lectures can be delivered anywhere in the world with the use of the relevant equipment and infrastructure (Marimo et al., 2013), and difficult or abstract concepts can be simplified and easily understood by the students.

Lecturers' use of technology for teaching may improve learning as communication is improved in the class and outside the class as students can interact with the lecturers and the information resources posted to the students. Some authors (Kashorda and Waema, 2011; Hussein, 2010) enumerated the benefits derived from the use of technology as improvement in the quality of teaching and learning and communication of ideas and knowledge from the lecturers to the student, students to lecturers and between the students themselves.

Difficult topics can be delivered using technology which simplifies the topic and allows for better understanding by the students. Ajayi (2008) averred that ICT use by lecturers facilitates active participation of the students in the teaching and learning process and also allows the creation of a virtual learning environment (VLE) to navigate. Ncube et al. (2014) affirmed that the use of technology by Information Science lecturers in UNISA, South Africa will allow for "students to discuss the conceptualisation of academic tasks easily and share ideas at the same and cross-pollination through networking which will hopefully enrich academic discourse and enhance the quality of education".

Use of technology allows for ease of assessment as the posting of assignments can be done online and students can also send their assignments online. This eradicates the submission of assignments face to face which may involve frequent visit to the lecturers' office to physically submit such. The lecturer will be faced with a lot of accumulation of papers in his office due to the students' submission of assignments over a period of time and this occupies space in his office. Muñoz-Merino et al. (2010) suggest that personalised tests can be used by lecturers to assist students learning by targeting individual learners weaknesses in any specific topic thereby achieving the correct learning outcome.

Types of technology used for teaching

Lecturers can use technology such as computers with Internet facilities, Ipad, Ipod, smartphones to search for information from electronic resources such as online databases, course materials and course ware that can be used for the courses they teach. Information from these resources can be used to prepare lectures and improve delivery. Different technology are available that can be used by lecturers. Examples are: Interactive Whiteboard (Smart Board), Learning Management System (LMS), video conferencing or e-conferencing, social networking sites (Facebook, Twitter, You Tube, Flickr), webcasting and screen casting, simulations, discussion forum, PowerPoint, e-mail, webinars and Skype or chat facilities.

The Interactive White Board can be used as a replacement for the traditional white boards because of its opportunity for lecturers to interact with the students through the course materials presented on the computer as reported by Hacifazlioglu et al. (2007) in their study on use of technology by lecturers in a Turkish university. They concluded that the Interactive White Board has been acclaimed successful in reaching students with a variety of learning styles, and lecturers have

affirmed that it facilitates better students' involvement, streamlined lesson preparation and enhanced lesson materials.

A Learning Management System (LMS) can be installed by a university for lecturers to upload their courses that have been deployed with technology for students to have access to. O'Donnell et al. (2013) defined LMSs as computer applications or systems which have been specifically developed to facilitate the use of technology by lecturers or trainers when instructing students or trainees. The authors averred that LMS facilitates electronic learning through the provision of conducive online environment for lecturers to: store their learning resources, keep their students informed about course requirements, and monitor students' use and progress through the learning resources provided.

Garrote and Pettersson (2007), in their study of engineering lecturers' attitude towards LMS in University College of Boras, Sweden, reported that all the lecturers used LMS for teaching through the distribution of course materials to students. WebCT and Blackboard are LMS tools that are commonly used to develop and present course materials in many universities. Lewis et al. (2013) reported that Blackboard was frequently used for teaching by lecturers in many universities in the United States of America. This was also confirmed by Adetimirin (2016) in the study on female lecturers' use of technology at the University of Ibadan, Nigeria that 119 courses were uploaded to the LMS for teaching, signifying the use of LMS by lecturers for teaching.

Mobile technology can also be used by lecturers to teach. This is so because many students in universities in Nigeria have smartphones that can be used to access learning materials for courses they offer. Adedoja et al. (2013) deployed mobile technology for teaching and learning at the University of Ibadan, Nigeria for distance learners and the results indicated that it was used for teaching by uploading materials, quizzes and assignments for the students. The lecturers had to design the course into modules to be delivered on the mobile platform for the students, and each module had practice questions at the end, chat sessions and forum. This was to ensure that knowledge was acquired by the students through this medium, and the assessment was done using quizzes and assignments.

Adetimirin (2015) highlighted the Online Discussion Forum (ODF) as a learning tool accepted and used globally in education. It is a forum that allows communication to take place between lecturers and students, and is an effective way of engaging students outside the classroom (Balaji and Chakrabarti, 2010; Warren, 2008) and can be created on search engines such as Google and Yahoo. The lecturer acts as a facilitator, creates and moderates the discussion by frequently uploading materials for the course on the forum and allowing the students to interact with the materials and write their comments on the forum. Materials such as videos, PowerPoint slides, articles, drawings, pictures and hyperlinks can be posted on the forum by the lecturers for the students. The role of the lecturer is to prepare materials, discussion questions and topics that are related to the learning objectives and course. Andersen (2009) concluded that the Online Discussion forum can be used by lecturers for the achievement of students' higher learning which can be measured by the students' grades in a course.

