



**UTILISATION OF E-LEARNING INNOVATIONS FOR INSTRUCTIONAL  
DELIVERY BY PUBLIC UNIVERSITY LECTURERS IN RIVERS STATE,  
NIGERIA**

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**Abstract**

This study examined utilisation of e-learning innovations for instructional delivery by public university lecturers in Rivers State, Nigeria. Two research questions guided the study and two null hypotheses were tested. A descriptive survey design was adopted for the study. The population of 3,165 lecturers in all the public universities in Rivers State was studied with a sample of 317, representing 10% of the entire population, using a stratified random sampling technique. A 4-point rating scale questionnaire was validated by experts and was used for data collection. Pilot test was used to establish the reliability of the instrument, with a Cronbach Alpha and a reliability coefficient value of 0.89 was obtained. Mean and standard deviation were used to answer the research question and determine the homogeneity of the respondents' views, while the hypotheses were tested with z-test at 0.05 level of significance. Findings revealed that the lecturers in public universities in Rivers State utilise e-learning innovations for instructional delivery to a low extent. Also, this low extent of utilization of these e-learning innovations are caused by some challenges they face as identified in this study. Based on the findings, it was concluded that inadequate utilisation of e-learning innovations in the university by lecturers is a major contributory factor to the ineffective instructional delivery of the current era. Consequently, it was recommended that management of the universities should sponsor their lecturers on short-term courses and conferences to equip them with competencies for e-learning utilisation to improve the quality of their instruction using e-learning innovations.

**Keywords:** Utilization, e-Learning Innovations, Instructional Delivery, University Lecturers

**Introduction**

Education is the cornerstone of human progress, a powerful catalyst that ignites the flames of innovation, creativity, and advancement. Its impact is multifaceted, far-reaching, and transformative, influencing not only individuals but also the very fabric of societies and nations. The relevance of education to individual and national development cannot be



overstated, as it is the key that unlocks the doors to a brighter, more prosperous future. Education empowers individuals by equipping them with the knowledge, skills, and competencies necessary to navigate the complexities of the modern world. It opens doors to new opportunities, broadens perspectives, and fosters critical thinking, problem-solving, and decision-making abilities. Through education, individuals can acquire the skills and expertise needed to secure better-paying jobs, improve their socio-economic status, and enhance their overall quality of life.

Education is also a critical driver of national development, as it plays a pivotal role in shaping the economic, social, and cultural landscape of a country. A well-educated population is better equipped to contribute to the growth and development of their nation, driving innovation, entrepreneurship, and economic growth. Education helps to promote social cohesion, reduce poverty and inequality, and foster a sense of national identity and unity. In today's increasingly interconnected and globalised world, education is more important than ever. It is the key to fostering global competitiveness, as it enables individuals and nations to stay ahead of the curve in terms of technological advancements, scientific discoveries, and innovative practices.

National development relies strongly on educational advancement, which in turn relies on technological advancement. Currently, global transformation in all spheres of life has ushered in new trends such as e-business, e-office and e-learning in solving diverse human problems. New patterns are utilised in the teaching and learning of different school subjects as a result of the emergence of e-learning. Utilization refers to making use of something in a purposeful and effective way. Azi and Nwosu as cited in Ezenwafor and Nwachukwu (2020) posited that utilisation is the degree to which a given group uses a particular service in a specified period. According to Lynch (2020), the utilisation of e-learning for instructional delivery is becoming more popular because it helps students to learn better. In the context of this study, utilisation is the employment of tools and services that will enhance practical, efficient and successful performance.

