Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.7, No.20, 2016

Readiness of Pre-Service Business Education Teachers for Web-Based E-Learning in Colleges of Education in North-East Nigeria

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Abstract
This study examined the level of preparedness or readiness for use of e-learning amongst pre-service business education teachers in Colleges of Education in North East Nigeria. One research question and one hypothesis guided this study. This study was a sample survey, in which a 51-item structured questionnaire was used to collect data. The researcher developed questionnaire was validated and pilot tested and the internal consistency using Cronbach alpha was 0.81. The participants were 1,003 final year pre-service business education teachers from five Colleges of Education in five states in North East Nigeria that were selected for the study. A sample of 546 pre-service business education teachers was selected using cluster sampling technique. Data were collected with the help of trained research assistants. Data obtained were analysed using frequency counts and percentages, mean, and t-test statistic. The results indicated that the pre-service business education teachers' perceived level of preparedness or readiness for the use of web based e-learning is low. Based on the findings, it was recommended among others that the pre-service business education teachers should be encouraged to engage in hands-on IT training wherever they are available; and that emphasis of IT training for pre-service business education teachers should be placed on web-based instruction (use of internet and World Wide Web), instructional slides and tutorials (Compact Disk- CD based), and virtual teaching (video conferencing technique).
Keywords: Teacher readiness, Teacher preparedness, e- learning, IT-Information technology, ICT-Information and communication technology, Business education, Pre-service business education, Teacher education.

1. Introduction

Advances in Information and Communication Technology (ICT) have opened up new opportunities in instructional delivery. Presently, all professions in Nigeria have introduced computer in carrying out many of their day-to-day activities and operations. As posited by Abdullahi (2008), the current progress in modern methods of instructions makes it mandatory for all teachers to become familiar with various types of instructional media, especially the integration of computers in teaching and learning.

Today, teacher education institutions are faced with the challenge of preparing a new generation of teachers to effectively use information technology as one of the medium of instruction in their teaching. As stressed by Bansal (2008), the use of ICT for teaching can be classified into several forms. Teachers can be trained on how to use ICT or teachers can be trained through ICT. Bansal further stated that teachers are expected to learn how the range of ICT options – from Video conferencing through multimedia delivery to websites - can be used as medium of instruction in meeting the challenges faced by teachers.

It is in order to promote the pedagogical integration of ICT that, the Federal Government of Nigeria through the National Policy on Education (Federal Republic of Nigeria [FRN], 2004) indicated intention to provide facilities and necessary infrastructure for promoting ICT at all levels of education system. Some of the federal government's targets (National Planning Commission, 2005. Pp. 36-37) for achieving the goal of promoting ICT capabilities at the tertiary institutions include, among others, to "ensure that 80 percent of tertiary institutions have functional ICT facilities, ensure that 50 percent of teachers at all levels are trained in computer skills".

In response to the above challenge, Colleges of Education in Nigeria have digitalized their libraries and entrenched computer literacy in their curricula. It is expected that every graduate of College of Education will be able to explore the potential benefits inherent in computer aided teaching and learning, internet and virtual libraries (National Commission for Colleges of Education, NCCE, 2002).

In recognition of these expectations, Aliyu (2006) emphasized that computer literacy courses offered for business education students should involve hands-on-experience in MS Word, MS Excel, Electronic Spreadsheet application, e-mail, World Wide Web (WWW) and internet. Aliyu described business education as an educational programme of instruction, which involves teaching the students the fundamentals, theories, and process of business. Pre-service business education teachers can, therefore, be referred to as an aspect of vocational education designed to prepare student teachers with the skills, attitudes and knowledge needed to manage business, to get a job as an office worker, and to participate in the economy as a producer of goods and services.

From an investigation conducted by (Adeyanju et al, 2009), instructional delivery system is shifting ground in modern societies from the traditional approach to the more modern innovative modes of utilizing internet, e-learning, e-library and virtual classroom interactions . Ikenga, Akiti, and Onyemah (as cited in Uwokike (2011) reported that unlike the conventional methods of teaching and learning, e-learning enables the user to respond and discuss with the system independent of the teacher in the classroom setting.