Video or teleconferencing such as Skype can also be used for teaching. This allows for the lecture to be delivered to the students when the lecturer cannot be physically present. The advantage is that lectures do not have to be missed because a lecturer cannot be physically present, but it can be delivered with technology. This is done using a computer with internet connection, Skype application, webcam and voice devices (microphone and speaker) where the lecturer delivers his lecture and the students are able to see the lecturer live and allowing them to ask questions which the lecturer can answer.

Social networking media can also be used for teaching. The social media include: Facebook, LinkedIn, Twitter, Blogs, Flickr and they have been reported to facilitate collaborative learning among teachers in Nigeria (Abimbade, 2014; Adedoja and Abimbade, 2013). Another technology that can be used for teaching is Powerpoint. Powerpoint is the presentation of the topic to be delivered to students in slides that are in bullets just emphasising the salient points and visuals; audio, pictures and other illustrations could be embedded to improve the explanation of concepts. Gabriel (2008)

opined that Powerpoint has an influence on presentations, communication in and outside the classroom and on the nature of lecturing. He further explained Powerpoint as a useful communication technology tool that can be used in transferring knowledge not only in education but also in other organizations, and it can redefine the nature of the lecture from a text-oriented one to a multimedia one that provides a critical, creative and active participation from the audience.

Skills required for use of technology for teaching

Use of technology by lecturers requires skills such as ICT skills which will enhance the ability to use different and appropriate technologies. ICT skills should be possessed by lecturers to facilitate their use of technology and they include: awareness and knowledge of available ICT, how to use them for course design, preparation and delivery of lectures, and troubleshooting when there is a challenge. Hacifazlioglu et al. (2007) highlighted the following: computer literacy skills on Pc, office software and e-mail, PC/Notebook, Projection, Internet, Office Productivity Software, smart board and educational software as skills required for effective use of technology by lecturers.

ICT competence (computer and internet competence) are required for effective use of technology for teaching by lecturers. Chitiyo and Harmon (2009) reported that lecturers' computer proficiency and competence in the use of the internet were at the basic level and had little confidence in basic productivity software skills in instructional technology tasks and processes among twenty-one lecturers in the colleges of education at three universities in Zimbabwe. Hacifazlioglu et al. (2007) also carried out a study on lecturers' use of technology in a Turkish university and found that more than three quarters of the lecturers from Faculties of Art, Engineering and Science were skilful and knowledgeable in using technology for teaching. These lecturers had acquired sufficient skills and knowledge to use computer and educational technologies in their academic life and teaching.

Lecturers should know which technology is appropriate for a topic and must be competent in the use of such technologies. Hennessy et al. (2010) in an investigation on factors affecting teachers' use of ICT in classrooms in Sub-Saharan African emphasised this by reporting that there is a need for teachers to know how a particular topic or concept can be taught with technology and the most appropriate technology for it considering the varied students' learning abilities. This was also supported by Ajayi (2008) who reported that the use of ICT by lecturers in Nigerian Colleges of Education was low, and this was attributed to ICT incompetence because of lack of training for such technology. This could have been reduced if the lecturers had developed themselves personally and the institutions had provided relevant training to support use of ICT for teaching.

Institutional support for use of technology for teaching

The use of technology for teaching will likely increase the burden of the lecturers in terms of workload and this can be reduced with the provision of necessary support such as technical support, regular training and infrastructure by the university. Such infrastructure include: stable and regular internet connectivity, bandwidth capacity, technical support, and software packages for teaching. The university should also provide regular training for the lecturers to keep abreast of technology. However, technology needs of the lecturers must be considered in the design and provision of training programmes for the lecturers. This was collaborated by Ncube et al. (2014) who reported that training, institutional support, knowledge and skills will assist in building confidence in academic staff in Department of Information Science, UNISA, South Africa to use technology, but that such training programmes must consider the level of skills possessed by lecturers.

The university has a role to play in the use of technology by lecturers by providing the requisite environment, equipment and infrastructure. This was ascertained by Hacifazlioglu et al. (2007) who reported that majority of the lecturers in a Turkish university were encouraged to use technology for teaching due to the adequate support (technical and material) provided by the university. Suhail (2015) listed some factors to consider for institutional support for e-readiness of

lecturers in three universities in Kenya: bandwidth management policies, necessary technological infrastructure, access to high speed (sufficient bandwidth) and reliable and guaranteed Internet services. Others include: ICT training to lecturers and students, accessibility of technological resources and putting in place a mechanism to motivate lecturers and student.

