FACTORS LIMITING THE USE OF E-LEARNING FOR STAFF DEVELOPMENT IN ENVIRONMENTAL SCIENCE IN RIVERS STATE UNIVERSITY

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ABSTRACT

E-learning involves the use of electronic and technological media to give instruction to students. E-learning is currently practiced in most countries of the world as a means of teaching various courses. This research work looks at factors limiting the use of e-learning for staff development in environmental science in Rivers State University. Two research questions were used in the study. The researchers used survey research design for the study. The researcher used a population of twelve (12) lecturers in the department of environmental science in Rivers State University. The entire population is used as sample for the study.The instrument reliability was calculated to be 0.87 using test-retest methods. The data obtained from the research question was analyzed using simple mean. The findings of the study reveals that department of environmental science in Rivers State University lacked some e-learning facilities needed for teaching and learning and lecturers in the department of environmental science in Rivers State University do not know how to handle or use e-learning facilities in teaching courses in environmental science. Based on the findings, it was recommended that amongst others that Seminars and training programs should be organized by the school in training staff on the use of e-learning equipments and facilities.

KEYWORDS: *E-Learning and Environmental Science*

1. INTRODUCTION

E- Learning is an advanced technological means of delivering instructions in an educational setting. E-learning has advanced greatly as a means of first hand method for distance education. Most tertiary institutions in the world are adopting new technologies through distance education to reach out for students in terms of training and manpower development. The computer has become significant in the development of e-learning in the world. The use of computer in education can be classified into four types, namely; computer assisted instruction (CAI), computer-managed instruction (CMI), Computer based Multimedia (CBM) and computer mediated communication (CMC). The computer mediated communication is used for computer-to-computer transactions including email which in some cases is described as online e-learning (Kawachi, 2008).

According to Aranda (2007), E-learning is a term used to describe any learning environment that is computer enhanced. Demiray (2010) indicated that E-learning offers many opportunities for individuals and institutions all over the world in educational innovation. In traditional educational setting, the students' assimilation of knowledge, excluding other factors, always depend on how well the teacher or lecturer passed the knowledge. With E-learning as a focus, the teacher no longer becomes the point of concentration only, but both teacher and students especially, who take advantage of technology to varied resources of knowledge and made available by existing technology.

The concept of Information Communication Technology has made the world a global village. The trend of development in this current society is influenced by ICT (Offor 2013). Scholars with the help of ICTs are now able to communicate and send messages across the continent without barriers of distance and time constraints. Information is freely sort and received within the shortest possible time. Libraries and resource materials are prepared in digital form and are accessible to researchers all over the world. Information Communication Technology has as well opened doors for both small and big businesses to be carried out across the globe. With the use of simple telephone, transaction of business can be achieved without the stress and risks of travelling from one country to another. Also, education can be affordable and easy to access irrespective of the discipline.

1.1 Structure

The significance of E-Learning in Environmental Science

In the field of education, the need for ICTs is equally overwhelming. Information and Communication Technology (ICT) has been identified worldwide as tool that can accelerate and promote teaching and learning (National Policy for Information Technology, 2001). The use of Microsoft word for processing documents and telecommunications systems like telephones, email, internet and World Wide Web, GSM can make students and lecturers to be more active and productive in the classroom (Gusen, Olarinnonve & Garba, 2005). In looking

at the influence of information in teaching and learning, Radloff (2001) highlights the opportunities that ICT presents for enhancing the quality of teaching and learning to include: Providing encouragement for staff and students to reflect on how they teach and learn.

Environmental science is well suited to the use of ICT for learning. As environmentalist have applied constructivist method to problem-based learning (e.g. Bradbeer & Livingstone, 1996; Halvorson & Westcoat, 2002) and cooperative or collaborative learning (e.g. Livingstone & Lynch, 2002), they have often demonstrated a desire to use better pattern to learning and teaching and have been fast to acknowledge the value that technology can provide. Using information technology effectively allows students to grapple with real-world problems, access appropriate information quickly and easily, share their ideas with their fellow students (facilitating group work), and construct new knowledge and meaning for themselves in a relevant, interesting context.

E-tools which aid environmentalist to visualization include animations to explore and explain difficult dynamic concepts or events along with cartographic and GIS technologies to assist in observing patterns and processes and virtual field trips. According to Serafin (2005) e-tool encourages presentation of:

- Dynamic computer animated fly-through,
- Video footage of various sites to be visited (including animation of the use of field equipment),
- Dynamic graphing of quantitative information collected in the field,
- Annotation of images to show geographic features,
- Aims, objectives, preparatory readings, citations, and bibliographic resources,
- Logistical information and joining instructions".

According to Cox & Su (2004), wherever students are located or in the presence of a teacher, they can have the field trip experience electronically. Virtual field e-learning materials or virtual worlds/simulations also fit well with the increasing trend in universities to explore the 'teaching–research' nexus (Parolin, 2003) and the co-learning approach re-linking research and teaching in geography as outlined by Le Heron et al. (2006).

