

Challenges of Utilizing E-Learning Facilities for Promoting Evidence-Based Teaching in Public Secondary Schools in Rivers State

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Abstract

The study examined the challenges of utilizing e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State. Three objectives and three research questions were raised to guide the study while three null hypotheses were formulated and tested at 0.05 level of significance. The researcher adopted the descriptive survey research design for the study. The population of the study consists of 1,943 teachers from public secondary schools in Port Harcourt and Obio/Akpor Local Government Areas of Rivers State. The Taro Yamane sample size determination method was used to determine the sample of 308 teachers in Obio Akpor Local Government Area and 241 teachers in Port-Harcourt Local Government Area of Rivers State totaling 549 respondents. Data for the study were gathered through the use of a self-designed questionnaires titled: "Challenges of Utilizing E-learning Facilities and Evidence-based Teaching Questionnaire". The questionnaire was validated by three experts, two in Educational Management and one in Measurement and Evaluation all from the Faculty of Education in Rivers State University. The reliability of the instrument was established and the computation yielded a reliability coefficient of 0.82. The collected data was used for analysis. Mean and standard deviation were used to answer the research questions, while the hypotheses were tested using z-test at 0.05 level of significance. The findings of the study revealed that inadequacy of e-learning facilities, poor access to internet facilities, shortage of electronic teaching tools, inadequate ICT training and inadequacy of skilled personnel can constitute challenge towards the promotion of evidence-based teaching in public secondary schools in Port Harcourt Local Government Area of Rivers State. It was recommended that the government of the day should intervene by providing the public secondary schools in Port Harcourt Local Government Area of Rivers State with adequate e-learning facilities that will help the administrators overcome the challenge that come with the utilization of e-learning facilities for evidence-based teaching.

INTRODUCTION

Electronic learning is the utilization of technology to deliver solutions that enhance knowledge and performance. Electronic learning facilities can be utilized to improve the adequacy of teaching through evidence-based teaching. This is because electronic learning contributes immensely towards any educational advancement and also brings about learning effectiveness. Some of these online learning platforms help secondary school students with their studies and learning by improving the communication between them and the instructors. Nwuke and Innocent, (2021) opined that there are challenges and concerns as a result of knowledge explosion due to the introduction of ICT in almost every field of human endeavor, which calls for an awakening in teaching profession likewise.

Electronic learning technologies have the potential to transform the nature of education where and how learning takes place and the roles of students and teachers in the learning process. This transformation that is inherent in the utilization of e-learning technologies appear to bring about a reasonable growth in digital information which changes the way secondary school students perceive study and learning and how online learning resources are used to facilitate the study habit of the students (Mbah, 2020).

Electronic-learning involves the utilization of computers, internet and other telecommunication technology in every aspect of human endeavour (Agbetuyi & Oluwatayo, 2022; Oluwatayo, 2022). These scholars further asserted that e-learning is simply about sharing and gaining access to data with less difficulty. It could also be seen as the super highway via which information is conveyed and shared by individuals around the globe. Before the advent of evidence-based teaching, instructors had to depend largely on personal experience, professional judgment, past practices, established conventions and other subjective factors to make decisions about how and what to teach all of which could potentially be inaccurate, misguided, biased, or even detrimental to students.

Evidence-based teaching which is also referred to as evidence-based education is a concept that holds that educational practices should be based on the best available scientific evidence rather than tradition, personal judgment or other influences. Evidence-based teaching in the view of Garside (2021) is a concept whose essence is to give the teachers an adequate confidence that what they are actually teaching in the classroom is efficacious, adequate and capable of bringing about the desired outcome which is the instructional objectives. Thus, there is no gainsaying that evidence-based teaching is pertinent for all levels of experience and education. This is so because, without this approach, it becomes cumbersome for the teacher to truly phantom whether or not the students are benefitting from the class lesson contents (Garside, 2021).

Evidence-based teaching is a teaching approach that is predicated on informed research which also makes judicious use of what research as a discipline can offer especially in terms of conceptual framework for thinking about a problem and tools for critical-reflective practice. Engaging in evidence-based teaching provides teachers with the requisite exposure to ideas and concepts they

might not ordinarily come across and this enhances their breadth and depth of understanding. This approach gives teachers the requisite positive approach towards research and inquiry-based teaching endeavours (Saunders, 2020). Evidence-based teaching is a concept that has come to concretize and cement the interconnectivity between teaching and research in our modern day dispensation. It makes for the ease of the utilization of e-learning facilities necessary for modern day teaching in the classroom.

