

**AVAILABILITY AND USE OF INFORMATION AND COMMUNICATION TECHNOLOGY  
FACILITIES ENHANCING THE USE OF WEB-BASED INSTRUCTIONAL PACKAGES  
FOR TEACHING AND LEARNING OF LIBRARY AND INFORMATION SCIENCE (LIS)  
COURSES IN NORTH-WESTERN UNIVERSITIES**

**BOOR**, Charity Mwuese H.  
Instructional Technology  
Educational Foundation and  
Curriculum  
Ahmadu Bello University,  
Zaria.  
[leemboor15@gmail.com](mailto:leemboor15@gmail.com)

**EFEMBE**, Esther Bassey  
Instructional Technology  
Educational Foundation and  
Curriculum  
Ahmadu Bello University,  
Zaria.  
[esther17bassey@gmail.com](mailto:esther17bassey@gmail.com)

**ABUBAKAR**, Aliyu Dauda  
Medical Library,  
College of Health Sciences  
Ahmadu Bello University,  
Zaria.  
[aliyudauda1983@gmail.com](mailto:aliyudauda1983@gmail.com)

### **Abstract**

*This study examined the availability and use of ICT facilities that enhances the use of Web-Based Instructional Packages (WEBIP) for the teaching and learning of LIS courses in north-western universities, Nigeria. Four research questions were answered. The population of the study comprised the purposively selected two of the seven federal universities in the North Western States because they are offering Library and Information Science (LIS) courses. The respondents are twenty eight (28) staff members and seven hundred and eleven (711) students using purposes sampling technique. An open and close ended questionnaire was used for data collection. Data was analysed using frequency means and standard deviation. The study found that there are ICT facilities are readily available and used for the teaching and learning of LIS courses. The study also found out that both lecturers and students face challenges in the use WEBIP for teaching and learning. Therefore, it was concluded that, to effectively implement the use of ICT facilities in LIS courses, there is need for continuous training and usage. The study recommended among others that ICT resources should be provided and used effectively to enhancing effective teaching and learning of LIS courses for a lifelong learning and sustainable development in the north-western states of Nigeria.*

**Keywords:** Web-Based Instructional, ICT, Teaching and Learning

### **Introduction**

Library and information science education is a very vital component of every educational system. The fact is that it is concerned with the training of librarians to acquire the competences and skills that will equip them in the task of information delivery. That is why Ilogho and Nkiko, (2014) refers to Library and Information Science(LIS) as the exposure of learners to the body of knowledge, attitudes, behaviors and the skills they require to perform their task effectively in the educational institutions and the wider community. The departments of Library and Information Science in Nigerian Universities have attuned their curricula along with the use of Information and Communication Technology (ICT) facilities for their teaching. One way of doing this is to have adequate ICT facilities to teach their content. This is aimed at producing graduates with virtual technological skills and competencies that can serve satisfactorily in today's web technologies - driven library environment. Web technologies skills are not just taught theoretically in educational institutions but in most of them there exist computer and Internet laboratories where the students have hands-on experience (Aina, Mutula & Tiamiyu, 2008). This enhances the use of Web-Based Instructional Packages (WEBIP).

Web-Based Instructional Packages (WEBIP) are powerful instructional delivery tools used to explore, investigate, solve problems, interact, and reflect reasons and concepts in the classroom for a lifelong learning and sustainable development (Zemel, Xhafa & Stahl, 2015). WEBIP technologies

resources are used as e-learning's and are used for instructional delivery which is most commonly associated with higher education and corporate training that uses information network through the internet. World Bank (2010) posits that, electronic learning (e-learning) is used both in informal and formal education setting for facilitation, instruction and interaction for instructional delivery. New York Comprehensive Center, (2011) states that, effective learning dependent on the competencies of the teacher in instructional delivery of lessons. World Bank (2011) links WEBIP technology as having the potential to transform the way lectures are delivered and promote new opportunities for effective teaching/ learning process for a lifelong learning and sustainable development. WEBIP technology can be attained where undergraduate lecturers which are keys to learning can be developed and utilized as necessary pedagogical competencies for instructional delivery through WEBIP technology resource utilization.

