

Assessing the Constraints in the Application of E-learning by Secondary School Teachers in Bayelsa State, Nigeria

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Abstract: This study investigated the constraints in the application of e-learning in secondary schools in Bayelsa State, Nigeria. The study adopted a descriptive survey research design. Four hundred (400) teachers in public secondary schools were used as the sample for the study. The instrument for data collection was self-developed questionnaires titled, 'Teachers' Constraints in the Application of E-learning Tools' (TCAET) and 'Strategies for Improving E-learning Application by Teachers' (SIEAT). The study revealed constraints and strategies in the application of e-learning in secondary schools in Bayelsa State, Nigeria. It was recommended among other things that, the government should embark on a massive computer training program for teachers. Teachers should be trained and retrained through in-service training, seminars, workshops and conferences for acquisition of the knowledge and skills needed for e-learning application in secondary schools in Bayelsa State, Nigeria.

Keywords: Constraints, Application, E-learning, Teachers, Bayelsa State

1. Introduction

E-learning (EL) is the use of Information and Communication Technology e.g. Internet, Computer, Mobile phone, Learning Management System (LMS), Televisions, Radios and others to enhance teaching and learning activities. E-learning is a unifying term used to describe the fields of online learning, web-based training and technology delivered instructions [1]. In this age of Information and Communication Technology (ICT), there is growing concern for the use of ICT resources such as the computer, scanner, printer, Intranet, Internet, e-mail, videophone systems, teleconferencing devices, wireless application protocols (WAP), radio and microwaves, television and satellites, multimedia computer and multimedia projector in curriculum implementation. In e-learning, curriculum content in the form of texts, visuals, e.g. pictures, posters, videos, audio/sound, multicolor images, maps, and graphics, can be simultaneously presented online to students in both immediate locations (classroom model of e-learning) and

various geographical distances (Distance Education model of e-learning).

Fry [2] and Wild et al. [3] describe E-learning as the delivery of training and education via networked interactivity and distribution technologies. Other authors notably [4]; [5] and [6] see e-learning simply as learning and communication exercises across computers and networks or for that matter any other electronic sources.

E-learning refers to the use of information and communication technology (ICT) to enhance and/or support learning in tertiary education. However this encompasses an ample array of systems, from students using e-mail and accessing course materials online while following a course on campus to program delivered entirely online. E-learning can be different types, a campus-based institution may be offering courses, but using E-learning tied to the Internet or other online network [7].

1.1. Statement of Problem

The importance of education is increasing because of

increasing pressure to catch up with the developed world regarding, for example, global competitiveness. The call for application of e-learning in secondary education is to infuse and inject efficiency and effectiveness in curriculum implementation. However, in developing countries like Nigeria, e-learning is challenged with the problem of material devices such as computer, computer laboratories, internet and e-mail facilities, videophone systems and teleconferencing devices, fax and wireless applications, digital library, digital classrooms, multimedia systems and the problem of multimedia courseware development among others. Other studies such as [8] indicated that there is dearth of trained teachers for e-learning, lack of facilities, infrastructures and equipment.

The problem is that e-learning in secondary education is challenged by the new technologies in terms of availability and use. It is against this background that the present study is carried out to determine the constraints in the application of e-learning tools by secondary school teachers in Bayelsa State, Nigeria. Secondly, it seeks to identify possible strategies for improving e-learning application by teachers in secondary schools in Bayelsa State, Nigeria.

1.2. Purpose of the Study

The main purpose of the study is to assess the constraints hindering the application of e-learning by secondary school teachers in Bayelsa State, Nigeria

Specifically, the study examines:

1. The constraints militating against the effective application of e-learning tools by teachers in secondary schools in Bayelsa state, Nigeria.
2. The strategies for improving e-learning application by teachers in secondary schools in Bayelsa State, Nigeria.

1.3. Research Questions

The following research questions were formulated to guide this study:

1. What are the constraints militating against the effective application of e-learning tools by teachers in secondary schools in Bayelsa state, Nigeria?
2. What are the strategies for improving the use of e-learning materials by teachers in secondary schools in Bayelsa State, Nigeria?

2. Methods

The study employed a survey research design. The population was 820 teachers selected from public secondary schools in five local governments out of the eight local governments in Bayelsa State. (The sample for the study was comprised of 400 teachers who were randomly selected from the total population of 820 teachers. The instrument for data collection was self-developed questionnaires titled, 'Teachers' Constraints in the Application of E-learning Tools' (TCAET) and 'Strategies for Improving E-learning Application by Teachers' (SIEAT). It was structured on a

four-point scale. The face and content validation of the instrument were established by two experts each in Teacher Education and Measurement and Evaluation Units of the Department of Teacher Education at Niger Delta University, Wilberforce Island, Bayelsa State. The reliability of the instrument was determined using the Pearson Product Moment Correlation. A reliability coefficient of 0.87 was obtained, an indication that the instrument was reliable for data collection. The copies of the questionnaire that were administered by the researcher were returned and used for computation. The data collected were analyzed using frequency distribution and mean.