However, some of these e-learning facilities required for modern day teaching in the classroom include: a desktop computer, Universal Serial Bus (USB) or Wireless Fidelity (WiFi) access for device connectivity, a projector with interactive whiteboard functionality or television screen connectivity, a visualizer for presenting the feedback, tablet devices for the lecturers and students (e.g. iPad), recording hardware/software for podcasting (e.g. microphone, headphone and speakers), a digital camera for showcasing work in film or photographs and a few show-off gizmos (e.g. data-logging, remote control, among others) (McGill, 2021). Affirming and collaborating with the facilities as listed above, the Medical Education Partnership Initiative (nd.) also added video teleconferencing facilities and computer laboratories as other kinds of e-learning facilities that could be required for the promotion of evidence-based teaching. Also, Weerasinghe and Jayasinghe-Mudalige (2020) identified some of the e-learning facilities that are necessary for the promotion of evidence-based teaching to include the following; personal computers, electronic mail, internet facilities, information system softwares (e.g. Transaction Processing Systems, Office Automation Systems, etc), network facilities, websites, digital conferencing softwares and world wide webs.

The institutionalization of e-learning facilities into modern day teaching has indeed, engendered a significant deviation from the usual approaches that were hitherto teacher centered to one of the contemporary methods which is evidence-based teaching. However, the gains of such a new approach has been extolled by Buabeng-Andoh (2022) who affirmed the great capabilities of utilizing e-learning facilities in the spreading of knowledge, making education more real and the development of more efficient educational services. The utilization of e-learning facilities in the classroom for evidence-based teaching creates more inclusive learning atmosphere which ignites interaction between the teacher and the students thereby removing passivity (Ibeh, Adamu & Owoseni, 2020).

Similarly, Olorundare (2020) asserted that the utilization of e-learning facilities is very significant so far as the process of teaching is concerned. This is so because it guarantees unrestricted access of teachers to relevant information and development in subject areas as well as the deployment of efficient and effective instructional delivery strategies to take care of students' academic needs and individual differences. Through the utilization of e-learning facilities, best educational teaching practices such as the evidence-based teaching can be harnessed. Utilization of e-learning facilities also make it possible for academic institutions to reach disadvantaged groups and new international educational markets (Ghavifekr & Rosdy, 2020; Arnseth & Hatlevick, 2022; Jamieson-Procter, Albion, Finger, Cavanagh, Fitzgerald, Bond & Grimbeek, 2023).

The use of e-learning facilities for evidence-based teaching in public secondary schools has the potentials to accelerate, enrich, and deepen skill; to motivate and engage students in learning to help relate school experiences to work practices; to help create economic viability for tomorrow's workers, contribute to radical changes in school; to strengthen teaching and provide opportunities for connection between the school and the world. This phenomenon has given birth to the contemporary e-commerce, e-government, e-medicine, e-banking and e-education among others. Agbetuyi and Oluwatayo (2022), and Oluwatayo (2022), summed it up to say that e-learning involves the utilization of electronic facilities such as; computers, internet and other telecommunication technology in the educational process.

It was further stressed that through the use of e-learning facilities for evidence-based teaching, educational needs can be met and it also changes the needs of education as well as the potential processes. For instance, e-learning is becoming one of the most common means of using information communication technology to provide education to students both on and off campus by means of teaching online offered via web-based systems. Although e-learning facilities have been looked upon as tools for uplifting the standard of education in any nation, the level of compliance in implementing the utilization of e-learning facilities in the instructional development process leaves much to be desired in Nigerian education system (Ajayi, 2000; Ajayi & Ekundayo, 2009; Olorube, 2000; Olorunsola, 2000). The utilization of e-learning facilities for evidence-based teaching in secondary schools can actually mark a paradigm. This positive deviation tends to signal the end of the teacher being perceived as the sole repository of knowledge especially with the availability of numerous amount of information on the internet and the worldwide web (Ajayi, 2021; Ajayi & Olayungbo, 2024).