In the field of practice, the various educational' categories are implementing WEBIP technology in their instructions and services. They are doing this through the establishment of e-libraries or computer laboratories with Internet connectivity where good numbers of web technologies are brought together to facilitate lecturers or users' access to electronic resources for effective instructional delivery (Igwe, Uzuegbu, Okite & Ndubuisi-Okoh, 2015). Through the use of smart broad and PowerPoint, instructions can be delivered as it is a powerful tool for impactful knowledge to both slow and fast learners and the web based instruction use internet, the World Wide Web (www) and the virtual teaching which entails instructional delivery through audios, video, texts, animation, voice or sounds, images and other web techniques. This means the need to design and develop assess the involvement of the dept. of library and information science undergraduate students in federal universities in the mind blowing programmes of WEBIP technology resources utilization has informed this study.

Instructors have now relied primarily on WEBIP delivery of content, e-mail exchanges and discussion boards (Day, Raven & Newman, 2015). Further explains that, synchronous online instruction, the tools used generally consist of a chat room or "minimally equipped" environment. Recently, educators have turned to a richer set of online tools for WEBIP, for interaction and content delivery for a lifelong learning and sustainable development. These WEBIP tools typically include: Text messaging (chat), which can be both public (viewed by all) and private (person-to-person). Audio interface are also voice communication enables among participants and includes controls for muting some or all of the participants. A Web tool that allows the instructor to direct students' browsers to specific Web addresses and polling tools that facilitate surveys, assessments, voting and virtual hand-raising, application sharing, which provides the instructor with the ability to share the computer desktop with participants or to give keyboard/cursor control of a shared desktop to individual students for a lifelong learning and sustainable development. Also the whiteboard with drawing and annotation tools, ability to "push" content (PowerPoint slides, documents, images and so forth) to participants. The ability to "move" users (students) into virtual rooms for small-group discussion or interaction, the ability to record or archive sessions, text messaging (chat), which can be both public (viewed by all) and private (person-to-person). With the rich set of tools provided by Web-based instruction technologies software, dept. of library information science (LIS) instructors has more opportunities for interaction and content delivery for a lifelong learning and sustainable development while all this requires the use of information and communication technology ICT.

### **Objective of the Study**

This study examined the availability and use of ICT facilities that enhances the use of Web-Based Instructional Packages (WEBIP) for the teaching and learning of LIS courses in north-western universities, Nigeria.

## **Research Questions**

The research question of this study includes:

1. What are the ICT facilities available to enhance the use of WEBIP for the teaching and learning of LIS courses?
2. What are the level of usage of ICT facilities to enhance the use of WEBIP for the teaching and learning of LIS courses?
3. What are the challenges associated with the use of ICT facilities to enhance the use of WEBIP for the teaching and learning of LIS courses?
4. What are the appropriate measured that can be adopted to improve the use of ICT facilities to enhance the use of WEBIP for the teaching and learning of LIS courses?

## **Methodology**

The study is a descriptive research of cross sectional survey type. The population of the study is made up of all the lecturers and undergraduate students in the department library and information science, in Federal Universities in North-Western, Nigeria in respect of the availability and use of ICT facilities to enhance the teaching and learning of LIS courses using web-based instructional package in north-western universities. Purposive sampling technique was used to select Ahmadu Bello University (ABU), Zaria and Bayero University Kano (BUK) because they are offering LIS in North West, Nigeria. Lecturers and students of the department of Library and Information Science of the Universities were selected purposively. Twenty Eight (28) Lecturers and seven hundred and eleven (711) undergraduate students formed the sample. A total of 739 respondents were involved in the study with the use of questionnaire. The data collected from the respondents were analyzed using descriptive statistics.

