Lecturers' Job Effectiveness through the Use of E-Learning Facilities in University of Ibadan

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Abstract
The use of e-learning facilities is expected to foster lecturers' job effectiveness in higher institutions. However, observation revealed that challenges like ease of use and technical know-how persist. This study, investigated lecturers' job effectiveness through the use of e-learning facilities in the University of Ibadan. Two research questions were raised. The study adopted non-experimental design. Population comprised 926 lecturers in faculties, institutes and centres in the University of Ibadan. Fourteen faculties (48 departments), 3 institutes and 2 centres which are academic units domiciled in the University main campus were purposively selected due to proximity. Five lecturers were randomly selected from each academic unit, giving a total sample of 265 lecturers. Data was collected using Lecturers' Job Effectiveness Questionnaire (LJEQ) validated through content validity with ordinal alpha reliability of r=0.95. Analysis was carried out using frequency and unpaired t-test. Results showed that lecturers recognised that the use of e-learning facilities could enhance their job effectiveness. However, majority of them do not often use electronic board. Further, result showed that lecturers' gender use of e-learning facilities and job effectiveness in the University of Ibadan was not significant. The study, recommends that lecturers should use e-learning facilities for increased productivity in carrying out their academic work.

Keywords: *E-learning facilities, Job effectiveness, Lecturers.*

Introduction

The term Information and Communication Technology (ICT) which can also imply electronic facilities could be referred to as technologies that give access to resources and connectivity. Khan, Khan, et al (2015) conceptualises ICT as appliances like video conferencing, distance learning, satellite networks, radio, television, phones computer and hardware networks. Educational change and reforms have been envisaged to be touted by powerful tools of ICT. Information technologies are seen as tools which can support the society to deliver desirable goals through education. ICT in system of education could be panacea for transferring valuable information from the teacher to learners and make them become useful to themselves and the society. In developing nations, one could see that emerging innovations in ICTs has not been appropriately unravelled amidst the challenges of Covid-19 pandemic.

Electronic learning is learning through the use of technologies aided resources for education. E-learning is a learning process enabled through the use of internet and digital learning content tools (Mikre, 2011). It is said to involve online interaction connectivity between an instructor and learners (Asabere & Mends-Brew, 2012).According to Suryawanshia and Narkhedeb (2015), higher institutions are welcoming ICT usage for both administrative and service delivery processes in more proficient and competitive way. These days, technologies like computer-aided, online-conferencing, notebook-computer, cameras, World Wide Web (WWW) and integrated libraries have been embedded into education (Mathevula & Uwizeyimana, 2014). Among the technological advancements are networking of computer devices that provide methods of sharing knowledge locally and internationally for electronic learning (Asabere, et al., 2017). E-learning is defined as electronically enabled learning that is empowered by the use of

technological tools (Abbad, et al., 2009). The distance education concept of e-learning is occasioned through virtual lecture activities from one location to another (Gotschall, 2000). According to Liu and Wang (2009), internet as one of the communication technologies has transform distance education into e-learning. This is why e-learning is said to be characterised by the application of multimedia tools that make academics process enjoyable and interesting (Liaw, et al., 2007).

Some other e-learning enabled tools are electronic mail software, browsers, media-players, megaphones, electronic board, projector, application programs, webcams, Pads (Horton & Horton, 2003; Patil, 2014). ICT in education have flourished and influenced several training programmes and some schools have invested on it to some extent, however, there still exists slow uptake of ICT at higher level of education (Cox, et al., 1999). Crittenden (2009) reveals that ICTs tools are used to store, create, share and exchange information by teachers in technical and vocational education schools. However, e-learning facilities considered in this study includes: electronic board, computer, projector, internet and application software.

Electronic Board (E-Board) can be described as a large electronic hardware screen linked to display the contents of a computer screen and used in a classroom to show written information touched with finger or light pen. E-Board could also refer to stand-alone connectable electronic device used to communicate resources. It can be described as a large white-sensitive screen that can be operated with finger-touch or through computer and could also be connected to an overhead projector concurrently. This is why Al-Faki and Khamis (2014) state that the E-board can be used like a monitor or whiteboard screen. The old-style of the teaching-learning process seems to have shifted to an innovative way, in which technological resources are employed by lecturers in higher institutions of learning to enhance their job effectiveness.