In view of the above, it is pertinent to note that e-learning is an indispensable part of secondary education as its application makes the schools to be more efficient and productive, thereby engendering a variety of tools to enhance and facilitate teachers' pedagogical activities. Although ICT resources have been looked upon as tools for uplifting the standard of secondary education in any nation through evidence-based teaching, the level of compliance in implementing the utilization of the e-learning facilities in the implementation of evidence-based teaching leaves much to be desired (Ajayi, 2000; Ajayi & Ekundayo, 2009; Olorube, 2000). Therefore, it is safe to assert that evidence-based teaching through the utilization of e-learning facilities demands that the teacher possesses and displays some basic ability to organize, co-ordinate and utilize personal qualities, objectives and competency in lesson preparation, presentation and evaluation. Besides, the teacher must be able to motivate the learners, make students active participants in learning, use appropriate strategies and facilities to enhance effectiveness in instructions.

In the same vein, some of the challenges facing the use of electronic learning facilities for evidence-based teaching encompass the following issues; lack of computers, shortage of internet facilities, students' lack of access to e-learning facilities and tools, high cost of software and erratic power supply. Consequently, it is also reported that the perceived constraints facing the use of e-learning facilities for evidence-based teaching are; inadequate e-learning facilities or equipment, frequent electricity interruption and poor implementation of extant policies governing the

utilization of e-learning facilities in secondary education generally (Okoro, 2023). Njoku (2020) in collaboration with the perception of Okoro (2023) also stated that the absence of proper funding does not only hamper the implementation of utilization of e-learning facilities in secondary education but also affects education as a whole. Aboderin and Kumuyi (2023) also revealed in their study that the perceived challenges discouraging the use of online platforms for online educational purposes may involve the following issues viz; shortage of online teaching and assessment tools such viz; internet, computer, e-mail facilities, multimedia, scanner, printer, among others.

Similarly, Ohaka and Akpomi (2020) also highlighted the following e-learning challenges in secondary school education to include: lack of knowledge and skill of the students, lack of equipment required for the enhancement of the utilization of e-learning facilities, poor handling and maintenance culture of the facilities, low level of internet accessibility and the insufficiency of fund. They also observed that; paucity or lack of computers and information and communication technologies software, lack of personal or self-confidence and students' resistant attitude to necessary change which is dynamic and lack of time for learning and professional development are some of the challenges that negatively influences the use of e-learning facilities for evidence-based teaching in education. Top ranking indices among the challenges of utilizing e-learning facilities for evidence-based teaching are: the lack of professional development for teachers, financial constraints, pedagogical issues constraints, lack of sustainable professional development for teachers (Nagel, 2023). It was also maintained that insufficient training and retraining of teachers, lack of maintenance of the existing equipment, inadequate equipment and infrastructure deficit are among the challenges hampering the use of e-learning facilities for evidence-based teaching (Gbadamosi, 2009).

Statement of the Problem

It is obvious that the use of electronic-learning facilities has a great influence on evidence-based teaching among secondary school teachers as seen in our contemporary society today (Ohaka & Akpomi, 2020). Aboderin and Kumuyi (2023) discovered that shortage of electronic learning facilities such as: internet, computers, e-mail facilities, multimedia, scanner, printer and VCD player constituted one of the problems in the use of electronic learning facilities for evidence-based teaching. More problematic and worrisome is the fact that even in some instances where few of these facilities may be available, they are not sometimes judiciously utilized because in some cases it appeared that some of the teachers and students are insufficiently skillful and knowledgeable in the areas of computer application, sometimes the available e-learning facilities are inadequate, teachers are given good access to internet facilities, there is shortage of electronic teaching tools and inadequacy of e-learning training among teachers. Sequel to these perceived problems in the educational enterprise, it appears that some teachers encounters the difficulties in trying to deliver instructions to students which affect their overall performance in the classroom.

Purpose of the Study

The goal of this study was to examine the challenges of utilizing e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State. Specifically, the study sought to:

1. determine the extent inadequacy of e-learning facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State;
2. ascertain the extent poor access to internet facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State;
3. examine the extent shortage of electronic teaching tools can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State;

Research Questions

The following research questions were raised and they guided the study:

1. To what extent does inadequacy of e-learning facilities constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State?
2. To what extent does poor access to internet facilities constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State?
3. To what extent does shortage of electronic teaching tools constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State?