## Results

### What are the ICT facilities available to enhance the use of WEBIP for the teaching and learning of LIS courses?

Table 1:  
Availability of ICT facilities

S/N	Resource	RA (%)	A (%)	NA (%)	RNA (%)
1	Photocopier	79.3	8.5	6.2	5.9
2	Telephone SMS/Calls	68.1	20.8	5.5	3.11
3	Smart board	67.3	22.1	7.7	2.9
4	Printer	70.2	16.8	8.7	4.3
5	Internet	65.4	17.3	11.6	5.7
6	CD-ROM	66.2	14.6	10.4	8.8
7	e-books	56.3	28.6	10.3	4.9
8	Resource persons	57.4	26.1	9.9	6.6
9	LCD projector	55.1	22.7	11.8	10.4
10	Digital camera	57.8	15.4	14.4	12.4
11	VCD/DVD audio players	57.9	14.6	17.2	10.3
12	Microforms	53.0	23.3	10.4	13.3
13	Slides	49.3	25.1	14.2	10.8
14	Computer hardware and software	49.1	24.6	13.8	11.6
15	Radio/Television	41.2	33.3	15.1	10.5
16	Camcorder	41.7	28.1	18.2	11.2
17	Scanner	32.3	35.9	14.5	17.3
18	Video conferencing	15.7	19.5	28.4	36.4
19	Facsimile	10.0	17.4	21.4	51.2
20	Fax documents	02.3	12.1	30.9	54.7

Table 1 reveals that ICT facilities which were readily available for the teaching and learning of LIS courses for effective instructional delivery in North-West Federal Universities are the; CD-ROM, Internet, Printer, Resource persons, Smart board, e-books, Digital camera, Microforms, Telephone SMS/Calls, Photocopier, LCD projector and VCD/DVD audio players were with scores between 53% and 79%. While the least available are Slides, Facsimile, Computer hardware and software, Fax documents, Scanner, Radio/Television, Video conferencing, Camcorder with the scores of between 2.3% and 49.3%. The result indicated that, North-Western Universities have mostly more than half of the ICT facilities that can enhance the use of Web-Based Instructional Packages in the teaching and learning of LIS courses for effective instructional delivery.

### What are the level of usage of ICT facilities to enhance the use of WEBIP for the teaching and learning of LIS courses?

Table 2:  
Use of ICT facilities

S/N	Statement	NU (%)	NMU (%)	U (%)	MU (%)
1	Facsimile	54.4	28.9	14.6	1.9
2	Camcorder	53.3	3.4	28.7	1.5
3	Video conferencing	29.2	40.1	15.0	15.7
4	Digital camera	34.8	15.6	25.4	24.2
5	Microforms	33.6	14.5	23.9	28.0

6	Smart board	25.4	29.8	17.5	27.3
7	Scanner	28.9	14.6	21.4	39.7
8	Radio/Television	15.2	20.9	36.3	16.2
9	Fax documents	15.7	27.9	55.2	1.2
10	VCD/DVD audio players	11.4	11.6	59.6	17.3
11	Slides	9.9	12.9	30.9	46.1
12	e-books	11.5	14.5	60.4	13.9
13	CD-ROM	9.0	12.2	21.4	57.4
14	Printer	8.4	12.7	19.6	59.3
15	Resource persons	8.3	9.3	27.1	55.3
16	Computer hardware and software	10.1	10.9	18.7	60.4
17	Telephone SMS/Calls	9.9	10.4	17.9	61.8
18	Photocopier	4.7	13.7	18.4	62.4
19	Internet	6.5	13.1	58.4	21.9
20	LCD projector	7.2	5.4	33.2	54.3

**Note:** Mostly Used (MU), Used (U), Not Used (NU) and Not Mostly Used (NMU)

Table 2 reveals that Photocopier, Telephone SMS/Calls, Computer hardware and software, Printer, and CD-ROM are mostly used than other ICT facilities. Inferences drawn from the finding in the level of usage also shows that of e-books, Fax documents, VCD/DVD audio players and Internet 55.2% and 60.4% of ICT facilities. Facsimile and Camcorder, 53.2% and 54.4% are found not used while Video conferencing, Digital camera, Microforms, Scanner, Radio/Television, Slides and Smart board are the least used ICT facilities to enhance Web-Based Instructional Packages in the teaching and learning of LIS courses for effective instructional delivery in North-West Federal Universities.