Furthermore, e-Learning which means electronic learning, refers to the use of electronic innovations to facilitate learning. It facilitates the development and transformation of skills and concept-based knowledge to deliver and make information speedily and at less cost. As posited by Anowor in Ezenwafor and Nwaokwa (2017), e-learning consists of the use of different Information Communication Technology (ICT) resources (hardware and software) with



instructional media to achieve learning at all levels and types of education. Adeoti and Adebayo (2021) asserted that e-learning is a ground-breaking approach for electronically delivering well-designed, learner-centered and interactive learning environments in either synchronous or asynchronous form. E-learning innovations are hard and software technologies which can be used to achieve academic objectives. Carroll (2021) defined e-learning innovations as a wide educational initiative mainly characterised by the utilisation of electronic media and other types of communication technologies which can be used to support teaching and learning.

In addition, Bupo and Ndinechi (2019) posited that e-learning innovations are digital educational resources which are developed into units that are reusable, adaptive and can be repurposed to different learning styles, knowledge levels and conditions. Jackson (2023) viewed e-learning innovations as technology-aided learning tools that blend both online and face-to-face learning approaches, which include hardware and software components like the internet, video conferencing, mobile technologies, CD/DVD, electronic learning platforms and their likes. Udegbumam (2022) maintained that e-learning resources consist of electronic media and devices used as tools for ameliorating access to training, communication and interaction, which adopt new ways to understand and develop learning.

In the context of this study, e-learning innovations refer to essential electronic tools (hardware and software) required for the achievement of a well-designed, interactive, student-centered instruction at all levels of learning in both formal and informal education in either synchronous or asynchronous form. Examples of some of these e-learning innovations according to Akubueze (2022), Bartee (2022), Ezenwafor and Nwaokwa (2021) include the following:

**Computers:** Computer software such as Word Processing, PowerPoint, CorelDRAW, Database Management, Microsoft Excel, as opined by Nwaokwa (2019), are used for instructional delivery, especially in the areas of speed development, accounting skills, document production, filing and record management. Techopedia (2022) established that word processing, which is one of computer software can be used by both lecturers and students to type, save, retrieve, view and edit documents such as assignments, term papers, research work, as well as documents attached to e-mails.

**Internet:** The internet facilitates quick information retrieval, dissemination, and storage. One of the major advantages of the internet, as disclosed by Agomuo (2021), is the availability and accessibility of a vast amount of data and information on any subject matter by anyone,



anytime, and anywhere. Akubueze (2022) affirmed that the internet improves research and helps students carry out their assignments and homework.

**YouTube:** This is a major online video sharing software which allows people to easily upload and share video clips across the internet through websites, mobile devices, blogs and e-mail. Lynch (2020) explained that YouTube helps students to learn new concepts better and assists in capturing the attention of the students who not only need to see but also to hear. Videos uploaded to YouTube can be easily embedded into most e-learning course content. Complicated subjects, which can be hard to explain with text or images alone, can be illustrated using videos from YouTube.

**Computer-Assisted Instruction (CAI):** This is an interactive instructional method whereby a computer is used to deliver instruction and monitor students' learning development. According to Khan (2019), CAI can record and store all the students' responses as well as decide what information is to be given to them next. Nwana (2018) established that CAI arouses the interest and maintains the attention of the learner from the beginning of the learning process to the end. It enhances individualisation of instruction, drill and practice which enhances mastery and learning outcomes. CAI is very suitable for learning Keyboarding and other skills in Word Processing and improves interactive learning.

**DVD/CD-ROM:** DVDs are external storage devices that can be used on any computer system with a CD-ROM drive. Nweke in Godwin-Maduike (2019) asserted that DVD/CD-ROMs can store educational materials such as textbooks, dictionaries, encyclopedias, lecture notes and classroom instructions, which can be used for effective teaching and learning.

**Interactive White Board (IWB):** This is a large electronic and interactive display board that connects to a computer, projector and internet and is usually mounted on a wall or floor stand, which is used for instructional delivery. Interactive whiteboards are used in a variety of settings, including classrooms at all levels of education for instructional delivery, workgroups, training rooms, workshops and seminars. It is highly suitable for students' project presentations and seminars (Onwukwe, Lekwa & Aliche, 2023).