In Nigeria, the need to increase access to education and to improve pedagogy and learning are some of the trends that have led many tertiary institutions to explore the potentials inherent in the electronic learning in instructional delivery. Ipaye and Atere (2007) used the term e-learning to describe the provision and delivery of the content of education by electronic means. According to Ipaye and Atere:

> e-learning involves the use of a computer or any other electronic device that can convey instructional material from the provider to the recipient. It involves using the internet or an intranet. CD-ROM, DVD, mobile phone, the interactive video, the radio broadcast and television telecast are all modes that can be used to provide learning at a distance… It is essentially a network enabled transfer of skills and knowledge, using electronic applications and processes such as web based learning, computer based learning, virtual classrooms and digital collaborations… (p. 235).

Jegede (2009) had posited that with internet- enabled learning ,learners can reach out to fellow colleagues, receive educational materials from the teacher and submit assignments through web based interaction and communication. Teachers can also reach out to the learners through online video presentation. Investigation by Emebo, Ayo and Daramola (2008) showed that e-learning has become a widely accepted method of teaching and learning throughout the world and that through it, knowledge can be more flexibly provided and learned both on and off campus. Azeta, Ayo, Atayero and Omoregbe (2008) stressed that personal computers, CDs, and access to internet connectivity have inspired the development and delivery of e-learning applications.

In Nigeria, a growing concern is inadequate educational facilities, infrastructure and teachers to meet the demands of increased students' enrolment. According to Federal Ministry of Education (FME, 2006), the increase in students enrolment had led to high students teacher ratio, poor interaction between teachers and students, and had affected learning quality, teacher effectiveness and school efficiency. In order to arrest the trend in students' enrolment, e-learning and increased use of computers have been suggested by researchers such as Abdullahi (2008); Enemali (2010); Liverpool and Marut (2008); Liverpool, Marut and Ndam (2009); and Wuru (2008), as workable instructional strategies.

In recognition of the usefulness of electronic media in improving instructional outcome, Folorunso, Longe and Ijere's study (as cited in Ezike, Olabiyisi, Akinwumi & Shakirat ,2008) suggested the need for the Nigerian educational institutions to take advantages of state-of-the-art educational delivery media and tools, particularly e-learning, in the process of fulfilling its mission. In the words of Igbinoba (2011, p.7) "the era of setting up computers merely to be seen but hardly used in the teaching and learning process should be a thing of the past". As counseled by Anakwe (1991); Cordingly's study as cited in Carmel,*et al.* (2011); and Ezike,*et al.*(2009), the use of computers and other electronic applications in instructional delivery is still in the early stages of development and hence needs research to promote effective use of the strategy.

1.1 Statement of the Problem

The growing awareness of the usefulness of electronic media application in teacher education programme has prompted Colleges of Education in Nigeria to digitalize their libraries and entrench computer literacy programmes. It was expected that every graduate of College of Education should be able to exploit the potential benefits inherent in computer and electronic learning after training. In spite of the expectation, it appears that no study has examined the readiness or preparedness of pre-service business education teachers for use of e-learning for instruction. This lack of information on the use of e- learning amongst pre-service business education teachers has become a thing of concern among researchers (Adeyanju *et al.* 2009; Ogunleye and Adeoye, 2007; Osimabale, 2007; Obaya, as cited in Chukwu, 2011; Yakubu and Mumah, 2003) and was investigated in this study.

1.2 Purpose of the Study

The main purpose of the study was to determine the pre-service business education teachers' perceived level of preparedness for the use of web based electronic learning in Colleges of Education in North East Nigeria

1.3 Research Question

One research question was formulated to guide the study

What is the pre-service business education teachers' level of preparedness for the use of web based electronic learning in Colleges of Education in North East Nigeria?

1.4 Hypothesis

The null hypothesis that guided the study was tested at 0.05 level of significance.

HO_1 Proprietorship is not a significant factor in the mean opinion of pre-service business education teachers on their perceived level of preparedness for the use of web based electronic learning in Colleges of Education in North East Nigeria.