Hypotheses

The following null hypotheses were tested at 0.00 level of significance:

1. There is no significant difference in the mean responses of male and female teachers on the extent inadequacy of e-learning facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State.
2. There is no significant difference in the mean responses of male and female teachers on the extent poor access to internet facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State.
3. There is no significant difference in the mean responses of male and female teachers on the extent shortage of electronic teaching tools can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State.

Theoretical Framework

The Technological Acceptance Model (TAM), proposed by Davis in (1909)

The Technological Acceptance Model (TAM), proposed by Davis in (1909) as cited in Nwuke (2023). The theory is used to understand how users come to accept and use technology. It has been particularly influential in fields like education, business, and communication, offering a structured approach to studying why individuals adopt or resist new technologies. Davis developed this model with the aim of explaining the factors that influence technology acceptance, focusing on how perceptions shape a user's willingness to engage with technological tools.

TAM identifies two primary factors that drive an individual's decision to use a particular technology. The first factor, Perceived Usefulness (PU), refers to the degree to which a person believes that using a specific technology will enhance their job performance or make tasks more efficient. In the context of education, for example, teachers may choose to adopt e-learning platforms if they perceive that these tools will improve their teaching effectiveness, enhance students' learning experiences, or save time in lesson preparation and grading. Essentially, if the technology is seen as beneficial and capable of yielding better results than traditional methods, the likelihood of its adoption increases.

The second factor, Perceived Ease of Use (PEOU), focuses on how easy or difficult an individual believes it will be to use the technology. This aspect emphasizes the importance of usability in promoting technology adoption. If the technology is perceived as simple and user-friendly, with minimal effort required to learn or operate, individuals are more likely to use it. Conversely, if it is viewed as complex or difficult to navigate, this can serve as a significant barrier to acceptance, even if the technology is considered useful. In educational settings, teachers and students may be more inclined to use e-learning platforms if they find them intuitive, with easy access to resources and a straightforward interface.

Beyond these two primary factors, TAM also considers external variables such as training, technical support, and organizational culture, which can influence both Perceived Usefulness and Perceived Ease of Use. For instance, if teachers in a school receive adequate training on how to use e-learning tools, they are more likely to feel comfortable and confident in using them, increasing their perception of ease. Similarly, if the school administration actively supports the integration of technology into teaching practices, this can enhance teachers' perception of the usefulness of these tools, encouraging broader acceptance and utilization.

The Technological Acceptance Model is highly relevant to this study on the challenges of utilizing e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State. The model provides a valuable insight through which to examine the factors influencing teachers' and students' adoption of e-learning technologies. Specifically, it can help explain why certain teachers or students are reluctant to use these facilities, despite the potential benefits for enhancing teaching and learning outcomes.

By applying TAM, you can investigate whether teachers perceive e-learning platforms as useful for improving instructional practices and fostering evidence-based teaching. If the perception of usefulness is low, it may indicate that teachers either do not see the value of these platforms or are unaware of their potential for enhancing the teaching process. Understanding this perception is crucial for addressing adoption challenges and promoting the effective use of e-learning tools. Similarly, TAM can be used to assess how easily teachers and students find e-learning platforms

to use. If there are significant barriers related to ease of use, such as lack of technical skills, inadequate training, or poor user interface design, these issues can hinder the successful integration of e-learning into the teaching process. By identifying these barriers, schools can implement targeted interventions, such as professional development programs, to increase the comfort level of educators and students when using digital tools.

Again, TAM provides a comprehensive framework for understanding the factors that impact the adoption of e-learning technologies in public secondary schools. By focusing on Perceived Usefulness and Perceived Ease of Use, the model helps to identify the key challenges that may hinder the effective integration of e-learning facilities into evidence-based teaching practices. Addressing these challenges can significantly improve the utilization of technology, leading to better teaching and learning outcomes.

