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The Feasibility of using E-Learning System for Educational Delivery in Post Covid-19 Era: A Case Study of Selected Public Secondary Schools in Niger-Delta, Nigeria

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ABSTRACT

The study aims at exposing the problems, expectations and limitations of using e-learning in for educational delivery in Niger-Delta states of Nigeria. Five hundred (500) teachers in public secondary schools across five states in the region was used as sample for the research. A self-structured questionnaire on the availability of e-learning tools was used for data collection, the questionnaire contained 27 items. The reliability co-efficient of the instrument stood at 0.92 The data collected were analyzed using frequency distribution, mean and chart. The findings revealed that there is shortage of e-learning tools such as Internet, computers, email facilities, multimedia, scanners, printers, digital cameras, among others. The available computers, scanners and printers are not optimally utilized because most of the teachers studied are not ICT compliance. With the enormous benefits the introduction of e-learning platforms can offer in this time of post Covid-19, it is quite unfortunate that developing countries like Nigeria Education will still suffer setback. The work recommends massive training and retraining of teachers through short courses, seminars, workshops and conferences in order to acquire the needed knowledge and skills to improve the quality of e-learning course delivering in public schools in Nigeria.

Keywords: E-learning, E-mail, internet and Secondary Schools.

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1. INTRODUCTION

Electronic learning (E-Learning) popularly called e-learning has moved to the lime light in educational delivery (Bhuasiri *et al.*, 2012) due to its flexible lecture delivery pattern. E-learning is simply a learning form in which ICT Facilities are used. It is also regarded as the acquisition of knowledge and skill without stress (borderless learning) using electronic technologies such as computer, internet-based software and local and wide area networks Nicholson, 2007. Moreover, in Higher Education arena, it refers to the situation where learning is accomplished over Internet-based delivery of contents and programs (Luminița & Magdalena, 2012; Olakulehin & Salawu, 2006). It is a form of lecture delivery which can be provided through any appropriate electronic media such as the mobile phone, television, radio, etc. but for the context of this research, we will be considering basically synchronous form of e-learning which allow interactivity between the learning content and the learners (Osuji & Amadi, 2020).

In Nigeria, e-learning is still in early stage of adoption, and our challenges are unique compared to developed countries (Bhuasiri *et al.*, 2012). So deliberate efforts are being made to conform to the technology and policy for implementing e-learning. Moreover, most e-learning adoption in Nigeria has been observed mainly in higher institutions of learning, secondary schools are making efforts to adopt ICT tools for their educational delivery because of lack of facilities, technical knowhow, security and electrical challenges as highlighted by Aduwa-Ogiegbaen & Iyamu (2005) and Aboderin & Kumuyi (2013) in Ondo. Despite the minimal adoption, the implementation of e-learning has not gone unchallenged, the challenges have been accountable for the small adoption percentage usage, abandonment, and failure of e-learning projects (Nigerian education in emergency work group, EiEWG, 2020). Nigerian education in emergency work group).

The report by National Council for Science and Technology (2010) identified that many schools had not started using computers in their classes hence their student missing out ICT benefits like access to educational contents, sharing of information and networking with other students worldwide to share educational materials. However, ICT seems to have penetrated in other sectors like communications, banks, medical services and transportation more and rapidly than in the educational sector in Nigeria. This study seeks to investigate the factors mitigating against the adoption of e-learning in public schools in Nigeria.

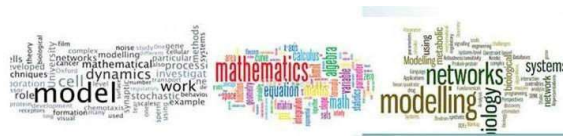
The purpose of this study is to explore the factors mitigating against the adoption of e-learning as a means of Educational delivery in public schools in Niger-Delta states, Nigeria.

- i. Examines the availability of e-learning tools for curriculum development.
- ii. Examine the ability and level of usage of e-learning tools by tutors.
- iii. Examine the strategies for maintaining and improving e-learning facilities.
- iv. The prospects of e-learning as effective tool for learning and teaching delivery.

Objectives

The following specific objectives guided the study:

- i. To investigate the impact of technological infrastructure on the adoption of e-learning.
- ii. To investigate the influence of e-learning curricula on the adoption of e-learning.
- iii. To investigate the readiness of teacher in adopting e-learning.