2. Literature Review

This study is based on e-learning as educational approach or tool that supports traditional subjects (E- Learning, 2013). The emphasis of educational approach is on actual learning that takes place using computer and other electronic applications in learning. Under this approach, a variety of descriptive terms have been employed to categorize the extent to which technology is used in teaching and learning. Examples are: blended learning, computer based learning (CBL), Computer Supported Collaborative Learning (CSCL), Synchronous/Asynchronous communication, Web-Based Learning and so on (Smith, 1998).

Zhao, Zhon, and Nunamaker (as cited in Okigbo & Ndolo , 2011) define e-learning as technology based learning in which learning materials are delivered electronically to remote learners via computer network. Web-based learning or internet enabled learning is a form of learning in which learners receive learning materials and submit assignments instantaneously through the internet using a web browser such as Netscape navigator or internet explorer. In web-based learning, instructors are able to reach out to the learners online and learners are able to reach instructors and other learners more often and beyond scheduled class time and office. Ezike *et al.* (2009) conceptualized web-based learning as learning via the internet and the World Wide Web, which itself is a form of Technology Enhanced Learning (TEL). According to Ezike *et al.* web-based learning is an online delivery through computer networks of information for the purpose of education, training and knowledge management.

Internet is the world's largest computer network (Minhas, 2007). Sampath; Panneerselvam and Sathanam (2007) said internet is the abbreviation of inter-network and is described as network of networks linking millions of computers worldwide for communication purposes. As described by Leon and Leon (2005), the internet offers access to data, graphics, sound, software, text and people through a variety of services and tools for communication and data exchange. Leon *et al*, p.21.4, theorized that the special thing about internet is that it "… is the cheapest and the fastest means to get or obtain information, provide information and compile information" ; and that, "… internet literacy is a must for every individual who wants to succeed in this information age" p.21.4

A study by Ogusor (2011) revealed that the usage of e-learning enhances greater collaboration among learners, increases access to education; make learning convenient and easier for young and adult learners to develop the required competencies in their areas of specialization. Similarly, a study by Olaniyi (2006) demonstrated that e-learning is a useful tool for reducing learning time, increasing retention of users, automating user's progress, increasing user's ability to determine their pace and progress, and for confirming user's mastery of learning objectives through assessment.

As suggested by the President of American University of Nigeria (AUN), Yola- Nigeria, Dr. Ensign, an educational system that combines class teaching and e-learning is what Nigeria needs to enlighten its huge population on issues relevant to her development (Ogundare, 2012). Also, as postulated by Ngugi (2007. p. 189), "the usage of computer in schools now and in the future is a fact which cannot be ignored or wished away and is a pre-requisite for the introduction of e-learning into the school system…"

The delivery of information through internet and multimedia create virtual classrooms and comes close to the actual classroom situation. The e-learning delivery method is interactive and has three different options (Sampath *et al*. (2005). These are:World Wide Web (WWW) Multimedia-Based Self-Learning , and teleconferencing.

It is in order to facilitate readiness for use of web based internet service, and to equip the students with the skills for the world of work in the 21st century that the Federal Republic of Nigeria (FRN,2O12) provided the following computer application courses as part of the Minimum Standards for Nigeria Certificate in Education (NCE), business education course: Type writing/Keyboarding, Type writing/Keyboarding II, Business Education Practicum ,Word processing I, Computer Appreciation, Word Processing 11, Information and Communication Technology/Computer Application courses such as computer assisted learning. The general objective of these courses is to deepen students' understanding, both in the use of ICT tools and how to integrate those tools into teaching- learning process, thereby promoting web based education.

