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An Appraisal of the Functionality, Adequacy and Use of ICT Tools to Enhance Web-Based Learning in Benue State University, Makurdi

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ABSTRACT
The study appraised the functionality, adequacy and use of ICT tools to enhance web-based learning in Benue State University, Makurdi. The population of the study included undergraduate students in the Benue State University, Makurdi. Simple random sampling was used in selecting the respondents. Descriptive survey design was adopted for the study, with a total population of 18, 729 students. A sample size of 375 students was used. The instrument for data collection was questionnaire. In analyzing the data, frequency table and simple percentage were used. The findings, revealed that, ICT tools in the Benue State university were functional but grossly adequate. The study equally brought to bear that the use of ICT tools enhances WBL in minimal ways such as accessing the Internet, doing assignments via web platforms, and browsing web-based materials. Poor Internet connectivity and inadequate ICT tools posed a major challenge to engaging ICTs in web-based learning. Based on the findings, it was recommended that the services of more maintenance engineers should be engaged to ensure constant functionality of ICT tools by checking, repairing and servicing them. Provisions should be made by the university management for yearly deployment of ICT tools. Web experts should be invited during orientation exercises to expose students to the functionalities of web-based learning and how they can maximally benefit from it, and investment in sound internet connectivity should be prioritized by both government and the university management.
Keywords: Adequacy, Functionality, Web-based Learning, Benue State University, ICT tools, Use

INTRODUCTION
The phenomenal diffusion of Information and Communication Technologies (ICTs) has created pervasive influence on many sectors around the world. The growing evidence of such influence is seen in the way people are increasingly considering ways of living, working, and interacting that are not facilitated by ICT tools as unwelcoming, outlandish and outmoded. In reaction, nations and organizations have bowed to this trend by adopting digital tools for operations in order to harvest efficiency and effectiveness which was unattainable with manual tools. To that effect, Basri, Alandejani and Almadani (2018) admitted that ICTs has become an important source of innovation and improvement of efficiency for many sectors across the globe. In the education sector, notably, the increasing visibility and impact of ICTs is no longer in the realm of uncertainty, and Nigeria is not excepted from this global experience. ICT tools have grown into potent enabling vehicles for enhancing quality of education in Nigeria by affording improved access to plethora of repositories of information and knowledge for enhanced learning.

ICT is an omnibus term that encompasses Information Technology (IT) and Communication Technology (CT), hence Information and Communication Technology. Providing a universally accepted meaning of ICT is quite challenging because the definition keeps changing to accommodate new innovations, dimensions and

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improvements in the ICT world. Nonetheless, ICT consists of diverse but cohesive set of computer-associated technologies used in handling information from its generation to ultimate dissemination. In another view, Kaware and Sain (2015) perceived ICT as the manipulation and communication of information by using electronic resources and tools, such as computers, Internet, and broadcasting technologies. It covers digital infrastructures that are capable of storing, manipulating, retrieving, transmitting and at the same time, receiving information (text, sound, motion, etc.) conveyed electronically in digital form. Among such digital infrastructures is the Internet and web technologies, which are key in enabling web-based learning.

Web-based learning is one of the monumental educational inventions motivated by expanding wide range of technologically-empowered channels of interaction and instruction that afford students an additional and innovative learning atmosphere contrasted with the traditional learning style. In a simplest form, WBL is associated with multimedia learning materials delivered on World Wide Web and accessed through web browser in order to improve knowledge and performance. In other words, Anunobi *et al.,* (2017) perceived web-based learning as a "hypermedia-based instructional program which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported". On one hand, the twofold definitions succeeded in lime lighting the centrality of Internet and web technologies in enhancing access to information resources for flexible, convenient and effective learning. On the hand, the revelation of the multimedia dimension of WBL becomes its selling point, since the combination of audio, sound, music, animation, text, video, and images in content delivery makes learning experience more real, motivating and engaging.

In view of the above, it is no longer an issue of debate that the influx of Internet and web technologies have tremendously revolutionized the landscape of learning such that significant transition is noticed from analogue method that is anchored on chalk and talk, pen and paper, classroom and class teacher, towards new approach of learning that is no longer confined in the four walls of a traditional classroom, as knowledge can be acquired on the borderless Internet at anytime, anywhere and by anybody without the limitation of geographical space. This underscores the fact that ICT tools have massively revitalized and reinforced learning by bulldozing the walls of lecture halls known chiefly for verbal expression method and creating alternative channel of learning via the web. In a quick response, Oulmaati, Ezzahri and Samadi (2017) maintained that students' interest is therefore stimulated to adopt a newer mode of acquiring knowledge for the sake of improving their cognitive capacities and developing autonomous learning.