METHODOLOGY

The researcher adopted the descriptive survey research design for this study. The population of this study comprises 1,943 teachers from public secondary schools in Port Harcourt and Obio/Akpor Local Government Areas of Rivers State. This includes 401 male teachers and 1,402 female teachers, all drawn from 42 public senior secondary schools in these areas. The Taro Yamane sample size determination method was used to determine the sample of 300 teachers in Obio Akpor Local Government Area and 241 teachers in Port-Harcourt Local Government Area of Rivers State totaling 549 respondents. The Non-Proportional Stratified Random Sampling Technique was adopted for the study since it was drawn in order to study a relatively finite population that is heterogeneous in nature. Data for this study was garnered through the means of a self-structured questionnaire. The questionnaire was titled: “Challenges of Utilizing E-learning Facilities and Evidence-based Teaching Questionnaire (CUEFEQ)”. The test yielded reliability coefficients of 0.86, 0.85, 0.83, 0.82, and 0.88 with the average reliability coefficient of 0.85 which showed the instruments were reliable. The researcher administered 549 copies of the questionnaire to the respondents. Out of the 549 copies of questionnaire distributed, only 400 representing 87% were retrieved and this proportion was used for the analysis. The data to be collected was analyzed using descriptive statistics such as mean and standard deviation for the research questions while the hypotheses was tested using the z-test statistics.

RESULTS

Research Question 1: To what extent can inadequacy of e-learning facilities constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt Local Government Area?

Table 4.1: Mean and Standard Deviation Scores on the Extent to which Inadequacy of E-Learning Facilities can Constitute a Challenge to the Utilization of E-learning Facilities for Promoting Evidence-Based Teaching in Public Secondary Schools in Port Harcourt and Obio/Akpor Local Government Area of Rivers State

S/N	Items	Male Teachers		Female Teachers		Average	Remark
		Mean	Std.	Mean	Std.		
1.	It makes it increasingly difficult for me to practice research-based teaching through the use of ICT facilities.	3.70	0.46	3.41	1.05	3.56	High Extent
2.	I find it difficult to use electronic facilities during teaching in the classroom via evidence-based teaching.	3.82	0.39	3.59	0.95	3.71	High Extent
3.	Due to the insufficiency of electronic facilities, I find it challenging to deploy the use of evidence-based teaching.	3.72	0.57	3.35	1.03	3.54	High Extent
4.	I am not able to promote research-based teaching in the classroom because of the scarcity of ICT facilities.	3.15	0.75	2.78	0.98	2.97	High Extent
5.	My poor performance in the use of evidence-based teaching is based on the facts that electronic facilities are not enough.	3.44	0.69	3.11	0.79	3.28	High Extent
Grand Mean		3.57		3.20		3.41	High Extent

Source: Field Survey, 2024

Data presented in Table 4.1 above shows the mean ratings and standard deviations of male and female teachers on the extent to which the inadequacy of e-learning facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt and Obio/Akpor Local Government Areas of Rivers State. The data indicates that the mean ratings of male teachers for items 1 to 5 are: 3.70, 3.82, 3.72, 3.15, and 3.44, while the mean ratings for female teachers are: 3.41, 3.59, 3.35, 2.78, and 3.11 respectively. The specific challenges highlighted include difficulties in practicing research-based teaching (mean = 3.55), obstacles in utilizing electronic facilities during classroom instruction (mean = 3.71), and challenges in deploying evidence-based teaching due to insufficient electronic resources (mean = 3.54).

Furthermore, the mean scores suggest that male teachers perceive the challenges posed by inadequate e-learning facilities slightly more than their female counterparts. The grand means are

3.57 for male teachers and 3.25 for female teachers, with an average mean of 3.41. This indicates that inadequacy of e-learning facilities constitutes a challenge to the utilization of these resources for promoting evidence-based teaching in public secondary schools in Port Harcourt and Obio/Akpor Local Government Areas of Rivers State, Nigeria.

Research Question 2: To what extent can poor access to internet facilities constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt Local Government Area?

Table 4.2: Mean and Standard Deviation Scores on the Extent to which poor access to internet facilities constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt and Obio/Akpor Local Government Area of Rivers State

S/N	Item	Male Teachers		Female Teachers		Average	Remark
		Mean	Std.	Mean	Std.	Mean	
6.	Internet network instability negatively affects my capacity to teach in the classroom using evidence-based teaching.	3.23	0.86	3.00	1.04	3.12	High Extent
7.	It discourages me from applying the evidence-based teaching method via ICT utilization.	3.31	0.78	3.13	0.93	3.22	High Extent
8.	It promotes the reduced utilization of ICT facilities by the teachers for evidence-based teaching.	3.30	0.79	3.13	0.94	3.22	High Extent
9.	It brings about the relative inaccessibility of ICT facilities for proper.	3.24	0.83	3.18	0.97	3.21	High Extent
10.	. It brings about high level of inadequacy on the use of electronic facilities for the facilitation of teaching by doing.	3.31	0.74	3.16	0.96	3.24	High Extent
Grand Mean		3.28		3.12		3.20	High Extent