Attempts to address the issue of adoption and use of e-learning have resulted in several studies such as Atsumbe, Ngufor, Chinda, and Enoch (2012) Ezeahurukwe (2011), Jegede (2009), Nwafor and Ifeanyi (2011), Ugwoke (2011), including authoritative opinions relevant to this research. The studies and authoritative opinions focused primarily on e-learning competencies of serving secondary school teachers and university undergraduate students, or on more general aspects of e-learning theory and pedagogy. For instance, a study

conducted among industrial technology education students in Federal University of Technology, Minna, Nigeria by Atsumbe, Ngufor, Chinda, and Enoch (2012) found that those students needed all the 45 word processing, internet and programming skills for effective use of e- learning. Similarly, a study of students' readiness for internet-enabled learning in Obafemi Awolowo University, Ile- Ife, Nigeria by Jegede (2009) demonstrated that the skills that would ensure maximal benefits from internet- enabled learning environment were those not possessed by those students. While these studies and authoritative thinking support the usefulness of e-learning in promoting academic achievement and interest of learners, their sample and nature does not permit conclusions to be drawn about students' preparedness for web- based learning in Colleges of Education in Nigeria. The current study examined the emphasis given to the use of web-based e- learning in the preparation of pre-service business education teachers in Colleges of Education in North East Nigeria.

3. Methodology

The research design for this study is a sample survey research. A sample survey research is a study in which a researcher infers information about a population of interest based on the responses of a sample drawn from that population (Gay,1996). In this study, attempt was made to investigate the readiness for the use of web based e-learning amongst pre-service business education teachers in Colleges of Education in North East Nigeria.

The study involves the use of questionnaire to collect data from randomly selected Colleges of Education and pre-service business education teachers in order to test the null hypothesis and to answer the research question. The area of the study covers five states in North East Nigeria where the seven Colleges of Education (C. O. Es) are located. The area covered are: Azare (Bauchi State), Gombe (Gombe State), Hong (Adamawa State), Yola (Adamawa State), Potiskum (Yobe State), and Zing (Taraba State).

The population for this study comprised all the 1,003 NCE III (final year) pre-service business education teachers from the five Colleges of Education selected for the study. A total of 546 pre-service business education teachers drawn from five Colleges of Education constituted the sample for the study. This represented one College of Education from each of the five states selected for the study. The sample of the final year pre-service business education teachers was randomly selected using the Krejcie and Morgan Table for determining needed sizes of randomly chosen sample (S) from a finite population (N) (Isaac & Michael ,1983).

A structured questionnaire developed by the researcher was used for data collection for this study. The title of the questionnaire is Electronic Learning Questionnaire (ELQ). The four- point rating scale that was used to provide answers to the various sections of the questionnaire was as follows: Strongly Agree (SA) = 4 points; Agree (A) = 3 points; Disagree (D) = 2 points; and, Strongly Disagree (SD) = 1 point.

The questionnaire for data collection for this study was validated by three experts. The experts were required to ensure that the items provide adequate answers to the research question. They were also asked to review the questionnaire in terms of clarity, appropriateness of terms, organization, expressions, and correctness of spellings. In order to achieve the objectives of the study, the experts were given free hand to either remove any item they considered irrelevant or add any other items they consider important but were not reflected in the questionnaire. Based on their inputs, nine items on the use of computer in accounting were added. This raised the number of items from 42 to 51 that was used for the pilot test.

The questionnaire for the pilot test was administered to a sample of 66 pre-service business education teachers from one of the Colleges of Education in Plateau State, Nigeria, outside the study area by one research assistant. Out of the 66 copies of the questionnaire administered to the pre-service business education teachers, 55 (representing 83.33 per cent) were returned. The entire 55 copies of the questionnaire were used.

Data gathered through the pilot test were analyzed using Cronbach's alpha, also referred to as coefficient alpha. Gay (1996) advised that if items are scored such that different answers are worth different numbers of points, for example, 0, 1, 2 or 3, Cronbach's alpha can be used. The results showed positive overall reliability coefficient of 0.81 for the entire questionnaire. This was considered high enough and showed that the questionnaire can be used to determine the extent of preparedness or readiness of pre-service business education teachers for the use of electronic learning.

The Electronic Learning Questionnaire (ELQ) used for data collection for this study was administered to the pre-service business education teachers during the 2015/2016 academic session with the aid of trained research assistants. The research assistants were five in number. They were briefed on the purpose of the study and on the participants for the study. Each copy of the questionnaire was accompanied by a letter introducing the researcher and the purpose of the study. Both the assistants and the participants were quite cooperative. The result of their efforts was high return rate and satisfactory completion of the returned copies of the questionnaire. Out of the 546 copies of the questionnaire distributed to pre-service business education teachers in Colleges of Education in North East Nigeria, 484(representing 88.64 %) were returned. The entire 484 were used.