Nam and Smith-Jackson (2007) asserted that WBL provides students with a new and wide range of learning experience such as accessing information at any time and place, online presentation of information, interactive task-based activities and effective dissemination of information. In the same line, Zahiah (2009) submitted that WBL method allows individuals to follow learning sessions openly and freely without adhering

timetables or attending classes and at their own paces. His disclosure further accentuates the flexibility and accommodating capabilities of WBL which made it good news especially in attending to students' diverse learning styles that face-to-face classroom instruction cannot address. Also, Anunobi *et al.,* (2016) added that owing to the networking feature of the WBL, it can facilitate enrollment into online courses, provide syllabus of instruction, posting and submitting assignments, interacting with instructors and co-students, collaborating on assignments, and building learning communities.

Considering the ubiquitous impact of WBL, it is progressively gaining popularity in learning communities among developing nations, and students in Nigerian universities are already joining the global race in availing themselves of the tremendous opportunities that accompanied it. On this account, universities are confronted with an increasing pressure and need to adopt digital tools that can accelerate maximal and beneficial participation of students in WBL. In corroboration to that, Siddiquah (2017) posits that advanced ICT assisted instruction such as web-based learning require proper infrastructures including substantial computers and Internet resources. This follows that supporting web-based learning involves provision of functional modern technological facilities in appreciable quantity, and ensuring sustained use of these tools to ensure effective learning by students via web platforms. It is more so because universities are missioned to make optimum contribution to national development through high level manpower training, and to promote scholarship (NPE, 2004). To achieve this lofty mandate entails implementation of educational innovations such as WBL which is capable of reforming the face of learning in universities in Nigeria.

STATEMENT OF THE PROBLEM

Web-based learning is ever more becoming a global trend among universities. This could be attributed to the transformation it has brought in decentralizing learning, by ending the monopoly of lecture halls as primary learning platform and creating alternative channels of instruction through the World Wide Web (WWW). Students are now adopting their suitable learning styles to learn at their own convenience, pace and comfort without being pressured, pressed and punished. This innovation is made possible with the influence of Internet and other ICT-related tools, which represent modern time vehicles that are being used to harness WBL. It then follows that in order to benefit from the full potentials of WBL, absorption of requisite ICT tools into Nigerian university campuses cannot be compromised, seeing that WBL does not thrive in isolation of those digital infrastructures. In line with this, growing body of researches (Shidi, 2011; Tor, 2014; Shidi, *et al.,* 2015) reported the presence of ICT tools in Benue State University. However, there is no particular research embarked upon to uncover how the available ICT tools are capable of enabling students to exploit web-based learning to augment classroom instructions, hence the need to appraise the functionality, adequacy and use of ICT tools to enhance web-based learning in Benue State University, Makurdi.

RESEARCH QUESTIONS

1. What types of ICT tools available in Benue State University are functional?

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2. Which types of ICT tools available in Benue State University are adequate?
3. What ways do the use of ICT tools in Benue State University enhance web-based learning?
4. What challenges do students encounter in using ICT tools in Benue State University to enhance web-based learning?

LITERATURE REVIEW

ICT tools

Irrespective of the streams of definitions, Qutab, Bhatt and Ullah (2014) defined ICT tools as "hardware and software usability for information transportation and conducting communications linked by a vast array of technological protocols". From Qutab's opinion, ICT is not a standalone technology; it involves combination of wide range of technologies that harmoniously function for the purpose of information transfer and communication. On the other hand, Kpolovie and Awusaku (2016) looked at ICT as computer-centered tools adopted by individuals to meet the information processing needs of an organization. More expansively, Fagbe, Amanze and Oladipo (2015) described ICT is a broad-based term comprising the gathering (acquisition), organization (packaging), storage and retrieval (dissemination) of information that can be in textual or numerical (books, documents), vocal and pictorial forms (audio–visual) or a combination of all the above (multimedia), using a combination of computer and telecommunications devices. The authors extended the understanding of ICT tools from just technological mark-up to various formats into which information is translated for delivery to end users. This indicates that access and productive participation in WBL can only be enabled by ICT tools. Yusuf, Afolabi and Loto (2013) maintained that ICT tools are an indispensable part of the contemporary world. The emergence of ICT revolution has dramatically changed the way people think, work and communicate in the 21st century. Waghmare and Salved (2014) responded that ICT tools have transformed the higher education scenario. It has tremendously broadened the opportunities for people to acquire information, interact, network, address issues of common concern, generate income and participate in society (Oladipo & Akinwunmi, 2015). As a result, these tools have exploded in popularity and use in recent times. They are now tagged important tools for study, teaching and research in any academic institutions. Universities are therefore deploying ICT tools to facilitate access to information because students largely depend on them for effective learning. Such ICT tools include: desktops, laptops, scanners, digital cameras, projector, Wireless, Local Area Network, modem, iPod, iPad, tablets, scanner, web boards and so on.