Source: Field Survey, 2024

Data presented in Table 4.2 above shows the mean ratings and standard deviations of male and female teachers on the extent to which poor access to internet facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt and Obio/Akpor Local Government Areas of Rivers State. The data indicates that the mean ratings of male teachers for items 6 to 10 are: 3.23, 3.31, 3.30, 3.24, and 3.31, while the mean ratings for female teachers are: 3.00, 3.13, 3.13, 3.18, and 3.16, respectively. The specific challenges highlighted include the negative impact of internet network instability on teaching capacity (mean = 3.12), discouragement in applying evidence-based teaching methods

via ICT (mean = 3.22), and reduced utilization of ICT facilities due to poor internet access (mean = 3.22).

Furthermore, the mean scores suggest that male teachers perceive the challenges posed by poor access to internet facilities slightly more than their female counterparts. The grand means are 3.28 for male teachers and 3.12 for female teachers, with an average mean of 3.20. This indicates that poor access to internet facilities constitutes a challenge to the utilization of e-learning resources for promoting evidence-based teaching in public secondary schools in Port Harcourt and Obio/Akpor Local Government Areas of Rivers State, Nigeria.

Research Question 3: To what extent can shortage of electronic teaching tools constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt Local Government Area?

Table 4.3: Mean and Standard Deviation Scores on the Extent to which poor access to internet facilities constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt and Obio/Akpor Local Government Area of Rivers State

S/N	Item	Male Teachers		Female Teachers		Average Mean	Remark
		Mean	Std.	Mean	Std.	Set	
11.	Lack of e-teaching tools makes it difficult for me facilitate evidence-based teaching in the classroom.	3.17	0.88	3.12	0.96	3.15	High Extent
12.	Scarcity of e-teaching tools discourages the use of electronic facilities for practicing evidence-based teaching.	3.62	0.60	3.43	0.82	3.52	High Extent
13.	Deficiency in e-teaching tools makes it burdensome for me to teach using evidence-based teaching method.	3.49	0.71	3.19	1.06	3.34	High Extent
14.	Dearth of e-teaching tools reduces availability of facilities necessary for the use of evidence-based teaching.	3.49	0.68	3.10	1.03	3.30	High Extent
15. It	Absence of e-teaching tools brings about the poor utilization of evidence-based teaching methods in the classroom.	3.23	0.74	2.03	0.99	2.98	High Extent
Grand Mean		3.40		3.11		3.20	High Extent

Data presented in Table 4.3 above shows the mean ratings and standard deviations of male and female teachers on the extent to which a shortage of electronic teaching tools can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt and Obio/Akpor Local Government Areas of Rivers State.

The data indicates that the mean ratings of male teachers for items 11 to 15 are: 3.17, 3.62, 3.49, 3.49, and 3.23, while the mean ratings for female teachers are: 3.12, 3.43, 3.19, 3.10, and 2.03, respectively. Specific challenges highlighted include difficulty in facilitating evidence-based teaching due to the lack of e-teaching tools (mean = 3.15), discouragement in using electronic facilities for evidence-based teaching because of scarcity (mean = 3.52), and the burdensome nature of teaching using evidence-based methods due to deficiencies in e-teaching tools (mean = 3.34).

Additionally, the mean scores suggest that male teachers perceive the challenges associated with a shortage of e-teaching tools more strongly than their female counterparts. The grand means are 3.40 for male teachers and 3.11 for female teachers, with an average mean of 3.20. This indicates that a shortage of electronic teaching tools constitutes a significant challenge to the utilization of e-learning resources for promoting evidence-based teaching in public secondary schools in Port Harcourt and Obio/Akpor Local Government Areas of Rivers State, Nigeria

Hypotheses Testing

Hypothesis 1: There is no significant difference in the mean responses of male and female teachers on the extent inadequacy of e-learning facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State.

Table 4.4: z-test Analysis on the Extent Inadequacy of E-Learning Facilities can Constitute a Challenge to the Utilization of E-Learning Facilities for Promoting Evidence-Based Teaching in Public Secondary Schools in Rivers State.