The data collected by use of the structured questionnaire were analyzed using mean, and t-test statistic. Demographic Information was collected from the pre-service business education teachers in order to group the data for testing the hypothesis. The mean was used for analyzing the data because it was described by Sambo

(2005, P. 325) as "the most frequently used measure of central tendency and most important of all the numerical descriptive measure". The null hypothesis was tested at 0.05 level of significance using t-test. As espoused by Isaac and Michael (1983), the t-test can be used to satisfactorily determine a significant difference between two large samples. As the basis for decision, the null hypothesis stated for the study was rejected if the calculated value of the test statistic (t-test) is greater than the probability value or value of the significant level.

Data collected through the use of the rating scale were interpreted relative to the real upper and the real lower limits of numbers. For the different numbers of points, 1, 2, 3 and 4, the real lower and the real upper limits of the numbers are as follows: 1represents the interval between 0.50 and 1.49, meaning that the participant feels completely not prepared; 2 represents the interval between 1.50 and 2 .49, meaning that the participant is not prepared; 3 represents the interval between 2.50 and 3.49, showing fairly well prepared; and 4 represents the interval between 3.50 and 4.49, indicating that the participant feels well prepared. The test statistics were analysed with the aid of Statistical Package for Social Sciences (SPSS) Version 20.

4. Results

Table 1. Pre-service business education teachers' perception of their level of preparedness for the use of web based e-learning

S/N		$\bar{x}_p$ n =82	$\bar{x}_z$ n =88	$\bar{x}_g$ n=132	$\bar{x}_a$ n = 56	$\bar{x}_y$ n=126	$\bar{x}_t$ n =484	Remark
	Lower electronic communication applications							
1.	Use of M.S Word to process professional or personal document	3.59	3.00	2.68	3.70	3.08	3.11	Fairly prepared
2.	Use of Internet to compose relevant mails	3.22	2.92	2.60	3.23	2.90	2.91	Fairly prepared
3.	Use of e-mail for sending professional or personal messages	3.37	2.99	2.56	3.23	2.94	2.95	Fairly prepared
4.	Use of e-mail for receiving messages	3.30	3.30	2.64	3.23	2.87	3.00	Fairly prepared
5	Use of electronic address book (subscription to mailing list)	2.94	3.06	2.58	2.95	2.81	2.83	Fairly prepared
6	Sending attachment to e-mail	3.06	3.18	2.58	3.02	2.89	2.90	Fairly prepared
7.	Forwarding of e-mails	2.99	3.24	2.44	3.05	2.84	2.85	Fairly prepared
	Higher electronic communication applications							
8.	Use of GSM to book appointment or discuss personal problem with teachers	3.07	3.16	2.59	3.18	2.81	2.90	Fairly prepared
9	Use of Computer to search for information for assignment	3.73	2.93	2.45	3.41	3.02	3.01	Fairly prepared
10.	Use of Computerized diagnostic assessment to assess learners performance	3.10	3.15	2.33	2.73	2.60	2.73	Fairly prepared
11.	Use of Computer to provide feedback to learners	3.02	2.78	2.23	2.55	2.60	2.60	Fairly prepared
12.	Use of computer for simulation	3.01	3.32	2.20	2.45	2.48	2.64	Fairly prepared