The benefits of using e-learning tool include the use of mobile technologies for delivery of multimedia materials and interactive tasks, the opportunity for independent and collaborative learning experiences, the incentive for students to actively participate in lectures and to assist learners to remain more focused for longer. Mobile technologies such as GPS, mobile phones and PDAs also enable student researchers to connect with field sites and can make field data more accessible, for example, through field-related websites (McCaffrey et al., 2003). Data repositories and libraries are important to e-learners in environmental science. There is an interesting variety of source materials that geography makes use of for both teaching and research. The interdisciplinary nature of the discipline often means that geographers are very high users of libraries and data repositories and other e-learning resources.

Purpose of the study

The study looked at factors limiting the use of e-learning for staff development in environmental science in Rivers State University. Specifically, the study sought to find:

1. The extent to which e-learning facilities are available in the department of environmental science.
2. The extent to which lecturers can handle e-learning facility in teaching environmental science.

Research Questions

The researchers adopted the following research questions that guided the study:

1. What are the e-learning facilities available in the department of environmental science?
2. To what extent can lecturers handle e-learning facility in teaching courses in environmental science?

Methods

The researchers used survey research design for the study. The researcher used a population of twelve (12) lecturers in the department of environmental science in Rivers State University. The entire population is used as sample for the study. The researcher developed an instrument titled 'Lecturers Response on the Use and Availability of E-Learning Facility' (LRUAEF). The instrument is a four point rating scale consisting of 8 items. The instrument was subjected to validation by two experts in the department of environmental science in Nnamdi Azikiwe University, Awka. The instrument reliability was calculated to be 0.87 using test-retest methods. The data obtained from the research question was analyzed using simple mean.

1.2 Tables

Research Questions 1

What are the e-learning facilities available in the department of environmental science?

Table 1: Mean Response of Lecturers on the Availability of E-learning Facilities.

S/NO	ITEM	MEAN	REMARK
1	Over head projector available	2.10	Reject
2	Laptops available	2.30	Reject
3	ICT room available	2.35	Reject
4	Internet Facilities available	2.40	Reject
5	Audio-visual/Electronic Media available	1.90	Reject

Data obtained from research question one, table 1, revealed that items 1, 2, 3, 4 and 5 were all rejected to the various questions. This shows that the department of environmental science in Rivers State University lacked some e-learning facilities needed for teaching and learning.

Research Questions 2

To what extent can lecturers handle e-learning facility in teaching courses in environmental science?

Table: Mean Response of Lecturers on the use of E-Learning in Environmental Science

S/NO	ITEM	MEAN	REMARK
6	Lecturers can operate over head projector in classes	1.10	Reject
7	Lecturers can effectively use laptops in classrooms	1.95	Reject
8	Lecturers can use internet facilities to teach	2.30	Reject

Data obtained from research question two, table 2, revealed that items 6, 7 and 8 were all rejected to the various questions. This shows that lecturers in the department of environmental science in Rivers State University do not know how to handle or use e-learning facilities in teaching courses in environmental science.

Summary of Findings

Based on the result obtained, the following are the summary of findings:

1. Department of environmental science in Rivers State University lacked some e-learning facilities needed for teaching and learning.
2. Lecturers in the department of environmental science in Rivers State University do not know how to handle or use e-learning facilities in teaching courses in environmental science.

Discussion of Results on Table 1 And 2

Results obtained from table 1 showed that the faculty of environmental science in Rivers State University lacked some e-learning facilities needed for teaching and learning. This is in line with the view of Nwankwoala, (2015) that despite the importance of ICTs in every aspect of human life including education and national development, many academic staff and students of Nigerian Universities do not seem to appreciate this importance and as such appear not to use them in teaching and learning.

Table 2 revealed that lecturers in the faculty of environmental science in Rivers State University do not know how to handle or use e-learning facilities in teaching courses in environmental science. This is in support of the statements of Adejoh and Ozoii (2005) that some of the obstacles in Nigeria that affects the utilization of ICTs in teaching and learning include; low level of ICT literacy among teachers, dearth of technical staff, low level of funding, irregular power supply, high cost of ICT facilities and lack of relevant ICT infrastructures.

Conclusion

In all, the study was able to describe the state of e-learning in the faculty of environmental science in Rivers State University. The finding of the study reveals that the faculty of environmental science in Rivers State University lacked some e-learning facilities needed for teaching and learning. Also, the faculties of environmental science in Rivers State University do not know how to handle or use e-learning facilities in teaching courses in environmental science.

Recommendations Based On Findings

Based on the findings of the study, the following recommendations were made:
1. Seminars and training programs should be organized by the school in training staff on the use of e-learning equipments and facilities.
2. The government should equip and maintain existing e-learning facilities in the schools.

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