Respondents	N	\bar{X}	SD	Df	SL	z-cal.	z-crit.	Decision
Male Teachers	194	3.57	0.57	476	0.05	9.55	1.96	Accepted
Female Teachers	282	3.20	0.96					

Source: Researcher's Field Study (2024)

From Table 4.4 above, it is observed that the calculated z-value of 9.55 is greater than the z-critical value of 1.96. Hence, the null hypothesis is accepted, meaning that there is no significant difference in the mean responses of male and female teachers on the extent inadequacy of e-learning facilities

can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State.

This indicates that both male and female teachers agree to a high extent that inadequacy of e-learning facilities constitutes a challenge to the utilization of these resources for promoting evidence-based teaching in public secondary schools in Rivers State.

Hypothesis 2: There is no significant difference in the mean responses of public secondary school teachers in Port-Harcourt Local Government Area, Rivers State on the extent poor access to internet facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State.

Table 4.5: Summary of z-test analysis on the extent to which poor access to internet facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State

Respondents	N	\bar{X}	SD	Df	SL	z-cal.	z-crit.	Decision
Male Teachers	194	3.28	0.80	476	0.05	9.01	1.96	Accepted
Female Teachers	282	3.12	0.97					

From Table 4.5 above, it is observed that the calculated z-value of 9.01 is greater than the z-critical value of 1.96. Hence, the null hypothesis is accepted, meaning that there is no significant difference in the mean responses of male and female public secondary school teachers in Port Harcourt Local Government Area on the extent poor access to internet facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State. This suggests that both male and female teachers in the area agree that poor access to internet facilities constitutes a significant challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State.

Hypothesis 3: There is no significant difference in the mean responses of public secondary school teachers in Port-Harcourt Local Government Area, Rivers State on the extent shortage of electronic teaching tools can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State.

Table 4.6: Summary of z-test analysis on the extent to which shortage of electronic teaching tools can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State

Respondents	N	\bar{X}	SD	Df	SL	z-cal.	z-crit.	Decision
Male Teachers	194	3.40	0.72	476	0.05	6.55	1.96	Accepted
Female Teachers	282	3.11	0.97					

From Table 4.6 above, it is observed that the calculated z-value of 6.55 is greater than the z-critical value of 1.96. Hence, the null hypothesis is accepted, meaning that there is no significant difference in the mean responses of male and female teachers on the extent shortage of electronic teaching tools can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State. This suggests that both male and female teachers in Port Harcourt Local Government Area agree to a high extent that the shortage of electronic teaching tools is a challenge to the effective utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Rivers State.

Discussion of Findings

Inadequacy of E-learning Facilities as a Challenge to the Utilization of E-learning Facilities for Promoting Evidence-based Teaching

The result in Table 4.1 above shows the extent to which inadequacy of e-learning facilities can constitute a challenge to the utilization of e-learning facilities for the promotion of evidence-based teaching in public secondary schools in Port Harcourt Local Government Area of Rivers State. The findings showed that inadequacy of e-learning facilities makes it increasingly difficult for the teacher to practice research-based teaching through the use of ICT facilities, teachers find it difficult to use electronic facilities during teaching in the classroom via evidence-based teaching, due to the insufficiency of electronic facilities, teachers find it challenging to deploy the use of evidence-based teaching, teachers are not able to promote research-based teaching in the classroom because of the scarcity of ICT facilities and the poor performance of teachers in the use of evidence-based teaching is based on the fact that electronic facilities are not enough. The tested hypothesis shows that there is a significant difference in the mean responses of senior secondary school teachers on the extent to which inadequacy of e-learning facilities constitutes a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt. This finding is in consonance with the study of Newhouse, (2022) who asserted that poor choices of hardware and software and lack of consideration of what is suitable for classroom teaching are problems facing many teachers. It also aligns with the work of Nwuke.

& Vulasi, (2020) that Irregular Power Supply, Inappropriate maintenance of ICT facilities and services, Lack of qualified personnel to manage ICT software and hardware in the schools, Poor Government policies to coordinate use of ICT in teaching and administration, Inadequate funding to set ICT facilities, insufficient ICT support staff, and Fatigue and stress associated with the use of ICT are constraints facing the effective use of ICT in the administration of public senior secondary schools in Rivers state.

Cox, Preston & Cox (2021) who found out that majority of teachers agreed that insufficient e-learning facilities in the schools and insufficient time to review software prevent teachers from using e-learning facilities for the promotion of evidence-based teaching in secondary schools. It was also identified that teachers' reluctant to the use of innovative technology, lack of motivation, lack of finance, delay in processing documents, lack of skilled personnel and of limited time were the mid-level problems.