13.	Use of multimedia to present lesson in the classroom	3.37	3.25	2.20	2.82	2.63	2.77	Fairly prepared
14.	Use of computer to practice principles and procedures (drill)	3.06	3.24	2.48	2.71	2.67	2.79	Fairly prepared
15.	Use of computer for statistical analysis (spreadsheet application)	3.12	3.01	2.63	2.63	2.60	2.77	Fairly prepared
16.	Use of multimedia to present reports of research	3.21	3.10	2.27	2.63	2.65	2.72	Fairly prepared
17.	Use of computer for self-education	3.23	3.08	2.26	2.70	2.64	2.72	Fairly prepared
18.	Use of Computer of diagnose learning problems	2.91	2.89	2.26	2.32	2.47	2.55	Fairly prepared
19.	Use of computer to chart or discuss assignments with colleagues online.	3.32	3.22	2.24	2.77	2.61	2.76	Fairly prepared
20.	Use of computer to discuss assignments with teachers online.	3.20	2.97	2.20	2.64	2.41	2.62	Fairly prepared
21.	Use of recorded video.	3.10	2.81	2.19	2.59	2.52	2.59	Fairly prepared
22.	Use of graphic software to produce charts, learning materials for lessons.	3.12	3.30	2.74	2.61	2.60	2.86	Fairly prepared
23.	Use of computer to provide on-line counseling to pupils.	3.11	3.33	2.27	2.34	2.46	2.66	Fairly prepared
24	Partnering with other colleagues online for academic information.	3.22	3.34	2.23	2.64	2.63	2.75	Fairly prepared
	Lower web-based applications							
25.	Assessing the web pages of net institution for educational purposes.	3.45	3.13	2.51	2.71	2.37	2.77	Fairly prepared
26.	Use of browsers to download information from internet sites	3.33	2.95	2.39	2.86	2.77	2.80	Fairly prepared
27.	Use of browsers to process account receivable	3.21	2.98	2.28	2.57	2.56	2.67	Fairly prepared
28.	Use of browsers to process account payable	3.07	2.99	2.24	2.39	2.40	2.58	Fairly prepared
29.	Use of browsers to prepare ledger account	3.16	3.15	2.23	2.16	2.20	2.54	Fairly prepared
30.	Use of browsers to prepare inventory/stock	3.04	3.18	2.12	2.16	2.18	2.49	Less than fairly prepared
31.	Use of browsers to process purchase order	3.27	3.14	1.98	1.91	2.33	2.49	Less than fairly prepared
32.	Use of browsers to process sales order	3.05	3.28	2.39	2.29	2.45	2.67	Fairly prepared
33.	Use of browsers to process bookkeeping	3.13	3.20	2.33	2.25	3.21	2.85	Fairly prepared
34.	Use of browsers to process journal entries	3.20	3.02	2.40	2.39	3.11	2.83	Fairly prepared
35.	Use of browsers for trial balances	3.12	2.90	2.13	2.25	2.27	2.49	Less than fairly

								prepared
36.	Saving information on web pages	3.18	2.92	2.39	2.75	2.61	2.72	Fairly prepared
37.	Printing information from web pages	3.10	3.05	2.51	2.50	2.61	2.73	Fairly prepared
38.	Use of browsers to process payroll	3.12	3.34	2.48	2.54	2.43	2.74	Fairly prepared
39.	Use of browsers to interact with teachers	3.06	3.25	2.42	2.48	2.39	2.68	Fairly prepared
40.	Use of browsers to access e-library resources	3.23	2.80	2.54	2.59	2.56	2.71	Fairly prepared
41.	Use of browsers for on-line examinations	3.33	3.08	2.46	2.64	2.40	2.73	Fairly prepared
42.	Visit website to receive assignments	3.29	3.03	2.48	2.50	2.60	2.75	Fairly prepared
43.	Visit website for course registration	3.45	2.55	2.49	2.64	2.58	2.70	Fairly prepared
44.	Visit website to confirm course registration	3.21	2.86	2.39	2.59	2.58	2.69	Fairly prepared
45.	Visit website to access course on-lines and supporting materials	3.34	2.65	2.48	2.70	2.54	2.70	Fairly prepared
46.	Set up computer network in computer lab for lecture presentations.	3.39	2.74	2.34	2.59	2.40	2.64	Fairly prepared
	Higher web-based applications							
47.	Use of different search engines to collect information for research work	3.54	2.60	2.39	3.18	2.71	2.80	Fairly prepared
48.	Use of different search engines to collect information for course development.	3.41	2.20	2.38	3.11	2.58	2.66	Fairly prepared
49.	Use of different search engines to compile list of tools/equipment required for business education	3.23	2.17	2.36	2.43	2.52	2.52	Fairly prepared
50.	Participation in virtual classroom/ laboratory with computers connected with world wide web.	3.15	2.24	2.19	2.34	2.56	2.47	Less than fairly prepared
51.	Participation in video conferencing using digital camera.	3.16	2.28	2.27	2.14	2.53	2.48	Less than fairly prepared
		3.21	**2.98**	**2.38**	**2.66**	**2.61**	**2.72**	**Fairly prepared**