Educational technology could be seen as the use of software and hardware in educational setting to enhance teaching and learning effectiveness, engagement and quality. Interactive electronic board was developed such that learners can see, touch, write, draw, drag, manipulate texts and reshape objects. Smart Board which many often referred to as an Electronic Interactive Board was first introduced for businesses in 1991. However, nowadays, it is often used for lectures delivery and making presentations in laboratories and classrooms. There were further collaborations between investors and Microsoft Company to innovate tools like wireless slates, interactive digital signage, interactive pen, software and multimedia cabinets (Schut, 2007). Based on designs, Interactive White Boards (IWB) are fixed to classroom wall with an overhead projector hanged to the classroom ceiling. According to analysis of the British Educational Communication and Technology Agency (2003), IWB have various positive effects on teaching, some of which include: allow lecturers to use web-based resources in classroom teaching; make presentation and explanation of various concepts easier; make notes made during lectures printable or saved for revision (Walker, 2002); provide lecturers with useful text materials animations and videos; make teaching dynamic and creative; make dissemination of materials easy; changes teacher's pedagogy and enhance professional development (Smith, 1999); enhance classroom management which can positively influence learner's behaviours and teaching effectiveness, etc.

The term computer is not only used for personal computers. A computer can be referred to as “any electronic machine that can accept data (through its sending units, such as keyboard and mouse), processes data (through its central processing unit), store and retrieve data (through its memory unit), outputs data (through its output device units, such as monitor, printer) either in form of soft copy (temporary) or hard copy (permanent)”. The role of computer as an information resource in various sectors of Nigeria's economy with little or non-human effort have been accentuated (Akinnubi, et al., 2012).It is hoped that if a large proportion of teachers are computer-literate, challenges such as computation of students results, lesson notes preparation, etc, would drastically be overcome.

Teachers' computer literacy has been defined to imply acquisition of computer operation skills for teaching, text writing, data entry and

computations (Akinnubi, et al., 2012). Ozigi (2007) found that secondary school teachers who attend trainings facilitated with the aid of computer and other communication devices were more effective at their work than those who were not. According to Lawal (2012), the notion that students who studied computer education or computer science in higher institutions were usually better-off to use computer technologies than students who did not, is a fallacy. There are various ways in which technological resources invented could be used for acquiring and disseminating knowledge and information for effective delivery. However, there is the need for computer literacy skills through trainings on the use of the technological resources as demanded by higher institutions of learning.

The education sector has greatly been impacted through information technologies resources which, undoubtedly, has strengthened teaching, learning and research activities with potentials to enrich work experiences, motivate workers and transform the school system (Yusuf, 2005). According to Jhurree (2005), the impact of computer in education has been much on programming usage. However, with the invention of microprocessor developed in early 1970s, it became affordable for schools and users to acquire and also made computer applications more prevalent in the society with increased concerns to be computer skilled for daily endeavours. There were reports that the use of ICTs in education have existed since inception nonetheless, lacks adequacy (Hepp, et al., 2004).

Movable or overhead projector is seen as input-output machine that receives descriptions generated by a computer system, duplicate and transmit same onto a large, flat white screen or wall surface. For instance, a projector could transmit a presentation to a large screen for audience in conference hall to conveniently view. Projectors can be used to produce still (slides) or videos during teaching and learning in the classrooms, for presentations at conferences, seminars, workshops and trainings for better and easy dissemination. The projector has become a popular audio-visual aid in recent pasts. Some have found it to be a very suitable teaching device while other instructors do not care to make use of it. The projector has become quite popular for those who use it in the presentation of classroom material and at workshops and conferences. Emeli, et al. (2016) found improved performance of students taught with the use of projector compared with those taught with orthodox method during metalwork lathe machine tool operation.

Internet could mean interrelated network of networks. It is useful for academics because it allows colleagues to connect with themselves around the globe and at same time provides access to interactive forum with the aid of some network resources. Internet is defined as means through which users source information across places and keep up-to-date on issues of interest (Hinson, 2006). According to Tracy (1995), internet is universal communication grid that disseminates information with the aid of computer in wide area networks. Abdel-Rahman and Hamid (2012) also describe the use of internet as a universal experience that allows operators to localise and share massive collection of data required to facilitate their duties. According to Opie (2003) the internet is seen as an electronic library that provides and displays large amount of information through various sources. The internet has no doubt, provided the means by which researchers and teachers access useful information that they need for teaching and research. As noted, stable internet connectivity and computer is necessary for electronic learning (Mercado, 2008). Internet reliability could be seen as critical hindrance to integration of e-learning into education system of developing countries.