Functionality of ICT Tools

Basically, ICT tools are said to be functional when they are in a working condition such that they can be accessed and operated by users to achieve practical purposes in good time. In a real sense, ICT tools are not to be considered available except they are in a functioning condition, implying that tools that are physically present but are wanting in serving the intended purpose for procurement cannot be considered functional. This suggests that non-functionality of ICT tools goes beyond malfunctions in the facility, to failure to perform its designated and required functions upon demand. Premised on this

understanding, functionality of ICT tools in this context is not limited to provision only, it also involves operability and disposability of the tools to students. It is on this strength that Bekteshi (2015) maintained that the functionality of ICT tools is considerably contributing in the application of innovations in universities of which is web-based learning. In this light, McLoughlin and Lee (2008) credited student-centered learning to functional ICT tools. This is evidenced in the accelerated interest among students to use ICT tools to learn independently via web platforms. In Nigeria, Mimgba (2011) discovered that most ICT tools were functional in the four studied Federal Universities in the Eastern part of Nigeria, since out of the 57 ICT items listed, only 4 items were not functional. Similarly, Uduak, Ukpanah and Ebong (2016) discovered computers, printers, overhead projectors, uninterrupted power supply (UPS), digital cameras, scanners, server, and Internet access as the most functional ICT facilities in the university of Uyo, Nigeria. However, Usoro *et al.,* (2012) lamented that key facilities that can support WBL in universities are not always functional. To confirm this, Nuraddeen (2015) reported limited number of functional computers and computer laboratories in the university that formed his study. By implication, the functionality of ICT tools holds high promise for the thriving of web-based learning while non-functionality of these tools does a lot of harm to students learning process, especially in this modern era.

Adequacy of ICT Tools

In a simplest form, adequacy involves sufficient quantity and quality of resources for actualizing a particular purpose. Longman (2000) perceived adequacy as a situation in which there is enough resources for a particular purpose. Based on the two definitions, adequacy of ICT tools is not only measured in terms of the number of facilities available but also in terms of their satisfactory working condition. According to Ojoawo (1990) adequate facilities and equipments form a strategic factor in the functioning of every organization, universities inclusive. He furthered that adequacy of facilities influence efficiency and high productivity in teaching and learning. This suggests that productive and smooth learning via the web requires adequate ICT tools. It is becoming more necessary now that students' population in universities is increasing year after year, and the intense need of students to exploit more innovative learning atmosphere keeps skyrocketing. Mapaderum (2002) attributed effective learning by students to adequacy of facilities, including ICT. In their study, Atsumbe *et al.,* (2012) discovered inadequate e-learning infrastructures in the studied university. Similarly, Akindoju *et al.,* (2014) reported inadequacy of ICT in tertiary institutions. Nuraddeen (2015) found out that ICT resources are wanting in universities and very inadequate for students to use. As a result, Maduewesi (2010) traced poor academic performance to inadequate facilities in learning environments. With this, web-based learning which is supposed to be the birthright of every student may be exploited by few privileged students, thereby denying a chunk of others the opportunity of building themselves up. The end result is poor academic performance, leading to production of half-cooked graduates that cannot compete with their contemporaries outside the shores of Nigeria.