2.1. Results

Research question 1: What are the constraints militating against the effective application of e-learning tools by teachers in secondary schools in Bayelsa state, Nigeria?

Table 1. Mean Responses on the Constraints Militating against the effective application of E-learning tools by Teachers in Bayelsa State, Nigeria.

S/N	Items	X	Decision
1.	Lack of computer laboratories.	3.51	Agree
2.	Dearth of trained teachers for e-learning.	3.30	Agree
3.	Lack of facilities.	3.41	Agree
4.	Inadequate infrastructures and equipment.	3.55	Agree
5.	Internet and e-mail facilities.	3.60	Agree
6.	Lack of digital libraries.	3.87	Agree
7.	Inadequate funding	3.50	Agree
8.	Lack of standby generators for regular power supply.	3.38	Agree

N = 400

Source: Field Survey 2016

Table 1 addresses research question 1 on the constraints militating against the effective application of e-learning tools by teachers in secondary schools in Bayelsa State, Nigeria. The table shows that all the respondents agreed that all the variables such as lack of computer laboratories, dearth of trained teachers for e-learning, lack of facilities, inadequate infrastructures and equipment, internet and e-mail facilities, lack of digital libraries, inadequate funding, lack of standby generators for regular power supply are constraints militating against the effective application of e-learning tools by teachers in secondary schools in Bayelsa State, Nigeria.

Research question 2: What are the strategies for improving the use of e-learning materials in secondary schools in Bayelsa State?

Table 2. Mean Responses on the Strategies for Improving E-learning Applications among Teachers in Bayelsa State, Nigeria.

S/N	Items	X	Decision
1.	Massive computer literacy program for teachers.	3.51	Agree
2.	Adequate provision of online computers/e-mail.	3.30	Agree
3.	Connection of classrooms/Auditorium to the internet.	3.41	Agree
4.	Procurement of multimedia systems.	3.55	Agree
5.	Provision of incentives for courseware development.	3.60	Agree

S/N	Items	X	Decision
6.	Provision of digital libraries.	3.87	Agree
7.	Employment of computer technicians for routine repairs.	3.50	Agree
8.	Provision of standby generators for regular power supply.	3.38	Agree
9.	Provision of security for safeguarding e-learning materials.	3.37	Agree
10.	Training & retraining of teachers through seminars, workshops, and/or conferences.	3.24	Agree

N = 400

Source: Field Survey 2016

Table 2 addresses research question 2 on the strategies for improving e-learning applications by teachers in secondary schools in Bayelsa State, Nigeria. The table shows that all the respondents agreed that all the variables such as massive computer literacy program for teachers, adequate provision of online computers/e-mail, connection of classrooms/Auditorium to the internet, procurement of multimedia systems, provision of incentives for courseware development, provision of digital libraries, employment of computer technicians for routine repairs, provision of standby generators for regular power supply, provision of security for safeguarding e-learning materials, training & retraining of teachers through seminars, workshops, and/or conferences are strategies for improving the use of e-learning materials in secondary schools in Bayelsa State, Nigeria.

2.2. Discussion of Findings

Research question 1, table 1 indicates that vast majority of the respondents agreed that all the items are such as lack of computer laboratories, dearth of trained teachers for e-learning, lack of facilities, inadequate infrastructures and equipment, internet and e-mail facilities, lack of digital libraries, inadequate funding, lack of standby generators for regular power supply are constraints militating against the effective application of e-learning tools by teachers in secondary schools in Bayelsa State, Nigeria. This finding is in line with Akpotohwo, Yabrifa and Ogeibiri [8] that dearth of trained teachers for e-learning, lack of facilities, inadequate funding, inadequate infrastructures and equipment militate against the implementation of vocational and technology education in Niger Delta University, Wilberforce Isalnd, Bayelsa State Nigeria.

Research question 2, table 2 indicates that the vast majority of respondents agreed that all the items massive computer literacy program for teachers, adequate provision of online computers/e-mail, connection of classrooms/Auditorium to the internet, procurement of multimedia systems, provision of incentives for courseware development, provision of digital libraries, employment of computer technicians for routine repairs, provision of standby generators for regular power supply, provision of security for safeguarding e-learning materials, training & retraining of teachers through seminars, workshops, and/or conferences are strategies for improving the use of e-learning materials in secondary schools in Bayelsa State.

The findings agree with Sundarajan [9], Evoh [10], and Nwana [11] that teachers should have adequate training for computer education.

3. Conclusion

From the findings it was concluded that some constraints militate against the effective application of e-learning tools by teachers in secondary schools in Bayelsa state, Nigeria and also the necessary strategies to tackle the problems was proposed.

Recommendations

Based on the findings, the following recommendations were made

1. Federal and state government should embark on a massive computer literacy training program nation-wide particularly for teachers and learners at all levels. This should be accomplished through in-service training of teachers, workshops, seminars, and conferences.
2. For students computer education should be a compulsory subject at all levels in secondary schools at the state and federal level.
3. All classrooms and auditoriums in the State should be connected to the internet in order to enhance web-based instruction.

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