**Video conferencing Device:** Video conferencing device is a collaborative communication device that allows individuals or groups to communicate in real time at different geographical locations where they can see and hear one another using computers and internet



communications. Onwukwe et al. (2023) emphasized that videoconferencing can be particularly effective in educational applications because interaction between people is usually different when they can see and hear each other. Otunuya (2022) posited that video conferencing can be used to conduct lectures in real time face-to-face interaction. Learners can record lectures which can later be used on demand for on demand lectures.

**PowerPoint:** This is one of the computer software according to Azuka (2022), that allows teachers and trainers to display their lessons on an overhead projector. It incorporates graphics, animation, sound effects, video, text, and charts which can be used by lecturers to facilitate instructional delivery. Russell (2018) noted that PowerPoint presentations are suitable for large classes as well as small groups for instructional delivery, training and other purposes.

**E-mail:** E-mail which means electronic mail, refers to emails sent through the internet with the aid of smartphones and computers. Agomuo (2021) noted that e-mails can be read, edited, stored, printed, deleted, or forwarded to the same or other recipients. It is fast and reliable, covering long distances in a matter of seconds. Lecturers can use email to deliver instruction, send lecture notes and educational information to students for effective instructional delivery. Students can also submit their assignments electronically to the lecturer and receive corrections through e-mail.

**Learning Management System (LMS):** This is a software application that enables lecturers to deliver instructions to students, administer tests and other assignments, track student progress, and manage record-keeping anytime and anywhere. Pappas (2022) established that LMS can be used for delivering, tracking, and managing training and education. Some LMSs help track data about attendance and identify progress towards learning. Lecturers can post announcements, grade assignments, check on course activity, and participate in class discussions with students via LMS.

**iLearn:** This is an amalgamation of several e-learning technologies designed to allow lecturers and students to interact as part of a flexible teaching and learning experience. Ojeaga and Igbiniedion (2022) opined that iLearn as an academic platform, can allow students to download learning materials such as PDF courseware, laboratory exercises, teaching slides, and ISO DVDs. Lecturers can utilize iLearn to support their courses or teach an entire class online.



**Flipped classroom:** A flipped classroom is a learner-centered instructional strategy and a type of blended learning whereby students are introduced to face-to-face interaction as well as online independent study outside of the classroom. Cabi (2018) noted that the flipped classroom has increased students' motivation and enhanced their learning performance. In a flipped classroom, students are introduced to content at home via technology and practice working through it at school. Students watch pre-recorded videos at home, then come to school to do the homework armed with questions and at least some background knowledge.

**Podcasts:** Podcasts are a depository of audio and video materials that can be given to learners without user intervention. These audio and video files can be downloaded to portable media players that can be taken anywhere, providing the potential for anytime, anywhere learning experiences. Gray (2021) stated that podcasts afford lecturers the opportunity to effortlessly engage audio content, which students can listen to anywhere and anytime. Podcasting can equally improve teaching and learning practices. Students can use podcasting for effective learning of Shorthand.



**WhatsApp Messenger:** WhatsApp Messenger is an instant messaging and voice application that allows people to send text messages, voice calls as well as video calls, images and other media, documents and user location globally through the internet in a fast, simple and reliable way (Irfan & Dhimmarr, 2019). Lecturers can use WhatsApp to communicate with students on the change of timetable, send recorded audio or video lectures, send questions, and lecture notes. Students can use WhatsApp to send lecture notes to fellow students who could not attend lectures, interact with one another on important or difficult topics and send useful information and recorded audio or video lectures to other students.

**Video Projector:** This is an image projector that receives a video signal and projects the associated image on a projection screen using a lens system. All video projectors use a very bright light to project the image and most modern ones can correct curves, obscure and generally other discrepancies through manual settings. This device is extensively used for many applications such as conference room presentations and classroom training. They are sometimes connected to an interactive whiteboard to interactively teach students (Onwukwe, et al., 2023).