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Use of ICT Tools

Use of ICT tools involves operating or manipulating computer-associated devices to access, utilize and share information. Selwyn (2008) observed that ICT use is almost certainly an integral element of thriving in the modern society. It is so because ICT use is poised to enhance well-being, principally when employed to actualize important or meaningful goals (Sims *et al.,* 2017). It therefore means that learning goals cannot be satisfactorily actualized in the 21st century except with the use of ICT tools. In agreement to this, students attested that the use of ICT supports their learning (Siddiquah & Salim, 2017). In the same line of discoveries, Onyia (2013), Osuchukwu, Obuezie and Ogwuche (2017) found out that university students use ICT facilities to improve their studies. Oulmaati, Ezzahri and Samadi (2017) revealed that nearly two-thirds of the students studied use ICT tools to always search for information on Web sites. Hamzah, Ariffin and Hamid (2017) attributed that to online discussion forums in web-based learning that can be used to discuss assigned tasks. However, Umunadi (2011) and Nuraddeen (2015) decried improper or non-use of ICT tools by students in universities. Stressing the benefits of using ICT tools, Caluza *et al.,* (2017) noted that one of the forces generating attention to use of ICT tools is the increasing need to achieve lifelong learning. Innovations driven by ICT such as web-based learning helps in facilitating lifelong learning, by making learning occur anytime and anywhere outside the vicinity of a physical classroom. Mereku *et al.,* (2009) quickly observed that students are equipped with skills to search for information, resulting to them gaining more knowledge of some of the topical issues they study in many subjects. As a result, they confidently give inputs during class discussions and have better understanding of abstract ideas and concepts. This proposes that productive use of ICT helps students in building their cognitive capacities, and encourage independent learning. ICT tool use helps students to discover learning topics, solve problems, and provide solutions to problems in the learning process (Brush, Glazewski & Hew, 2008). In another view, Mbengo (2014) added that ICT use brings greater access to knowledge, and improve archival capability of knowledge.

Web-based Learning and Nigerian Universities

While some use web-based learning in the context of online self-study, others perceive it as pieces of content packaged with the aid of technical tools. Relan and Gillani (1997) perceived WBL as a cognitive learning strategy application in a constructive and collaborative learning environment using web facilities. Khan (1999) understood WBL as learning program based on hypermedia that uses characteristics and sources from the web to generate a meaningful and supportive learning environment. Za¨ıane (2001) defined WBL as learning environment in which Internet technology become the primary becomes medium for delivering the teaching and learning courses quickly. Tsai and Machado (2019) associated WBL with learning materials delivered in a Web browser, including when the materials are packaged on CD-ROM or other media. The directly above definitions highlighted the reality that the development of Internet and the World Wide Web (WWW) in learning environment have initiated active learning among students and enable them to acquire learning materials toward improving knowledge and performance.

Web-based learning is often used in literatures interchangeably with e-learning and online learning. Even as they are widely confused as interchangeable terms, there still exist a subtle but substantial difference between WBL and the rest. Ezenwafor and Soneye (2018) noted WBL as a subset of e-learning. Za¨ıane (2001) considered WBL as one of the distance learning strategies. Tsai and Machado (2019) explained that e-learning involves activities that do not require learning materials to be delivered by computer, but computer and networks must be involved in this type of learning. While online learning is associated with readily available learning materials in a computer environment, which network use is not necessarily required to access them. Therefore, the core distinguishing feature of WBL from other types of learning, is web-based learning contents are delivered in web format and are typically retrieve from a website. It has to do primarily with contents in a web browser and not just activities that involve computer and networks without learning materials being delivered by computers. Tsai and Machado (2019) pointed that the discriminating feature of each of them must be the primary characteristic of the learning activity. The authors added that intensive use of the feature is required, since incidental or occasional use of a characteristic feature is not enough to qualify for a certain type of learning.

According to Khan (1997) WBL possess main and additional characteristics. The main attributes include interactivity, allowing online search without distance and time limitation, comprising multimedia elements, and can be accessed globally by students. The additional attributes include online assessment, cost-saving, ease of use and others. Still on features, Baharuddin (2001) echoed that learning through the website should produce genuine learning context, involve solving real problems, include initiative to learn independently in a skill, consist active discussion between students and teachers, ensure collaborative and cooperative learning, and enable learning assessment strategies to evaluate the actual skill. Lynch and Lynch (2017) observed that WBL has seven important functionaries: discussion board and chat rooms, real time announcements, automated quizzes, posting of text, html, spreadsheets, videos, PowerPoint, audio files, real time grade book, external links, and emails to individuals. All these functionalities make WBL a hotcake amidst students in this Internet age. Quadric (2014) observed that WBL involves learning at all levels, both formal and non-formal, that uses information network whether wholly or partially, for course delivery, interaction and/or facilitation. Generally, Olaniyan (n.d) observed that many universities in Nigeria are yet to enjoy the benefits of web-based educational system. Adeola, Adewale and Alese (2013) revealed that the Nigeria Open University is the closest to web-based learning in that the institution combines traditional learning method with web-based instruction materials. Edewor, Imhonopi and Urim (2014) reported the presence of e-conferencing service in covenant University. Adeyinka, Bashorun and Adu (2012) discovered that the adoption of web portals in the University of Ilorin has enabled students to learn through the electronic format and share information. Adibi and Foluke (2019) bared that a larger number of students in university of Ibadan are already familiar with web 2.0 learning tools and are using them for educational purposes. However, Omo-EHu (2001) in Okereke (2005) echoed that in developed countries, web functionalities have been used in the teaching and