Research Questions

- i. What are the e-learning tools available to public secondary school tutors in the area for Educational delivery?
- ii. What is the level of utilization of available e-learning tools by tutors?
- iii. What strategies being put in place to improve the level of e-learning utilization in public schools?
- iv. Can E-learning platform be successfully used for educational delivery during this post Covid-19 Era?

2. RELATED WORKS

Torruam (2012) opined that E-learning has every sign of long survival as long as the digital device components are readily and more available. That implies that the availability of these devices would make them more afforded and wide acceptance of the technology by the general public, hence the multimedia applications will prosper. The sustainability of quality education delivery will increasingly rely on various forms of electronic delivery systems and communication devices that are available in the IT markets. These are required to make education to be flexible in the 21st century.

Eke (2011) opined that the drift in education has led to a paradigm shift from teacher centeredness to learner centeredness through to subject centeredness. This implies that the teacher can no longer decide what to be learnt but rather the interests of the learners do so and determine how they should learn it (Ngeze, 2017), Fernández-Manjón *et al.* (2007) stated that e-learning allows a learner-controlled self-paced education environment where the learners have authority over the learning environment; there by allowing the learners to work on their pace, convenience access and assessment.

Osuji & Amadi (2020), the use of ICTs for effective e-learning leads to a range of educational opportunities to help students develop needed skills essential to their countries. E-Learning further leads to student learning, teaching, administration, family, home, social, community, and economic development. Also, Jeung & Ciganek (2012) summarized the benefits e-learning to include, an increased accessibility to information, better content delivery, personalized instruction, content standardization, accountability, on-demand availability, self-pacing, interactivity, confidence, and increased convenience.

Obiakor & Adeniran (2020) opined that the Nigerian education sector is not yet ready and will struggle on adapting distance learning systems. Furthermore, social-economic burden will be highly more on students in the public schools as compared to those in private school. This is because the government is limited by funds and proper planning, this situation was also confirmed by Jeung & Ciganek (2012) study in Anambra State in Nigeria. This means the public schools cannot embrace distance learning in the presence of covid-19 pandemic presently ravaging the world.

Ed TechHub (2020) did a survey which shows that secondary schools education is likely to be most disadvantage by Covid-19 pandemic because of issues over access to laboratory and completing syllabus may arise.



3. METHODOLOGY

A survey research design method was employed. The surveyed population was 500 teachers randomly selected from different secondary schools across the Niger-Delta region of Nigeria. Personally developed questionnaire titled: The Feasibility of using E-learning as a tool for delivering education in public schools in post covid-19 pandemic Era was investigated. The data collected were analyzed using standard deviation, mean and frequency distribution. The decision rule for scaling was based on mean point scale. 478 properly filled questionnaires and returned was used for the analysis, 9 was not returned and 13 was not properly filled (therefore, 22 questionnaires were discarded)

4. RESULTS AND DISCUSSIONS

Research Question I. What are the e-learning tools available to public secondary school tutors in the area for Educational delivery?

Table 1: Responses on E-learning Tools Availability Table (N=478)

S/N	E-LEARNING FACILITIES	Available (A)	Partially Available (PN)	Not Available (NA)	Partially Not Available (PNA)	Mean of Response	REMARK
1	Computers	445	18	10	5	3.87	A
2	Printers	402	20	50	6	3.53	A
3	Scanners	302	66	70	40	3.07	A
4	Digital Library	4	0	470	2	1.05	NA
5	Projectors	0	8	455	15	1.02	NA
6	E-mail Facility	5	3	470	0	1.01	NA
7	Internet Facility	0	0	478	0	1.00	NA
8	Telephone/wireless Applications	0	0	478	0	1.00	NA
9	Ready-made courseware: CD-Rom, etc	0	6	441	31	1.60	NA
10	Computerized White Boards	0	6	472	0	1.05	NA

