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EXTENT OF APPLICATION OF WEB-BASED INSTRUCTIONAL TECHNOLOGIES BY BUSINESS EDUCATION LECTURERS IN TERTIARY INSTITUTIONS IN DELTA STATE.

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Abstract
The need to equip business education students with competencies for managing the web-oriented business workplace of today necessitated this study, which focused on the extent business education lecturers apply web-based instructional technologies in teaching. One research question and two null hypotheses guided the study. Descriptive survey design was adopted. The entire population of 122 business education lecturers in one university and four colleges of education in Delta State were studied without sampling. A structured and validated questionnaire containing 15 items was used for data collection. Spearman Brown prophecy formula was used to establish the reliability of the instrument which yielded a coefficient of 0.89. Data collected were analyzed using mean and standard deviation to answer the research questionand determine the homogeneity or otherwise of the respondents' views, while the z-test was used to test the hypotheses at 0.05 level of significance. Findings revealed *that the respondents applied web-based instructional technologies to a low extent in teaching. The extent of application of web-based instructional technologies in teaching by the respondents was not significantly influenced by gender and institution type. It was concluded that graduates of business education programmes would lack the requisite competencies to cope with the current wave of technological trends shaping today's business* world. Therefore, it was recommended among others that, *business education lecturers need to get themselves involved in further training in web-based technologies to enable them possess competencies for effective application of web-based instructional technologies in teaching.*

Keywords: *Web-based instruction, web-based instructional technologies, business education.*

Introduction

In the present information age, technological advances are changing the way individuals and organizations operate as well as teaching and learning in schools. Schools

cannot hope to improve either the academic achievement of students or the overall value of their programs without sufficiently integrating technology (Donahoo& Whitney, 2006). The fact that a lot of tertiary institutions are provided with computers with internet access, makes teaching and learning through the internet an attractive and innovative instructional strategy in the 21st century classroom environment. Consequently, Pollicia, Simpson and Aldredge (2001) asserted that, the widespread availability of the internet has precipitated a vast change in higher education and especially in the delivery of instruction.

It is on record that the internet has provided novel avenues for teaching and learning in the area of internet powered web-based instruction. Web-based instruction is delivered via the computer using the internet to make it capable of instant updating, distribution and sharing of information (Rosenberg, 2001).In web-based instruction, there is an opportunity to learn subjects independent from a device (using any computer platform), distance (from any place in the world), and time (at any time of day) (Duffy, McDonald &Mizell, 2003).

The actualization of web-based instruction in tertiary institutions depends on the usage of the following web technologies such as electronic bulletin boards, live virtual classrooms, cloud computing, social networking tools, webcasting, podcasting, interactive whiteboards, and internet chat relay among others. The following web-based technologies were briefly discussed as follows:

Podcast:

O'Leonard in Halse and Mallinson (2009) defined podcasts as audio or video files published online, which can be downloaded from the internet. Mamman and Nwabufo (2014) asserted that podcasts are usually included within the web 2.0 galaxy as another example of user generated content. They further stressed that within academic publishing, podcasts are becoming an increasingly common adjunct to online journals and are expected to be very popular. If effectively deployed, business education lecturers can use podcasts for collaborative professional development as a means to enhance learning experiences (Pillai, 2009).

Mobile learning:

Mobile learning (sometimes called m-Learning) is a new way of learning using small, portable computers such as personal digital assistants (PDAs), handheld computers, two-way messaging pagers, internet-enabled cell phones, as well as hybrid devices that combine two or more of these devices into one (Hunsinger in Sife, Lwoga, & Sanga, 2007). Mobile learning provides potential avenues for interesting and flexible avenue for teaching and learning business education at anywhere and anytime at the fingers tip of lecturers and students.

Weblogging:

The word weblogging is a shortened form of weblog. According to Richardson (2006), weblog is another internet facility that is used in teaching and learning. A weblog is a frequently updated website consisting of dated entries called posts arranged in reverse chronological order so the most recent entry appears first (Brownstein & Klein, 2006). Business education lecturers can use weblogging to share common perspectives, visions and commitments on teaching and learning (Enang, 2014). And can be used to provide students with constant feedback outside the classroom.

Social Networking Tools:

Boyd and Ellison (2007) defined social networking tools as web-based services that allow individuals to:

- ***Construct a public or semi-public profile within a bounded system.***
- ***Create a list of other users with whom they share a connection.***
- ***View and traverse their list of connections and those made by others within the system.***

Facebook, Skype, Twitter, Badoo, Yahoo messenger (I.M) and Instagram are examples of social networking tools that are most dominant on the internet in recent years. It is one of the tools that business education lecturers can use to stay informed with their students and used to keep in touch with what their colleagues are postulating, researching and doing in the field of business education.