Key:

$\bar{x}_p$ = Mean responses of pre-service business education teachers in Federal College of Education (Technical) Potiskum.

$\bar{x}_z$ = Mean responses of pre-service business education teachers in College of Education Zing.

$\bar{x}_g$ = Mean responses of pre-service business education teachers in Federal College of Education

(Technical) Gombe.

$\bar{x}_a$ = Mean responses of pre-service business education teachers in College of Education Azare.

$\bar{x}_y$ = Mean responses of pre-service business education teachers in Federal College of Education Yola.

$\bar{x}_t$ = Total mean responses on each item of the questionnaire.

n = Number of pre-service business education teachers in each College of Education.

N = Total number of pre-service business education teachers in all the Colleges of Education.

Data presented in Table 1 reveal the pre-service business education teachers' perception of their level of preparedness for the use of web based e-learning in Colleges of Education in North East Nigeria. The results indicated that the pre-service business education teachers considered themselves as fairly well prepared in 45 (88.24%) and less than fairly well prepared in five (9.80%) of the e-learning skills identified under this category.

The pre-service business education teachers from FCOE (Technical) Potiskum considered themselves as having fair level of preparedness in 48 (94.12%) and prepared in only three (5.88%) of the application skills identified under this category. The said teachers had mean scores ranging from 2.91 on item 18 (use of computer to diagnose learning problems) to 3.73 on item 9 (use of computer to search for information for assignment). Similarly, the pre-service business education teachers from the COE Zing felt that they were fairly well prepared in 47 (92.16%), and less than fairly well prepared in 4 (7.84%) of the application skills under this category. The said teachers had mean scores ranging from 2.17 on item 49 (use of different search engines to compile list of tools/equipment for business education), 3.34 on items 24 and 38 (partnering with other colleagues online for academic information, and use of browsers to process payroll respectively).

Whereas the pre-service business education teachers from FCOE (Technical) Gombe felt less than fairly prepared in 39 (76.47%) of the 51 application skills under study, their counterparts from COE Azare considered themselves as having less than fair level of preparedness in 15 (29.41%) of the application skills identified under this category. On the other hand, while the pre-service business education teachers from FCOE (Technical) Gombe considered themselves as fairly well prepared in 12 (23.53%), the pre-service business education teachers from COE Azare accepted that they are well prepared in one (1.96 %) and fairly well prepared in 35 (68.63%) of the application skills under this category.

The results further indicated that the pre-service business education teachers from FCOE Yola felt fairly well prepared in 36 (70.59%) and less than fairly well prepared in 15 (29.41%) of the 51 application skills under this category. Based on the sub-application skills identified under this category, it can be seen that their overall mean scores for the four sub skills ranged from 2.83 to 3.11 for the lower electronic communication applications, 2.55 to 3.01for the higher electronic applications, 2.49 to 2.85 for the lower web based applications, and 2.47 to 2.80 for the higher web based applications. This implies that the pre-service business education teachers' perceived level of preparedness to engage in e-learning is low.