The infrastructure in most African countries is characterised by inadequate bandwidth and irregular power supply (Ncube et al., 2014). This is buttressed by Mulwa and Kyalo (2013) who carried out a study on principal, teachers and students attitude to readiness to adopt e-learning in selected secondary schools and recommended that the government should provide necessary infrastructure such as e-learning equipment, reliable power sources and internet connectivity. Ajayi (2008) also indicated that inadequate ICT, poor internet connectivity and epileptic power supply were the major challenges faced by lecturers in Colleges of Education in Nigeria in their use of technology. Therefore, to encourage effective use of technology by lecturers, universities must provide the necessary institutional support.

E-readiness of lecturers in the use of technology for teaching

Lecturers must keep abreast of development as technology is evolving, and this requires continuous training and skill development to be current in the use of appropriate technology for teaching. O'Donnell et al. (2013) concluded that for successful integration of technology for teaching, time, resources, training and commitment of the lecturers must be considered. This is important as their roles as lecturers include a lot of workload, and the addition of using technology for teaching implies extra workload which they must be willing and ready to take up.

Lecturers may not be willing to use technology as some believe that it takes a lot of time to prepare their course as they have to search and use appropriate technology. However, this is the global trend and LIS lecturers must embrace technology for teaching as the benefits are enormous not only to them, but also to students and the university. The use of technology by the LIS lecturers is also dependent on a positive attitude towards it (Suhail, 2015). The author reported that positive attitude towards technology use enhanced the use of technology by lecturers in three Kenyan universities. It implies that the successful adoption of technology for teaching is determined by the possession of a positive attitude to technology by lecturers. This can be attained through the provision of adequate institutional support.

The findings of a study by Akaslan (2011) on 1206 academic staff from 417 programmes in 360 Higher Educational Institutes (HEIs) in Turkey revealed that the lecturers' e-readiness was sufficient, but their attitude towards use of technology for teaching must be enhanced by the institutions to facilitate increased adoption. This was earlier emphasised by Garrote and Petterson (2007) who concluded in the study of LMS by engineering lecturers in Sweden that the university needs to invest in the acquisition of resources (funds, equipment/infrastructure) to establish LMS and also build the lecturers' skills necessary for its use.

Some studies in Nigeria have reported the use of technology for teaching (Adetimirin, 2015, 2015; Adedoja et al., 2013; Ajayi, 2007; Agbonlahor, 2006; Nwankuo, 2006). This indicates that lecturers in Nigeria are using technology, but the use and the level of use by LIS lecturers are not well acclaimed by the dearth of literature. Adetimirin (2016) reported the use of technology for teaching by female lecturers in different disciplines at the University of Ibadan, Nigeria and found that technology has assisted them in their delivery of courses to the students. In another study on LIS postgraduate students' use of technology (Online discussion forum) at the University of Ibadan, Adetimirin (2015) concluded that the students were able to learn outside the classroom as the lecturers uploaded related information materials for the course on the discussion forum; so, learning was not constrained only to the classroom.

Adedoja et al. (2013) reiterated the relevance of university providing technical support and ICT skill acquisition not only for the lecturers but also for the students. This is necessary as teaching involves both the lecturer who delivers the lecture and the students who receive the lecture. Both of

them must be ICT literate to benefit from the use of technology for teaching. The authors also recommended that university should improve the capacity of the lecturers in course development and technical staff to provide a better technology adoption for teaching.

Ajayi (2007) also carried out a study on use of technology by lecturers in Colleges of Education in Nigeria and reported that these lecturers use technology, although the use is low due to inadequate training and ICT. Lecturers in universities in Nigeria have been using technology for teaching for more than ten years as reported by Agbonlahor (2006) in her study on lecturers' use of Information Technology (IT) in ten universities. The result revealed that the use of technology was highly determined by the ease of use and perceived benefit, training and level of access to IT.

The provision of necessary infrastructure in universities and training for LIS lecturers in Nigeria to be equipped with the requisite ICT skills will invariably prepare these lecturers to use technology and increase their use for teaching. Nevertheless, the lecturers must be aware of various technologies, have a positive attitude towards technology use, and consequently use them for teaching in the classroom. This will contribute to their e-readiness to use technology for teaching.

Conclusion and Recommendations

Technology use for teaching has been adopted in universities globally and specifically in Nigeria due to its enormous benefits to lecturers, students and universities, but the level of use by Library and Information Science lecturers is not well documented. Library and Information Science lecturers should, therefore, adopt technology for teaching as it has been acclaimed to improve the learning process. However, for its effective use, LIS lecturers need to be aware of different technology, their uses, have a positive attitude, possess the requisite ICT skills and have the necessary infrastructure in universities to drive technology for teaching. This will allow them to be e-ready to use technology. Therefore, for improved adoption by LIS lecturers, universities in Nigeria must provide the necessary institutional support such as adequate infrastructure (regular power supply, internet connectivity with adequate bandwidth, software application) and regular training programmes for skills acquisition. This would create awareness of current technology, enrich the method of course delivery, allow for effective learning by students and improve the web ranking of universities in Nigeria.

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