### What are the challenges associated with the use of ICT facilities to enhance the use of WEBIP for the teaching and learning of LIS courses?

Table 3:  
Challenges of using WEBIP

S/N	Statement	Mean	SD
1	Most ICT resources are not readily available to support lecture room teaching and learning	3.40	0.28
2	Irregular power supply and there is no stand by generator	3.37	0.23
3	No adequate funding for ICT resources to support WEBIP teaching and learning	3.04	0.17
4	I prefer face-to-face teaching and learning	2.89	0.16
5	I do not have adequate ICT skills and knowledge to use ICT in the lecture room teaching and learning	2.15	0.12
	Grand Mean	2.97	0.19

The overall score of all the respondents on the challenges of Web-Based Instructional Package is 2.97 which is a weak response on the challenges of Web-Based Instructional Package in the teaching and learning of LIS courses for effective instructional delivery in North-West Federal Universities. The mean scores per challenges of Web-Based Instructional Package are indicated in Table 3, sorted from the highest to the lowest values. In general respondents were the most positive about the challenges of items 1-3 (M=3.40 to

M=3.04). The mean responses to the challenges of items 4-5 however seems to be disappointing (M=2.89 to M=2.15).

**What are the appropriate measured that can be adopted to improve the use of ICT facilities to enhance the use of WEBIP for the teaching and learning of LIS courses?**

Table 4:  
Measures taken in the provision of WEBIP

S/N	Statement	Mean	SD
1	Both lecturers and students should be trained on how to use ICT resources in order to use WEBIP effectively	3.60	0.35
2	Most ICT resources that are not readily available should be provided in order to support effective WEBIP lecture delivery	3.58	0.29
3	ICT resources should be adequately funded in universities lecture rooms in order to support WEBIP teaching and learning	3.55	0.3
4	Government and universities should provide stand by generators for power supply	3.49	0.26
5	WEBIP should be encouraged for effective instructional delivery in LIS lecture rooms	3.46	0.26
Grand Mean		3.54	0.29

The overall score of all the respondents on the measures taken on the provision of Web-Based Instructional Package is 3.54, a fairly neutral response on the provision of Web-Based Instructional Package in the teaching and learning of LIS courses for effective instructional delivery in North-West Federal Universities. The mean scores on the measures taken on the Web-Based Instructional Package are indicated in Table 4, sorted from the highest to the lowest values. In general all the respondents were the most positive about the provision of Web-Based Instructional Package (M=3.60 to M=3.46).

**Discussion**

The result indicated that North-Western Universities have mostly more than half of the ICT facilities that can enhance the use of Web-Based Instructional Packages in the teaching and learning of LIS courses for effective instructional delivery. Digital camera, Microforms, Scanner, Radio/Television, Slides and Smart board are the least used ICT facilities to enhance Web-Based Instructional Packages in the teaching and learning of LIS courses for effective instructional delivery in North-West Federal Universities. This is contrary to the expectation, as by the virtue of undergraduate courses in ICT facilities are meant to be the major forms of teaching and learning which could enhance the teaching and learning of LIS courses in order to boost the student’s academic achievements. This is in agreement with Opeke and Odunlade (2011) who posit that, ICT facilities (resources) are invaluable for the teaching and learning in Nigerian educational system.

**Conclusion**

The study concludes that effective utilization of web-based instructional package in the teaching and learning of library and information science courses has the capability of promoting effective instructional delivery for lifelong learning and sustainable development in north-west federal universities. However, for the goal of teaching and learning to be achieved, all ICT facilities needed should be adequately provided in order to boost the students’ academic achievement.

**Recommendations**

The study recommended the following that ICT facilities that can enhance the use of Web-based instructional packages (WEBIP) for teaching and learning should be adequately provided as WEBIP promotes effective instructional delivery for lifelong learning and sustainable development. More so, universities should encourage both lecturers and students to utilize WEBIP for teaching and learning.

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