**Webcam:** Webcam is a video camera that is attached to a computer that feeds or streams its image in real time to or through a computer to the internet. Agomuo (2021) observed that



lecturers can use webcam to deliver instructions and monitor students' activities by viewing them while online. Webcams have facilitated the creation of virtual classrooms and virtual learning environments. It is also used to counter plagiarism and other forms of academic dishonesty that might occur in an e-learning environment.

**LearnBoost:** LearnBoost is free web-based software that provides effective class management system. It consists of a group of software that can help instructors manage grade books, lesson plans, class roster, seating plan, schedules, and attendance. According to Bartee (2016), students can use LearnBoost to evaluate themselves, while lecturers and parents can use it to monitor and track their students' and children's performance daily. The interface is easy to use and signup is completely free and can be done using a Facebook or Google account

**Top Hat:** Top Hat is a student engagement software that lecturers use inside and outside of the classroom to track attendance, ask questions, feature interactive slides and manage classroom discussions. Outside of the classroom, the software features an interactive text platform where lecturers can adopt, customize, or create content for their courses. Top Hat enables teachers to create interesting and interactive presentations with the goal of enhancing student activity in class as well as their knowledge retention. It allows lecturers to engage students in active learning and check their knowledge of the subject (Bartee, 2022).

**Computer Managed Instruction (CMI):** CMI is software that has the basic function of assessment, scoring, and grading of students' tests, quizzes and examinations. It manages students' academic records and enhances individualisation of instruction. Adekunle, et al (2020) opined that CMI, as an instructional approach, is used to present learning objectives, learning resources, record keeping, progress monitoring and assessment of learner performance.

**Google Classroom:** Google Classroom is a free network service developed by Google for schools that desire to simplify the creation, distribution and grading of assignments in a paperless way. The main purpose of Google Classroom, as revealed by Shahinaz (2021) is to modernise the practice of sharing files between teachers and students. Google Classroom combines Google Drive, Google Docs, Sheets and Slides, and Gmail together to help educational institutions migrate to an electronic system. Each class created with Google Classroom creates a separate folder in the respective user's Google Drive, where the student can submit work to be assessed by a teacher. Lecturers can monitor the progress of each student



and, after being graded, can return the student's work, with comments. It also allows instructors to create, administer and grade assignments.

Engrade: Engrade is an educational tool that combines online learning management system and educational assessment products, which allows teachers to keep track of all their classes within one application, which comprises managing grades and exporting them to Microsoft Excel. This tool can be used to monitor students' attendance as well as performance in class. Bartee (2022) noted that one of the useful features of Engrade is that teachers can create interactive lessons using the materials they have collected online, and even make online quizzes that will prepare their students for future tests and enhance instructional delivery.

Instructional delivery is the interaction among the student, the teacher, the content, the knowledge, skills and dispositions students need for effective teaching/learning outcomes to qualify to work together with others in a diverse society and fast changing world. Dabbs (2022) explained that instructional delivery is an instructor's approach to teaching based on their own professional identity, which helps to create a unique classroom culture. Instructional delivery combines the complexities of teaching with institutional expectations and student demand for quality instruction. Adequate utilisation of e-learning innovations according to Ojeaga and Igbinedion (2022), can enable lecturers and students to develop manipulative skills, good communication skills and sound basis for scientific and reflective thinking.

However, Akasi and Nwabufo (2022) condemned the under-utilization of e-learning resources by lecturers in Nigeria for instructional delivery. The authors regretted that manual and technical resources still dominate the scene. Similarly, Akubueze (2022); Inije, et al (2023) reported that e-learning innovations were not extensively utilised for instructional delivery in Nigerian institutions due to several challenges, such as a shortage of qualified staff with e-learning application competencies, lack of e-learning facilities and infrastructure, among others. Emeasoba and Nweke (2022), Obikezie et al. (2022) and Nwachukwu and Ile (2023), reported that lecturers in the universities utilised e-learning innovations in teaching to a low extent while traditional instructional methods still dominate. The researchers concluded that the situation could be due some challenges these lecturers face, which are lack of confidence and skills in utilising the resources, overworked and busy lecturers, weak incentives and remuneration of university lecturers, high cost of e-learning facilities, poor funding for the preparation and training of university lecturers in the utilisation of e-learning innovations,