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learning process for several years. In support, Ubulom and Ogwunte (2017) reminded that most tertiary institutions in developed countries have gone far with WBL in form of online lectures and other educational activities.

Challenges of using ICT tools to enhance web-based learning

According to Brown (2002) the major problems challenging the use of ICT tools in enhancing WBL is ease of finding and understanding technology, and individual user characteristics such as self-efficacy and computer anxiety. In their study, Anene, Imam and Odumuh (2014) found ICT deficiencies as a major challenge in exploiting ICTs. Chiaha, Eze and Ezeudu (2013) unearthed in their study that irregular electric power supply and poor network connection resulted to majority of the students only accessing email accounts and missing out in several other tasks. Fagbe, Amanze and Oladipo (2015) reported poor attitude toward change in technology as a challenge. Poor attitude to technology actually slows down every quest for acquiring new skills and applying them to web learning. Poor maintenance culture has also constituted a great challenge in using ICT by students in universities (Fagbe, Amanze & Oladipo, 2015; Ezeugwu *et al.* 2016). Improper maintenance of ICT facilities hinders their durability and render non-functional facilities that would have been used to support web-based learning. Absence of enabling environment, including highly regulated telecommunication industry, unsatisfactory performance of Internet service providers keeps students from using ICT tools to learn (Drummond, Sheperis and Jones, 2016). Generally, Ubulom and Ogwunte (2017) submitted that the integration of web based instructional facilities in Nigerian institutions has witnessed slow growth.

RESEARCH METHODOLOGY

Research Design

Descriptive survey design was adopted for the study. Survey research design is best applicable to phenomena that is investigated through garnering information from the opinions, believes and attitudes of the respondents. The design is relevant to this study because it involved sampling the opinions of students on the functionality, adequacy and use of ICT tools to enhance web-based learning in Benue State University, Makurdi.

Population of the Study

The population of this study constituted all the regular undergraduate students in Benue State University, Makurdi, which amounted to 18, 729 students (BSU Brief History, 2019). Simple random sampling technique was employed to select the sample. The sample size for a population that falls within the range of 1800-1899 according to Krejcie and Morgan (1970) table of determining sample size is 317. Therefore, the sample size for the total population of 18, 729 students is 375 undergraduate students.

Research Instrument

Questionnaire was selected as the instrument for data collection. The questionnaire contained four sections (A-D). Section A consisted of nineteen (19) items on the functionality of ICT tools in Benue State University. Section B consisted of nineteen (19)

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items on the adequacy of ICT tools in Benue State University. Section C contained nine (9) statements on the ways ICT tools enhance web-based learning. While Section D consisted of seven (7) items on the challenges of using ICT tools in enhancing web-based learning.

Validity and Reliability of the Instrument

In order to ensure that the instrument supplied the required data for this study, the instrument was exposed to content validation. An expert scrutinized and modified each question to ensure that it is an accurate measure of the desired content. While for reliability of the instrument, the instrument was tried on ten (10) students in Ahmadu Bello University, Zaria, and the Cronbach alpha reliability test was used to test the internal consistency of the instrument, using Statistical Package for the Social Sciences (SPSS). A reliability level of 0.799 was obtained which guaranteed the reliability of the instrument.

Procedure for Data Analysis

The data collected from the field via questionnaires was analyzed using descriptive analysis in form of frequency distribution and simple percentage. The bench mark of 50% was used for decision. Any item that ranked from 50% and above was regarded as functional/adequate/accepted; while any one from 49% and below was regarded as not functional/not adequate/rejected.