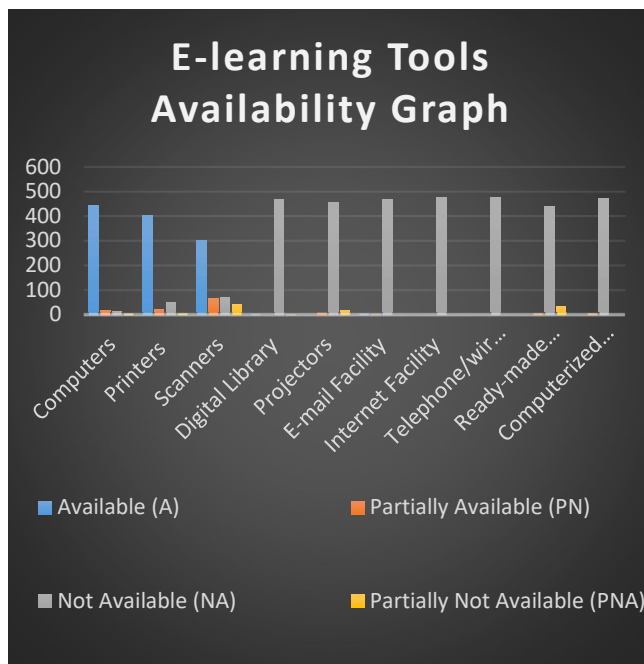


Figure 1: E-learning Tools Availability Graph

The column ‘Remark’ in Table 1 is explained thus; A: Available Items, PA: Partially Available items, these are items that are available but not put to use, NA: Not Available Items and PNA: Partially Not available items, these are items that are available but not functional or not in a good working condition. As stated by Nwana (2012) and Torruam (2012) in their research, it is obvious that only computers, printers and scanners are available to secondary schools, all other items are not available. From the table, some of the available items are either not in a good working conditions or are kept safely and are only switched-on during inspections. If these e-learning items has not been in use according to Obiakor & Adeniran (2020), it will be difficult to put them in use in the outbreak of Covid-19 pandemic.

Research Question II: What is the level of utilization of available e-learning tools by tutors?

Table 2: Table showing the Responses on Available e-learning tools and their Level of utilization by Tutors (N=478)

S/N	E-Learning Facilities	In Use	Partially In Use	Not In Use	Partially Not In Use	Mean Responses	of	REMARK
1	Computers	0	5	453	20	1.02		Not In Use
2	Printers	0	10	450	18	1.07		Not In Use
3	Scanners	0	0	478	0	1.00		Not In Use

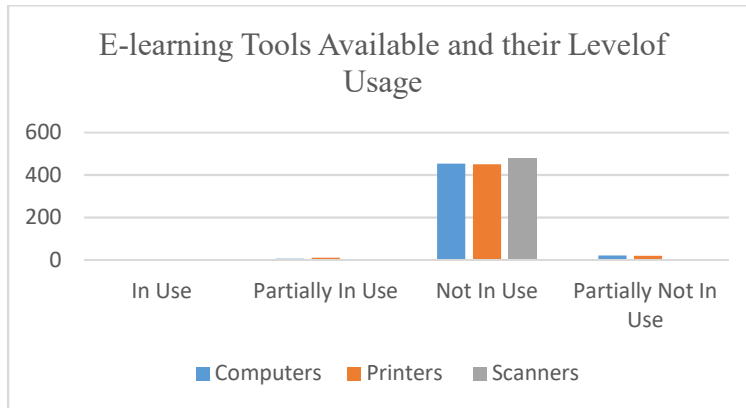


Figure 2: E-learning Tools Available and their Level of Usage Graph

Aduwa-Ogiegbaen & Iyamu (2005) confirms our outcome of Table 2 and Figure 2, that the available most common few E-learning tools in secondary schools are computers, printers and scanners but these items are either not in good working conditions or are not made available to teachers and students.

Research Question III: What strategies being put in place to improve the level of e-learning utilization in public schools?

Table 3: Responses on Strategies to Improve E-learning Usage (N=478)

S/N	Strategies to be Adopted	Supported	Partially Supported	Not Supported	Partially Not Supported	Mean of Response	Remark
1	Granting Teachers some levels of access to E-learning tools	465	3	0	10	3.98	Supported
2	Trainings and re-training to upgrade teacher's usage of E-learning facilities	478	0	0	0	3.98	Supported
3	Giving Teacher access to internet	461	5	0	2	3.90	Supported
4	Provision of online computers/e-mail facilities	478	0	0	0	3.98	Supported
5	Digital Library should be put in public schools	478	0	0	0	3.98	Supported
6	Inclusion of ICT programs in teacher's training curricula	487	0	0	0	3.98	Supported
7	Employ expertise for Maintenance and Technical Support	478	0	0	0	3.98	Supported
8	Provision of electricity in public schools	478	0	0	0	3.99	Supported
9	Provision of adequate security to safe guard E-learning tools	441	6	0	31	3.23	Supported