This confirms the position by Ndume, et al., (2008) that, availability of dependable internet connection is a critical part for adaptive e-learning preparation in higher learning institutions. According to Kamba (2007), internet provides learning, teaching and research which involve interactions, either with students, teachers, the environment, or the learning material. Furthermore, as a result of the attractive features of the internet, some tertiary institutions' instructors are trying to use the Web to assist in interactive teaching, research and learning in recent years. In a study by Kamba (2007), it was found that respondents lacked access to internet in their schools and colleges. Only 40% of the respondents make use of the internet for interactive learning while 50% of the teachers only use it for interactive research and none of the teachers used it for interactive

teaching. Globalisation has made opportunities and challenges for learners in higher education to lay emphasis on information and communication technologies (ICTs) such as the internet usage (Macharia & Nyakwende, 2011). To this end, the internet-based learning increases students' satisfaction with learning as a very important mediating role (Liao & Hsieh, 2011).

Application softwares often refer to as packages or programs in which computer users use in carrying out their daily activities in relation to various disciplines. Examples of such packages include: Microsoft Words (processing and typing of documents); Microsoft Powerpoint (designing and creating slides for presentations); Microsoft Excel (spreadsheet packages, for handling large data, analysis and plotting graphs); Microsoft Access; Microsoft Publisher, Adobe Page maker, Corel draw etc. All the Microsoft packages are under a directory called Microsoft Office. The knowledge of application packages in daily activities is of necessity as there are virtually no such institutions or organisations that do not require their employees to be vast in the use of these packages to enhance their job's effectiveness. Observations have shown that academic activities among lecturers may not be effectively carried out without the understanding of basic application packages such as the ones considered in this study. The ability to use a computer is being able to use different computer programs for various purposes (Van-Braak, 2004). Therefore, computing competence is essential if higher institutions must adopt and adapt the use of e-learning facilities. Luan, et al., (2005) reveal that spreadsheets were commonly used by lecturers, especially in the management of student grades and scores. Hence, there exists significant association in frequency of software usage and being competent in such software.

Gender is considered in this study to establish if male and female lecturers differ in terms of using e-learning facilities to execute academic activities and enhance job effectiveness. For instance, Luan, et al. (2005) found that male and female lecturers are skilled in the use of word processing and e-mailing tools. The study also found that both men and women were competent with the use of presentation and spreadsheet programs which was linked with the regular presentation during lectures and conferences. Based on perceptions of e-learning, Wong and Hanafi (2007) reveal positive and equal perceptions of gender usage of information and related applications in teaching. This implies that there is no gender difference in the use of applications for teaching. However, in a study by Al-Sarrini (2010), it was pointed that gender influence on faculty members' e-learning perceptions could not be fully captured due to settings and cultural differences. In other words, the exactness of gender influence and electronic learning perceptions was not accurately examined in the study. Onwuagboke, Singh, Fook, and Onwuagboke (2014) with respect to teaching experience, found significant difference between faculty members' gender and frequency of internet usage. Thephavongsa and Quingtang (2015) found that the proficiency level in basic ICT applications usage among gender of primary and secondary school teachers differs and that male teachers are more proficient than the female teachers.

Empirical findings have shown that gender stereotypes deter women's active utilisation of ICT (Buskens & Webb, 2009; Edwina, 2005). There is also a general belief that women are lagging behind when it comes to the use of ICT (Hallberg, Kulecho, Kulecho & Okoth, 2011). For instance, male lecturers were found to use ICT facilities most as compared to their female counterparts (Mahdi & AlDera, 2013). Similarly, Tezci (2009) found significant influence of gender on the level of utilisation of ICT facilities by teachers. However, Agbatogun (2013) did not find any significant influence of gender on lecturers' use of ICT facilities. Azeta and Mc Donald (2018) found negligible gender gaps which pointed at no significant gender differences in hardware and software use. Yushau and Nannim (2020) found that there was no significant difference between university lecturer's gender and the utilisation of ICT facilities for teaching purposes.