dilapidation in basic physical structure, increased loss of public interest in public universities as a result of decreasing academic standards, and limited knowledge in the application of innovative processes and methods. These studies recommended that the lecturers, their institutions and the government should endeavour to address the challenges to enhance utilisation of e-learning innovations for the good of the students. Hence, this study examined the topic: utilisation of e-learning innovations for instructional delivery by public university lecturers in Rivers State, Nigeria.

### **Statement of the Problem**

The utilisation of e-learning innovations for instructional delivery has become a crucial element of modern education, especially in higher education institutions like universities. Yet, despite the potential advantages these innovations offer, many public university lecturers in Nigeria encounter considerable challenges in integrating these technologies into their teaching practices. These challenges encompass limited access to ICT infrastructure, inadequate training and support, resistance to change in adopting e-learning innovations, insufficient institutional support, and problems with power outages and internet connectivity. The underutilization of e-learning innovations by lecturers has led to poor quality education, limited student engagement, inadequate preparation for the workforce, and diminished competitiveness. This scenario prompted the researcher to investigate the case of universities in Rivers State, thereby outlining the problem for the study.

### **Aim and Objectives of the Study**

The aim of this study was to examine the utilisation of e-learning innovations for instructional delivery by public university lecturers in Rivers State, Nigeria. Specifically, the objectives sought to:

1. determine the extent of utilisation of e-learning innovations by public university lecturers in Rivers State for instructional delivery.
2. identify the challenges facing public university lecturers in Rivers State in utilising e-learning innovations for instructional delivery.

### **Research Questions**

The following research questions guided the study:

1. What is the extent of utilisation of e-learning innovations by public university lecturers in Rivers State for instructional delivery?



2. What are the challenges facing public university lecturers in Rivers State in utilising e-learning innovations for instructional delivery?

### **Hypotheses**

The following null hypotheses were formulated to guide the study:

1. There is no significant difference in the mean responses of federal and state lecturers in universities in Rivers State on the extent of utilisation of e-learning innovations for instructional delivery.
2. There is no significant difference in the mean responses of federal and state lecturers in universities in Rivers State on the challenges facing them in utilising e-learning innovations for instructional delivery.

### **Methodology**



The study adopted a descriptive survey design as it involved gathering information from respondents through a structured questionnaire. The population of the study comprised 3,165 lecturers (1,512 federal and 1,653 state) from three public universities in Rivers State: the University of Port Harcourt, Rivers State University, and Ignatius Ajuru University of Education. The sample size for this study was 632 lecturers, representing 20% of the total population, drawn using a stratified sampling technique. The research instrument was a questionnaire titled "Utilisation of E-Learning Innovations for Instructional Delivery by Public University Lecturers Questionnaire (ELIIDPULQ)." The instrument consists of two sections (A and B). Section A gathered demographic information from the respondents, while Section B included items addressing research questions one and two. The items within the instrument were rated on a 4-point Likert scale: Very High Extent (VHE) = 4, High Extent (HE) = 3, Low Extent (LE) = 2, Very Low Extent (VLE) = 1, Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. Data for this study were primarily collected by the researcher with the assistance of two research assistants. A total of 632 copies of the questionnaire were administered to the respondents, resulting in 614 copies being retrieved and found suitable for analysis, yielding a 97% retrieval rate. Cronbach's alpha reliability statistics were employed to calculate the reliability coefficients of the instrument, which resulted in an index of 0.82. For the data analyzed, research questions were answered using mean and



standard deviation, while a z-test was utilized to test the hypotheses at a 0.05 level of significance.

### Results and Analysis

**Research Question 1:** What is the extent of utilisation of e-learning innovations by public university lecturers in Rivers State for instructional delivery?