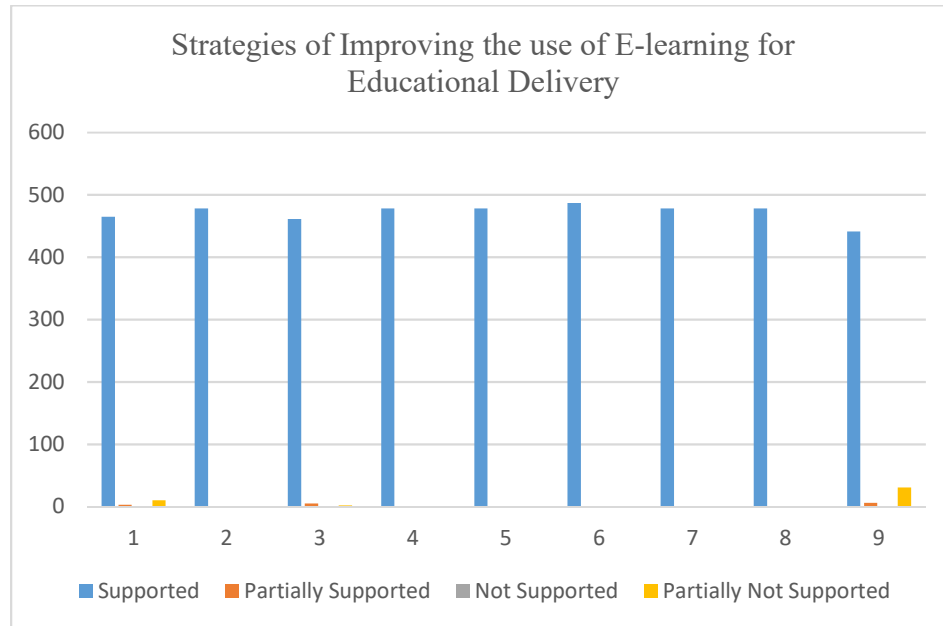


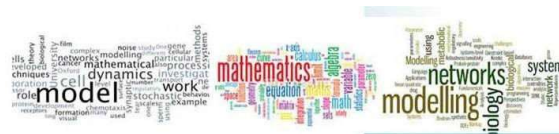
Figure 3: Strategies of improving the use of E-learning for Educational Delivery

The research question 3 is addressed in table 3 by highlighting some basic measures to be put in place so e-learning platform can be used in education delivery in this post Covid-19 pandemic situation. Ngeze (2017) in Tanzania suggested some of these strategies for their schools and Nigerian education in emergency work group (EiEWG, 2020) made some recommendations as well, Figure 3 shows that most respondent fully supported the strategies suggested.

Research Question 4: Can E-learning platform be successfully used for educational delivery in public secondary school during this post Covid-19 Era?

Table 4: Responses on the use of E-learning Platform for Educational delivery in Post Covid-19 Era (N≤98 per State)

S/N	E-Learning For Educational Delivery	Agree	Disagree	Mean of Response	Remark
1	Can E-learning platform replace traditional learning system in Delta State?	5	89	3.98	Totally Disagree
2	Can E-learning replace traditional learning pattern in Rivers State?	10	87	3.98	Totally Disagree
3	Can E-learning replace traditional learning pattern in Bayelsa State?	5	93	3.90	Totally Disagree
4	Can E-learning replace traditional learning pattern in Edo State?	10	86	3.98	Totally Disagree
5	Can E-learning replace traditional learning pattern in Cross Rivers State?	13	80	3.98	Totally Disagree



6. RECOMMENDATIONS

Ministry of Education (at both Federal and State levels) should post teachers skilled in ICTs to each public school and teachers should be trained on the use of e-learning tools in educational delivery. Also the Federal Ministry of Power, works and housing should work towards stabilizing electricity supply in Nigeria, and all public schools should be made beneficiaries of ICT projects.

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