Poor Access to Internet Facilities as a Challenge to the Utilization of E-learning Facilities for Promoting Evidence-based Teaching

The result in Table 4.2 above shows the extent to which poor access to internet facilities can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt Local Government Area of Rivers State. The findings of the study showed that internet network instability negatively affects the teachers' capacity to teach in the classroom using evidence-based teaching, it discourages the teacher from applying the evidence-based teaching methods, it promotes the reduced utilization of ICT facilities by the teachers for evidence-based teaching, it brings about the relative inaccessibility of ICT facilities and it brings about high level of inadequacy on the use of electronic facilities for the facilitation of teaching by doing. Amie-Ogan, and Osuji, C. U. (2016) agreed that the availability of digital instructional materials showed paucity of digital instructional materials viz: scanners, tablets, examination scoring machines, printers, multimedia classroom (audio-visual), and classroom models. The findings of the tested hypotheses also showed that there is a significant difference in the mean responses of senior secondary school teachers on the extent to which poor access to internet facilities constitutes a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt. This finding is in line with the work of Kamba (2009) who found out that one of the significant factor that can constitute a challenge to the utilization e-learning facilities for the promotion of evidence-based teaching is slow access to websites due to narrow bandwidth and limited numbers of computers connected to the internet.

Shortage of Electronic Teaching Tools as a Challenge to the Utilization of E-learning Facilities for Promoting Evidence-based Teaching

The result in Table 4.3 above shows the extent to which shortage of electronic teaching tools can constitute a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt Local Government Area of Rivers State. The findings of the study revealed that lack of e-teaching tools makes it difficult for the teacher to

facilitate evidence-based teaching in the classroom, scarcity of e-teaching tools discourages the teacher from using electronic facilities for practicing evidence-based teaching, deficiency in e-teaching tools makes it burdensome for the teacher to teach using evidence-based teaching method, dearth of e-teaching tools reduces availability of facilities necessary for the use of evidence-based teaching method and absence of e-teaching tools brings about the poor utilization of evidence-based method in the classroom. The findings of the tested hypotheses also showed that there is a significant difference in the mean responses of secondary school teachers on the extent to which shortage of electronic teaching tools constitutes a challenge to the utilization of e-learning facilities for promoting evidence-based teaching in public secondary schools in Port Harcourt. This finding is in-tandem with the work of Kamba (2009) who stated that electronic teaching tools is very important for the promotion of evidence-based teaching through the use of e-learning facilities as the students will tend to take their online study very seriously if the necessary material necessary for them to work with are made readily available and handy. Therefore, it is important to state that it is essential that we make e-learning facilities always readily available and in full supply considering how significant e-learning is to the enhancement of overall classroom teaching in this modern day dispensation.

Conclusion

Based on the findings of the study, the researcher concluded that inadequacy of e-learning facilities can constitute a challenge in the promotion of evidence-based teaching in public secondary schools in Port Harcourt Local Government Area of Rivers State; poor access to internet facilities can constitute a challenge in the promotion of evidence-based teaching in public secondary schools in Port Harcourt Local Government Area of Rivers State; shortage of electronic teaching tools can constitute a challenge in the promotion of evidence-based teaching in public secondary schools in Port Harcourt Local Government Area of Rivers State; inadequacy of ICT training can constitute a challenge in the promotion of evidence-based teaching in public secondary schools in Port Harcourt Local Government Area of Rivers State and inadequacy of skilled personnel can constitute a challenge in the promotion of evidence-based teaching in public secondary schools in Port Harcourt Local Government Area of Rivers State.

Recommendations

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

1. The government and relevant educational authorities should prioritize investments in e-learning infrastructure. This includes increasing the availability and quality of ICT facilities in public secondary schools to address the inadequacies identified by teachers.
2. Stakeholders, including internet service providers and local government, should work collaboratively to enhance internet connectivity in schools. This could involve the establishment of more reliable internet services and the provision of subsidies or funding for schools to access better internet plans.
3. School administrators should actively seek resources to acquire sufficient electronic teaching tools (e.g., projectors, interactive whiteboards, and tablets). Initiatives such as partnerships with educational NGOs and private sectors could help in procuring these essential tools.

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