PRESENTATION OF RESULTS

Table 1: Functionality of ICT tools in Benue State University

S/N	ICT Tools	Frequency (F)	Percentage (%)	Remark
1	Desktop	247	77	Functional
2	Wi-fi (Wireless)	225	71	Functional
3	Photocopier	222	70	Functional
4	Electronic mail	222	70	Functional
5	Printer	210	66	Functional
6	CCTV	192	61	Functional
7	Laptop	186	58	Functional
8	Local Area Network	174	54	Functional
9	Scanner	171	53	Functional
10	Storage disks	162	51	Functional
11	Modem	162	51	Functional
12	Digital Cameras	135	42	Not Functional
13	Speakers	126	40	Not Functional
14	Data Projector	120	38	Not Functional
15	Digital Whiteboard	117	37	Not Functional
16	Camcorders	111	35	Not Functional
17	Tablets	111	35	Not Functional
18	DVD/MP3 Player	84	26	Not Functional
19	Router	84	26	Not Functional

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Table 1 shows the responses of students on functionality of ICT tools in BSUM in descending order. Based on the 50% benchmark, items ranging from 1 to 12 were considered functional while items spanning from 12 to 19 were regarded as not functional. It can therefore be said that majority of the ICT tools available in the university under study are functional.

Table 2: Adequacy of ICT tools in Benue State University N = 317

S/N	ICT Tools	Frequency (F)	Percentage (%)	Remark
1	Desktop	210	66	Adequate
2	Wi-fi (Wireless)	210	66	Adequate
3	Electronic Mail	198	62	Adequate
4	Photocopier	189	60	Adequate
5	Laptop	159	50	Adequate
6	Printer	186	59	Adequate
7	Storage disks	177	56	Adequate
8	CCTV	156	49	Not Adequate
9	Modem	150	47	Not Adequate
10	Scanner	147	46	Not Adequate
11	Local Area Network	138	43	Not Adequate
12	Digital Cameras	141	44	Not Adequate
13	Speakers	111	35	Not Adequate
14	Tablets	102	32	Not Adequate
15	Digital Whiteboard	96	30	Not Adequate
16	Router	96	30	Not Adequate
17	Camcorders	87	27	Not Adequate
18	DVD/MP3 Player	69	22	Not Adequate
19	Data Projector	57	18	Not Adequate

Table 2 clearly displays the responses of students on the adequacy of ICT tools in BSUM in descending order. Using the 50% standard, tools that extend from items 1 to 7 were judged adequate; whereas, questionnaire items beginning from 8 to 19 were measured not adequate. It can therefore be deduced that majority of the ICT tools available in the university under investigation are not adequate.

Table 3: Ways the Use of ICT Tools Enhance Web-based Learning N = 317

S/N	Ways	Frequency (F)	Percentage (%)	Remark
1	Accessing the Internet	294	92	Accepted
2	Doing assignments via web platforms	280	88	Accepted
3	Browsing web-based materials	196	61	Accepted
4	Enrolling into online courses	98	30	Rejected
5	Collaborating with co-students online	91	28	Rejected
6	Emailing web-based resources	70	22	Rejected
7	Developing ICT skills online	56	17	Rejected
8	Watching web tutorials /lessons	28	9	Rejected
9	Interacting with online instructors	7	2	Rejected

Table 3 explicitly flaunts the responses of students on the various ways the use of ICT tools enhances web-based learning in descending order. The table revealed that, the students agreed on accessing the Internet (92%), doing assignments via web platforms (88%), and browsing web-based materials (61%) above the 50% benchmark. However, the remaining items ranging from 4 to 9 received responses below the 50% standard. It can be concluded that accessing the Internet, doing assignments via web platforms, and browsing web-based materials are the major ways ICT tools enhance web-based learning in the university under study.

Table 4: Challenges in Using ICT Tools to Enhance Web-based Learning N = 317

S/N	Challenges	Frequency (F)	Percentage (%)	Remark
1	Poor Internet Connectivity	266	83	Accepted
2	Inadequate ICT Tools	245	77	Accepted
3	Too much users	154	49	Rejected
4	Too much restrictions	98	30	Rejected
5	Persistent power failure	70	22	Rejected
6	Lack of time	56	17	Rejected
7	Poor ICT Skills	42	13	Rejected

Table 4 overtly presents the responses of students on the challenges encountered in using ICT tools to enhance web-based learning in descending order. Judging against the 50% yardstick, poor Internet connectivity (83%) and inadequate ICT tools (77%) were higher than the set percentage. However, the rest items on the table received responses that were lower than the 50% standard. Based on the result, it can be inferred that poor Internet connectivity and inadequate ICT tools are the major challenges confronting the use of ICT tools to enhance web-based learning in BSUM.