Job effectiveness is very important in maintaining human resources and life of any institution. In academia, job effectiveness is among the cornerstones for a healthier university system. Teacher job effectiveness is described as capability of the teacher to accomplish educational objectives in schools (Akinnubi, et al., 2012). Lecturers' job effectiveness refers to the dedicated conduct of

lecturers in carrying out the official duties diligently (Onwuachu, 2007). A highly effective lecturer may be a researcher; a receiver, creator and a distributor of knowledge (Modebelu & Kalu-Uche, 2013).Lecturers are expected to engage in activities aimed at acquisition of new knowledge and skills for effective job delivery. In the university system, lecturers' professional development is encouraged through re-training programmes, mentorship, seminars, research publications, conferences, symposiums, inaugural lectures, communication and technology gadget utilisation and so on (Udoh-Uwah and Etim, 2018).

The use of Information and Communication Technology gadgets may enhance professional growth speedily. Lecturers who use the computer system to work may gain quicker access to study materials through the internet. The use of the internet to access journals, periodicals, magazines, inaugural lectures, conference papers, and community services and so on may help a lecturer to grow fast on the job. Online courses are easily accessible through the use of computer related devices. More so, lecturers are seen as great asset and one of the main actors in a university system. They are responsible to teach and impact students with skills and knowledge for growth and development, carry out research to inform and uncover solutions to problems, do presentations to enlighten and train the societies as regard their discoveries through research and publish their findings for large dissemination and consumption. According to Udoh-Uwah and Etim (2018), the efficiency of the university system is greatly anchored on the competence of the academic staff which is dependent on their professional development. Moreover, Akpan (2014) enumerated the importance of ICT in enhancing the quality of teaching and learning and submit that it has become an imperative means to enhance job effectiveness of lecturers. Akpan (2008) stated that ICT could improve the quality of researches and publications in universities through the use of information and quality materials from the internet and can also facilitate record-keeping by teachers. This means that lecturers who make effective use of ICT gadget could improve on their job effectiveness.

In spite of the constant innovative approaches adopted by teachers in western world, traditional approaches to teaching and assessments in Nigeria tertiary institutions have constantly been practiced. Most institutions are not able to fully utilize e-learning or get full advantages of it. This failure has hindered most teachers in using innovative teaching methodologies in delivering their lectures, and undertake rigorous research works.

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Previous studies on lecturers' job effectiveness and e-learning facilities have been focused on ICT as means to improve the quality of researches and publications in universities, components of emotional intelligence as means of predicting teaching effectiveness, effective utilisation of ICT for sustainable manpower development, availability and utilisation of information communication and technology in the effective management of universities. Despite the constant innovative styles adopted by teachers in western world, most institutions have not been able to fully utilise e-learning or get full advantages of it. Some lecturers in higher institutions may have not been effective in their job performance due to lack proficiency in the use of ICT gadgets. This failure has hindered most lecturers in using e-learning facilities tools in carrying out their academic activities. Also, preliminary observation by the

researchers shows that most of the lecturers in higher institutions seem to find it difficult to adapt to the use of e-learning facilities such as electronic board, computer, projector, internet and basic application software which could improve their productivity and job effectiveness especially, given the new-normal in teaching and learning occasioned by Covid 19 pandemic. However, in this study, job effectiveness among lecturers in the University of Ibadan is to establish if the use of e-learning facilities could improve their job effectiveness in carrying out academic activities of teaching, researching, doing presentations, publishing as well as other services they provide within and outside the university and also find out if there are disparity in lecturer's gender use of these facilities. Therefore, this study, investigated lecturers' job effectiveness as well as gender difference through the use of e-learning facilities in carrying out academic activities in the University of Ibadan. Specifically, this study provides responses to stated research questions.

1. How often do lecturers use e-learning facilities (Electronic board, computer, projector, the internet and application softwares) as means of enhancing their job effectiveness in the University of Ibadan?
2. Is there any significant difference between lecturers' gender and job effectiveness through use of e-learning facilities in the University of Ibadan?

Methodology

Design

This study adopted non-experimental design of survey type because the variables of the study had already manifested and no attempt was made to manipulate them.

Population and sample

Population comprised 926 lecturers in faculties, institutes and centres in the University of Ibadan. Fourteen faculties (48 departments), 3 institutes and 2 centres which are academic units domiciled in the university's main campus were purposively selected due to proximity. Five lecturers were randomly selected from each academic unit (departments, institutes and centres), giving a total of 265 lecturers used as sample for this study.