Table 2 .Summary of t-test analysis for influence of proprietorship on level of perceived preparedness of pre-service business education teachers

Group	N	Mean	Std. Dev.	Mean Diff.	Std. Err diff	Df	T	Sig
COE	144	2.863	.974	.192	.103	482	2.015	.185
FCE	340	2.671	1.056					
Total	**484**							

Table 2 revealed the t-test comparison of the mean responses of pre-service business education teachers regarding their perceived level of preparedness or readiness for the use of web based electronic learning in the Colleges of Education in North East Nigeria. The said Table shows that the t-value ($t=2.02$, $df=482$, $P<0.05$) was statistically significant at 0.05 alpha level. Therefore, the null hypothesis was rejected. This implies that proprietorship is instrumental in moderating the responses of pre-service business education teachers regarding their perceived level of preparedness for the use of e-learning to enhance their learning experience. In other words, proprietorship influenced the observed differences between the mean responses of pre-service business education teachers regarding their perceived level of preparedness for the use of e-learning to enhance their learning experiences.

4.1 Findings

1. The pre-service business education teachers' level of preparedness for the use of web based e-learning

is low.

2. Proprietorship significantly influenced the pre-service business education teachers' perceived level of preparedness for the use of web based e-learning.

4.2 Discussion

The objective of the research question was to determine the pre-service business education teachers' preparedness or readiness for the use of web based e-learning. The results indicate that the pre-service business education teachers considered themselves as fairly well prepared in 45 (88.24%) and less than fairly well prepared in 5 (9.81%) of the e-learning skills identified for the study. The overall mean level of preparedness or readiness ranged from 2.47 to 2.49 for less than fairly well prepared, 2.52 to 3.11 for fairly well prepared, indicating a general feeling of low level of preparedness or readiness to use wide range of skills needed to navigate the web proficiently, communicate with colleagues and learn. The results of the study further show that the overall mean scores for the four sub skills ranged from 2.83 to 3.11 for the lower electronic communication applications such as basic computer operation, word processing , 2.55 to 3.10 for higher communication applications, 2.49 to 2.85 for lower web-based applications, and 2.47 to 2.80 for higher web-based applications such as the use of virtual laboratory, computer conferencing or world wide web, which as stated by Dillon and Jobst (2005), provide opportunity for the end users to follow paths of exploration as they may prefer. This result is consistent with Jegede (2009) who found out that students' skills in communicating and searching the net were in the lower categories; and that the skills that would ensure maximal benefits from internet enabled learning environment were those that were not possessed by the students. The finding is also consistent with that of Ezeahurukwe and Johnson (2011), that the training teachers received do not meet their needs for effective use of e-learning in their institutions. A possible explanation for these findings could be as stated by Obaya (as cited in Chukwu, 2011) that enough attention is not being given to the use of electronic media in Nigeria teacher preparation programmes; and that, the programmes are still based predominantly on traditional practices.

5. Conclusion

Based on the findings of the study, the following conclusion was drawn:

The pre-service business education teachers in Colleges of Education in North East Nigeria felt unprepared for web based e-learning, especially in the area of higher web applications. However, the pre-service business education teachers' perceived level of preparedness or readiness for web based e-learning is dependent on type of ownership of College of Education. This means that adequate attention is not given to the use of web based e-learning in the preparation of pre-service business education teachers in Colleges of Education in North East Nigeria. This result supports the need to provide the pre-service business education teachers the opportunities not only to practice the use of technology but also to understand how to integrate technology into instructions. If the nation is to transform schools into 21st century learning environment, the teachers must become members of growing networks of shared expertise. Previous research (e.g. Bansal, 2008) has revealed that the teachers who feel prepared to use technology are more likely to use it more than teachers who feel unprepared. Therefore, the pre-service business education teachers must be supported to engage in repeated hands-on-training in order to prepare them to learn or interact through the web flexibly and creatively.

6. Recommendations

Based on the findings of the study, the following recommendations were made:

1. The pre-service business education teachers should be encouraged to engage in hands-on-IT training wherever they are available.
2. The emphasis of computer training programme for the pre-service business education teachers should be placed on deepening the students knowledge in the use of internet, instructional slides, and virtual teaching (Video conferencing).
3. Teacher training institutions should accept the challenge of adjusting to the advances in technology to meet their obligations to the pre-service business education teachers.

7. Acknowledgement

We appreciate the cooperation of the participants and the support of our research assistants, namely Dr. D. Moses, Dr. J.D. Medugu, Dr. N. Hassan, G. Rishi, S. Yidi; and all those who contributed to the success of this research work.

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