RSS Live Feed:

Smith (2010) opined that the acronym RSS originally stood for RDF (Resource Description Framework) which was simplified to Rich Site Summary. It is commonly known as Really Simple Syndication or web feed. RSS live feed is an XML format for distributing updated news, headlines and content on the web.Rich site summary can be used by business education lecturers to exchange ideas and knowledge in order to stay informed of current information in teaching and learning processes of business subjects. It can also enable business education lecturers' to syndicate their instructional procedure to students automatically.

Wikis:

A wiki is a collaborative asynchronously website comprising of collective work of many lecturers and students. Arreguin (2004) described wiki as a group of web pages that allow users (teachers and students in particular) to add content similar to a discussion forum or blog, but also permits others (sometimes completely unrestrictedly) to edit the content. The collaborative nature of a wiki has great potential in business education as it allows

constructive discussion and group works among lecturers and students as well

Internet Telephony:

According to Smith (2010), internet telephony is also known as Voice Over Internet Protocol (VOIP). It is a technology for transmitting ordinary telephone calls over the internet. It takes analog audio signals, like the kind you hear when you talk on the phone, and turns them into digital data for transmission over the internet. Business education lecturers and students don't need to set their foot on tertiary institutions for lectures with the advent of internet telephony.

Electronic mail (e-mail):

The term electronic mail is popularly called e-mail. It is the transmission of messages over an internet powered desktops, laptops and internet enabled smart phones. Mbaezue (2010) averred that e-mail is a widely used internet application that enables individuals or group of individuals to quickly exchange messages even if they are separated by distance. Oketunji (2000) described e-mail as an increasing popular method of communication, especially in educationally setting which the teacher can use to communicate written message and sending it anytime, send instructions, announcements and assignment to students in any location.

It is expected for every business education lecturer and student to have at least one e-mail address for web-based instruction to take place.With the help of the electronic mail business education lecturers can do the following:

- Exchange private e-mail exchange with fellow colleague's one on one.
- Send the copies of ideas, information and research to other colleagues and students.
- Hold discussions in online and off-line modes.
- Distribute news to fellow colleague of special interest and students alike.
- Seek for information from colleagues and students.

Electronic Portfolio:

Butler in Barrett (2010) defined electronic portfolio as an electronic collection of evidence that show teachers and students academic journey over time. Evidence may include writing samples, research projects and reflective thinking. In addition, Geoff in Barrett (2010) opined that electronic portfolio serves as a central point for lecturers and student experiences as a reflection of their continuous personal development and not just a store of evidence. Mamman and Nwabufo (2014) opined that e-portfolio is used to create a digital online repository for lecturers to publish their articles, research works and instructional materials for students and fellow colleagues in the field of business education.

Cloud Computing:

Cloud or utility computing is a type of computing that relies on sharing a pool of virtual resources rather than deploying personal hardware and software because of its virtualization qualities. Smith (2010) asserted that *cloud computing or short name, the cloud,* is used when virtualized resources are provided as a service by using internet technologies rather than depending on hardware and software. With cloud computing, business education lecturers can access a single internet server to retrieve and update their instructional procedure without logging to different connected computers.

Live Virtual Classrooms (LVCs):

Halse and Mallinson (2009) asserted that when a number of synchronous applications (usually including a minimum of one audio and one visual component) are combined to facilitate teaching and learning, they are collectively referred to as “Live Virtual Classroom” (LVC). Accessible over the internet, LVCs combine the benefits of traditional face-to-face classroom learning with sophisticated internet technologies such as video streaming and voice over internet protocol (Van Dam, 2004). LVCs allow business education lecturers and students to meet, chat and interact synchronously, independently of location employing hands on and or lab style format of teaching and learning. LVCs allow business education lecturers to contact fellow lecturers or students to peers whenever desired with the use of internet telephony to discuss and brainstorm academic ideas and problems.

Webcasting:

Webcasting or web streaming is an internet based technology that can be used for teaching and learning in audio and video form synchronously over the web. Webcasting is a system where two or more parties (lecturers and students) in different physical location can see and hear each other in real time over a regular high-speed internet connection. It is a method of performing interactive video and audio communications or conferencing session over the internet. Webcasting or streaming can also include data sharing with an electronic whiteboard where both the lecturer and students can draw, chat or text online in real time. Business education lecturers can conduct teaching activities from the comfort of their homes without standing their foot in campuses of tertiary institutions.

Interactive Whiteboards:

Interactive whiteboards or electronic whiteboards are devices connected to an internet powered computer, which in turn are connected to multi-media projector. Interactive whiteboards are replacement of the traditional chalkboard as they are touch-sensitive relying on electronic pen. The Department for Education and Skill in Sife, Lwoga and Sanga (2007)

described interactive whiteboard as simply a surface onto which a computer screen can be displayed via a projector.