Instrumentation

Lecturers' Job Effectiveness Questionnaire (LJEQ) was developed to elicit information from respondents. The questionnaire consisted two sections. Section A sought for respondents' background information such as faculty/institute/centre, department, gender and designation. Section B elicited information on lecturers' job effectiveness through the use of e-learning facilities for academic work. The questionnaire contains twenty-three (23) items with response format of Not Very Like Me (NVLM) as 1, Not Like Me (NLM) as 2, Much Like Me (MLM) as 3 and Very Much Like Me (VMLM) as 4. Content validity was established and ordinal alpha reliability yielded 0.95 for internal consistency.

Analysis

The data collected were analysed using frequency count and unpaired t-test.

Results

Research Question 1: How often do lecturers use e-learning facilities (Electronic board, computer, projector, the internet and application software) as means of enhancing their job effectiveness in the University of Ibadan?

Table 1: Lecturers' Use of E-learning Facilities as Means of Enhancing Job Effectiveness in the University of Ibadan

S/N	Items	NLM	MLM
	Use of Electronic Board:		
1	Makes my teaching interactive	106 (40.0)	159 (60.0)
2	In class delays my teaching	219 (82.6)	46 (17.4)
3	Makes my teaching interesting	262 (98.9)	3 (1.1)
4	Enhances my job during presentations	95 (35.8)	170 (64.2)
	Use of Computer:		
5	Makes my job efficient	28 (10.6)	237 (89.4)
6	Makes my research work easy	11 (4.1)	254 (95.9)
7	Facilitates publications of my academic papers	11 (4.1)	254 (95.9)
8	Makes paper presentations at conferences efficient	13 (5.0)	252 (95.0)
9	Makes my teaching productive	17 (6.4)	248 (93.6)
	Use of Internet:		
10	Gives me opportunities to source materials to do my research work	17 (6.4)	248 (93.6)
11	Enhances assessment of student's assignments	47 (17.7)	218 (82.3)
12	Make my paper publications online easy	28 (10.6)	237 (89.4)
13	Make me comfortable using Google classroom/Edmodo as a means of teaching	136 (51.4)	129 (48.6)
14	Enhances my academic work	11 (4.1)	254 (95.9)
	Use of Projector:		
15	Makes my teaching efficient	25 (9.5)	240 (90.5)
16	For presentations makes my communication easy	22 (8.3)	243 (91.7)
17	In classroom makes my students learn faster	31 (11.7)	235 (88.3)
18	Facilitates my interaction with participants during workshops	20 (7.5)	245 (92.5)
	Application Software:		
19	Use of MSword makes my documents readable for publications	17 (6.4)	248 (93.6)
20	Use of Powerpoint makes my presentations during teaching efficient	21 (7.9)	244 (92.1)
21	Application software makes my aca demic work efficient	24 (9.0)	241 (91.0)
22	Use of application software enhances my research	26 (9.8)	239 (90.2)
23	Use of application software enhances my publications	15 (5.7)	250 (94.3)

NLM = Not like me, MLM = Much like me; N=265; Percentages in parenthesis

Table 1 shows the level of lecturers' use of e-learning facilities as regards their job effectiveness. From our observations, it was revealed that most lecturers in the sampled academic units of the University of Ibadan considered the use of e-learning facilities for carrying out their academic activities as means of enhancing their job effectiveness. However, 82.6% of the lecturers indicated that the use of electronic board delays their teaching (Item 2) and 98.9% of them claimed that the use of electronic board does not make their teaching interesting (Item 3).

Research Question 2: Is there any significant difference between lecturers' gender and job effectiveness through use of e-learning facilities in the University of Ibadan?

Table 2: T-test Showing Significant Difference Between Lecturers' Gender and Job Effectiveness

Gender	N	Mean	Std. Dev.	DF	t-value	Sig.	Remark
Female	50	74.280	11.673	263	-0.53	0.57	Not significant
Male	215	73.358	11.043				

Dependent: JE; NS at p>0.05; N = 265

Table 2 presents the mean and significant difference between lecturers' gender and job effectiveness through use of e-learning facilities for carrying out academic activities in the University of Ibadan. Result shows that the mean of male lecturers (M=73.36; SD=11.04) is less compared to the mean of female lecturers (M=74.28) through the use of e-learning facilities as ways of enhancing job effectiveness. However, the observed difference in the means was not significant ($t_{(263)}$=-0.53; p=0.57). It can be concluded that lecturers' gender through use of e-learning facilities does not determine the effectiveness of academic work in the University of Ibadan.