DISCUSSION OF THE FINDINGS

Functionality of ICT tools

The strength of ICT tools is not just in their physical existence but in their operability. This fact necessitated the effort to ascertain the functionality of ICT tools in BSUM. The findings as contained in Table 1 revealed that majority of the ICT tools available in BSUM are functional. This is very cheering because functionality of ICT tools holds high promise for the thriving of web-based learning in the university. The outcome of this study supported the discovery of Bekteshi (2015), who maintained that the functionality of ICT tools is considerably contributing in the application of innovations in universities of which is web-based learning. The study also corroborates the findings of Uduak, Ukpanah and Ebong (2016), who discovered in their study that most ICT tools investigated were functional in the University of Uyo, Nigeria. However, the study negates the position of Usoro *et al.,* (2012), who reported that key facilities that can support WBL in universities are not always functional. This suggests that there is great improvement over the ugly situation that was obtainable before now.

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Adequacy of ICT tools

A look at Table 2 revealed that majority of the ICT tools available in the university under study are not adequate. This could be as a result of astronomical increase in the students' population in the university without commensurate provision of ICT tools. The result of this study relates with Akindoju et al., (2014), and Nuraddeen (2015), who in their separate researches found inadequacy of ICT resources in universities. It therefore implies that web-based learning appears to largely remain on print in the examined university, since the vehicles that enable students to practically reap from the potentials of this innovative learning are grossly inadequate. As a result, pathetic academic performance should be anticipated due to minimal or absence of individual access to web-based learning platforms, that housed vast resources and instructors that can expand the frontiers of students' understanding on diverse subjects. The eventual consequence will not be far from producing graduates with shallow intellectual exposure, thereby lacking recognition in the global academic community.

Ways the Use of ICT Tools Enhance Web-based Learning

Results in Table 3 show that the use of ICT tools enhances web-based learning in minimal ways such as accessing the Internet, doing assignments through web platforms, and browsing web-based materials. The study is in face with Oulmaati, Ezzahri and Samadi (2017) who revealed that nearly two-thirds of the students studied use ICT tools to always search for information on Web sites. The finding also corroborates that of Osuchukwu, Obuezie and Ogwuche (2017), who found out that university students use ICT facilities to improve their studies. However, following this result, it is crystal clear that the key functionalities of the web-based learning remain untapped in the university. This could be attributed to the acute inadequacy of vital ICT tools that are needed to harness learning via the web. With this discovery, web-based learning is still at the embryo phase in Nigeria, thus agreeing with the standpoint of Olaniyan (n.d), who observed that many universities in Nigeria are yet to enjoy the benefits of web-based educational system.

Challenges in Using ICT Tools to Enhance Web-based Learning

Poor Internet connectivity and inadequate ICT tool were discovered to be the major challenges that pose problem to effective learning via the web. The outcome of the study conforms to Chiaha, Eze and Ezeudu (2013), who discovered that poor network connection hinder students from achieving much on the Internet. The study also back Anene, Imam and Odumuh (2014) who discovered ICT deficiencies as a major challenge in learning via electronic platforms. If these challenges are not timely surmounted, there would be limited or no access to learning communities on the web, and the learning objective of the university may suffer defeat.

CONCLUSION

Arising from the findings of the study, it was concluded that ICT tools in the university were functional but grossly adequate. In essence, the tools were not enough to effectively maximize web-based learning to the fullest. The study equally brought to bear that the

use of ICT tools enhances WBL in minimal ways, such as accessing the Internet, doing assignments via web platforms, and browsing web-based materials. Finally, it was also wrapped up that poor Internet connectivity and inadequate ICT tools posed a major challenge to engaging ICTs in web-based learning.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were given:

1. The services of more maintenance engineers should be engaged to ensure constant functionality of ICT tools by checking, repairing and servicing them.
2. Provisions should be made by the university management for yearly deployment of ICT tools in order to bridge up the wide gap between new intakes and ICT tools provision.
3. Web experts should be invited during orientation exercises to expose students to the functionalities of web-based learning and how they can maximally benefit from it.
4. Both government and university managements should prioritize investment in sound Internet connectivity which is fundamental in enhancing learning.

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