Olise (2014) opined that interactive whiteboard provides interaction between the business educators and students via input devices of keyboard, mouse, pen, finger and other peripherals. Olise further asserted that, interactive whiteboards has facilities like flip chart that enable business educators to move backward and forward between pages and texts, shapes can be manipulated on screen, class work can be saved for later use and a graphic feature that provide maps and drawing tools in 2D and 3D shapes.

Electronic Bulletin Boards:

Smith (2010) described electronic bulletin board as asynchronous web-based instructional technology that allows lecturers and students with common interest to communicate with each other in form of online classroom discussion forum. Electronic bulletin boards are sometimes called newsgroups in the e-learning environment, which is facilitated by an internet service known as Usenet. Layton, Scott and Zydyk (2005) defined electronic bulletin board as a computer application dedicated to the sharing or exchange of messages and other related files on the internet. It is specially designed to a single subject and allows business education lecturers' and students to post questions, read comments and answers to posted questions.

Internet Relay Chat:

Internet Relay Chat (IRC) or Instant Messaging (IM) is a synchronous web based instructional technologies with the resemblance of internet telephony except that the conversation is written rather than spoken in real time. More so, internet relay chat permits audio and video web streaming. It also allows one to communicate with more than one person at same time. Internet relay chat allows business education lecturers and students discuss in real time academic issues on instructional lessons before and after delivery.

It is disheartening that most of these web-based instructional technologies are either not available or underutilized in the tertiary institutions. Consequently, the unemployed rate of business education graduates may suggests that they lack the basic competencies needed in modern business offices due to the poor exposure to web-based technologies while learning - It becomes imperative for business education lecturers to be versatile in the use of web-based technologies in classroom instructions in order to strengthen the relevance of business education programmes to the current web-powered business world. The extent to which business education lecturers in universities and colleges of education in Delta State use web-based technologies in teaching is not clearly known. Hence, the researcher is interested in determining the extent business education lecturers apply web-based instructional technologies in teaching in Delta State.

Purpose of the Study

Specifically, the study sought to determine the extent to which:

1. Business education lecturers in tertiary institutions in Delta State apply web-based instructional technologies in teaching.

Research Question

1. To what extent do business education lecturers in tertiary institutions in Delta state apply web-based instructional technologies in teaching?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. Male and female respondents do not differ significantly in their mean ratings on the extent they apply web-based instructional technologies in teaching.
2. There is no significant difference in the mean ratings of respondents in universities and colleges of education on the extent they apply web-based instructional technologies in teaching.

Method

The study adopted a descriptive survey design. The area of study was in Delta State. The entire population of 122 business educators was used for the study without sampling. A structuredquestionnairecontaining15 items based on the research question was used for data collection. A pilot study on 10 business educators was conducted in Edo State. Split half method using Spearman Brown Prophecy formula was used to determine the reliability of the instrument which gave a reliability coefficient of 0.89.Mean and standard deviation were used to answer the research question, while the z-test was used to test the null hypotheses at 0.05 level of significance. Mean ratings between 0.50 - 1.49 were regarded as very low extent, 1.50 - 2.49 were regarded as low extent, 2.50 - 3.49 were regarded as moderate extent, - 4.49 were regarded high extent and mean ratings between 4.50 5.00 were regarded as very high extent. For the hypotheses, any item with z-calculated value greater than the critical value was rejected, otherwise the hypothesis of no significance difference was not rejected for theitem.

Results

Research Question 1

To what extent do business education lecturers in tertiary institutions in Delta State apply web-based instructional technologies in teaching?

Data collected in respect of this research question were analyzed and the results are presented inTable 1.

Table 1:
Respondents' mean ratings on the extent of their application of web-based instructional technologies inteaching
(N = 122)

S/N	Web Based Instructional Techniques	$\bar{X}$	SD	Remarks
1.	Podcast	1.37	0.82	Very lowexten
2.	Mobile learning	3.21	0.98	Moderate extent
3.	Weblogging	2.41	0.79	Low extent
4.	Social Networking Tools	3.30	0.98	Moderate extent
5.	RSS live feed	2.36	0.76	Low extent
6.	Wikis	2.21	0.73	Low extent
7.	Internet Telephony	2.16	0.63	Low extent
8.	Electronic mail	3.00	0.75	Moderate extent
9.	Electronic Portfolio	2.25	0.71	Low extent
10.	Cloud Computing	1.39	0.70	Very lowextent
11.	Webcasting	1.24	0.51	Very lowextent
12.	Live Virtual Classrooms	2.25	0.69	Low extent
13.	Interactive Whiteboards	2.07	0.68	Low extent
14.	Electronic Bulletin Boards	2.21	0.66	Low extent
15.	Internet Relay Chat	3.00	0.72	Moderate extent
	Cluster Mean	**2.30**		**Low extent**

Data in Table 1 show that only four out of the 15 web-based instructional technologies with mean ratings ranging from 3.00 to 3.30 were applied by respondents at a moderate extent. Eight items with mean values ranging from 2.07 to 2.41 were applied at a low extent while the rest with mean values ranging from 1.24 to 1.39 were applied at a very low extent. The cluster mean of 2.30 indicates that business education lecturers in tertiary institutions in Delta state apply web-based instructional technologies in teaching at a low

extent. The standard deviations for the items are within the same range which shows that the respondents were homogeneous in their opinions.