Discussion of findings

Findings on the level of lecturer's use of e-learning facilities (Electronic board, computer, projector, the internet and application software) as regards their job effectiveness in the University of Ibadanrevealed that computer, the internet facility, application softwares: MSword, Powerpoint, projector, electronic board and Google classroom/Edmodo makes lecturer's academic work effective. This could be owing to the fact that computer and other ICT device usage is expected to be used for making presentation as one of the essential processes for employment as a lecturer in higher institutions. The finding of this study is consistent with the finding of Aina (2013a), that for an effective teacher, it is essential to adopt the use of different technologies in the classroom. The finding of this study also agreed with authors such as (Akinnubi, et al., 2012; Ogundele & Etejere, 2013; Emeli, et al.,, 2016). Although most of the sampled lecturers still find the use of electronic board and google classroom/Edmodo not convenient as means of enhancing their job effectiveness. This corroborates the finding of Marikar, et al., (2017) that more than 50% of lecturers avoid the use of new technologies. This, however, does not imply that these e-learning facilities do not enhance job effectiveness but that some lecturers do not find these facilities easy to use based on their level of proficiency in the use of such facilities.

Findings on significant difference between lecturers' gender and job effectiveness through the use of e-learning facilities for carrying out academic work in the University of Ibadan revealed that lecturers' gender through use of e-

learning facilities and job effectiveness of academic work in the University of Ibadan was not significant. This finding corroborated Wong and Hanafi (2007) which found insignificant difference between gender usage of information and related applications for teaching. Finding of this study was also consistent with Agbatogun (2013) which did not find any significant influence of gender on lecturers' use of ICT facilities. In like manner, finding of this study agreed with that of Azeta and McDonald (2018) which found negligible gender gaps and shows no significant gender differences in hardware and software use. Similarly, finding of this study corroborated that of Yushau and Nannim (2020) which found that there was no significant difference between university lecturer's gender and the utilisation of ICT facilities for teaching purposes, This could be attributed to several ICT skills that lecturers are being exposed to in the use of ICT facilities in the University of Ibadan. However, the finding of this study, disagreed with that of Onwuagboke, Singh, Fook, and Onwuagboke (2014) which revealed a significant difference between gender of faculty members and frequency of the internet usage based on teaching experience in Nigeria's Colleges of Education in the Southeast. Similarly, this finding disagreed with that of Thephavongsa and Quingtang (2015) which revealed that the proficiency level among teachers of primary and secondary schools on basic ICT applications differ and that male teachers are more proficient through the use of ICT than female teachers. Also, the finding of this study was not in line with that of Mahdi and AlDera (2013) that male lecturers were found to use ICT facilities more as compared to their female counterparts. Similarly, the finding of this study was not consistent with that of Tezci (2009) which found significant influence of gender on the level of utilisation of ICT facilities by teachers. Moreover, Al-Sarrini (2010) pointed out that gender differences do not fully explain staff perceptions of e-learning. These discrepancies could be attributed to the fact that the research areas are different and that the types of e-learning facilities considered could equally differ.

Implication for Higher Institutions

The findings of this study have established the fact that lecturers could be more effectiveness in carrying out their academic work through the use of e-learning facilities. Thefindings of this study have also shown that higher institutions management could tap the opportunities inherent in the use of e-learning facilities for effective productivity of their staff and create support on e-learning facilities like electronic board and the internet which were provided but not adequately utilised by lecturers which could enhance their job effectiveness.

Conclusion

The use of e-learning facilities for executing academic activities by lecturers as a means of enhancing job effectiveness in the University of Ibadan was established. It was revealed that, more often, e-learning facilities were used by lecturers in carrying out academic responsibilities and that there was no gender difference through the use of these facilities in the University of Ibadan although there was low usage of electronic board among the lecturers. Therefore, it could be concluded, that e-learning facilities such as electronic board, computer, internet, projector and application software are necessary for effective academic activities such as teaching, research, presentation and publication as well as other activities.

Recommendations

This study, recommends that:

- Lecturers should efficiently utilise e-learning facilities for maximum productivity in carrying out their academic work;
- Higher institutions management should make provisions for e-learning facilities as well as capacity building in the use of the facilities in higher institutions;
- Government should provide funds and at the same time, monitor the institutions to ensure adequate use and maintenance of the facilities.

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