Hypothesis 1
Male and female respondents do not differ significantly in their mean ratings on the extent they apply web-based instructional technologies in teaching.
This null hypothesis was tested using z-test at 0.05 level of significance and the results are

presented in Table 2.
Table 2:
z-test summary analysis of the application of web-based instructional technology by male and female respondents

Gender	N	$\bar{X}$	SD	α	df	z-cal	z-crit	Remark
Male	68	1.99	0.37					
				0.05	120	0.49	1.96	Not significant
Female	54	1 .96	0.30					

The result in Table 2 shows that male respondents (68) had a mean response of 1.99 and a standard deviation of 0.37 while the female respondents (54) had mean response of 1.96 and a standard deviation of 0.30. The calculated z-value of 0.49 is less than the z-critical value of 1.96 at 0.05 level of significance and 120 degree of freedom. This reveals no significant difference and therefore, the null hypothesis is accepted. This means that male and female respondents do not differ significantly in their mean ratings on the extent they apply web-based instructional technologies in teaching.

Hypothesis 2
There is no significant difference in the mean ratings of respondents in universities and colleges of education on the extent they apply web-based instructional technologies in teaching.
This null hypothesis was tested using z-test at 0.05 level of significance and the results are presented in Table 3

Table 3:
z-test summary analysis of the application of web-based instructional technology by respondents based on institutional type

Institution type	N	$\bar{X}$	SD	α	df	z-cal	z-crit	Decision
University	9	2.11	0.74					
				0.05	120	0.59	1.96	NS
Colleges of education	113	1.96	0.63					

The result presented in Table 3 shows that the calculated z value of 0.59 is less than the critical z value of 1.96 (0.59 < 1.96) at 0.05 level of significance and 120 degree of freedom. This means that respondents from university and colleges of education do not differ significantly in their mean ratings on the extent they applied web-based instructional technologies in

teaching and the null hypothesis is not rejected.

Discussion of Findings

Findings of the study revealed that business education lecturers in tertiary institutions in the area of the study applied web-based instructional technologies in teaching at a low extent. This finding tallies with that of Adedoyin, Akinnuwesi and Adegoke (2008) which stated that the application of web-based technology in Nigerian tertiary institution is less than five percent. The outcome of this study also agreed with the findings of Nwanewezi and Isifeh-Okpokwu (2008) who averred that there was little application of web-based technologies by business educators for instructional delivery.

The study revealed that web-based instructional technologies such as e-mail, m-learning and social networking tools are applied for teaching but at a minimal rate. This supports, Nwanewezi and Isifeh-Okpokwu (2008) that most teachers whose schools were supplied with internet facilities do not apply internet technologies for educational purpose.The application of web-based instructional technologies in teaching to a low extent was reported by Uwaifo and Uwaifo (2009) on the premise that web-based technologies and facilities are inadequately supplied and that lecturers lacked adequate competencies for using them where they are provided.

The study also found no significant difference in the mean ratings of respondents on the extent they applied web-based instructional technologies in teaching as a result of gender. This finding supports Yusuf (2005) who reported that there is no significant difference between male and female teachers in the application of ICT in teaching. It also agrees with Adeshina, Udoh, Ndomi and Aliyu (2013) who reported that there was no significant difference between male and female business (secretarial) educators in the application of internet technologies for classroom delivery. Correspondingly, Okeke, Ezenwafor and Umoru (2012) discovered that male and female business educators share the same view on the extent of their application of ICTs and web technologies on students' learning in tertiary institutions in Nigeria.

Conclusion

Based on the findings of the study, it was concluded that graduates of business education programmes would lack the requisite competencies to cope with the current wave of technological trends shaping today's business world. Therefore, business education lecturers should be given adequate preparation with an enabling web-based infrastructure to enable them stay abreast and advance in instructional delivery in order to produce graduates fitted for the modern technological oriented business world.

Recommendations

Based on the findings of the study and conclusion drawn, the following recommendations are made:

1. Business education lecturers should engage in self-sponsorship training programmes in private computer centers and cybercafé to enable them learn and acquire web-based technology competencies for effective teaching of business courses via the web environment.
2. Business education lecturers and students should make efforts to own Personal Computers (PC), internet enabled mobile phones and other internet powered gadgets to supplement gross inadequacies of web-based instructional technologies in the school system to achieve individualized instruction in the teaching and learning process of business education.

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