**Table 1: Mean ( $\bar{x}$ ) and Standard Deviation of Respondents (Federal and State Lecturers) on the Extent of Utilisation of E-Learning Innovations by Public University Lecturers in Rivers State for Instructional Delivery**

SN	Items	Federal Lecturers N = 296		State Lecturers N = 318		Mean Set $\bar{x}_1 \times \bar{x}_2$	Decision
		$\bar{X}_1$	SD <sub>1</sub>	$\bar{X}_2$	SD <sub>2</sub>		
1.	Computers	2.38	0.66	2.42	0.53	2.40	Low Extent
2.	Internet	2.82	0.38	2.54	0.49	2.68	High Extent
3.	YouTube	1.96	0.57	2.05	0.40	2.01	Low Extent
4.	Computer-Assisted Instruction (CAI)	1.40	0.48	2.11	0.35	1.76	Very Low Extent
5.	DVD/CD-ROM	2.69	0.62	2.34	0.49	2.52	High Extent
6.	Interactive White Board	1.40	0.48	2.11	0.35	1.76	Very Low Extent
7.	Video conferencing Device	1.69	0.39	1.69	0.28	1.69	Very Low Extent
8.	PowerPoint	2.67	0.48	2.42	0.45	2.55	High Extent
9.	E-mail	2.32	0.61	2.17	0.45	2.25	Very Low Extent
10.	Learning Management System (LMS)	1.84	0.57	1.76	0.42	1.80	Very Low Extent
11.	iLearn	1.69	0.39	1.63	0.29	1.66	Very Low Extent
12.	Flipped classroom	1.69	0.37	1.61	0.27	1.65	Very Low Extent
13.	Podcasts	1.79	0.63	1.91	0.43	1.85	Very Low Extent
14.	WhatsApp Messenger	3.29	1.20	3.17	1.13	3.23	High Extent
15.	Video Projector	1.29	0.20	1.17	1.13	1.23	Very Low Extent
16.	Webcam	1.31	0.33	1.19	0.12	1.25	Very Low Extent
17.	LearnBoost	1.00	0.04	1.02	0.04	1.01	Very Low Extent
18.	Top Hat	1.99	0.97	1.92	0.96	1.96	Very Low Extent
19.	Computer Managed Instruction (CMI)	1.11	0.06	1.90	0.88	1.01	Very Low Extent
20.	Google Classroom	1.82	0.87	2.09	0.61	1.96	Very Low Extent
21.	Engrade	1.87	0.16	1.90	0.13	1.88	Very Low Extent
<b>Average Mean/Standard Deviation</b>		<b>1.90</b>	<b>0.42</b>	<b>1.96</b>	<b>0.43</b>	<b>1.93</b>	<b>Very Low Extent</b>

**Source:** Researcher's Survey Data, 2025.

**Decision Rule:** 1.00 – 2.29 = Very Low Extent (LE), 2.30 – 2.49 = Low Extent (HE), 2.50 – 3.49 = High Extent (HE), 3.50 – 5.00 = Very High Extent (VHE)

From Table 1 above, data reveal that item 4, 6, 7, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20 and 21 had mean scores between the range of 1.00 and 2.29 showing a very low extent utilisation



of e-learning innovations such Computer-Assisted Instruction (CAI), interactive whiteboard, video conferencing, E-mail, Learning Management System (LMS), iLearn, Flipped classroom, Podcasts, Video, Projector, Webcam, LearnBoost, Top Hat, Computer Managed Instruction (CMI), Google Classroom and Engrade, by public university lecturers in Rivers State for instructional delivery. Contrarily, items 1 and 3, had mean scores of between 2.30 and 2.49, showing that, for those respondents, utilisation of e-learning innovations such as computer and YouTube by public university lecturers in Rivers State for instructional delivery is to a low extent.

However, items 2, 5, 8 and 14 had mean scores of between 2.50 and 3.49, indicating that, for those respondents, utilisation of e-learning innovations such as internet, DVD/CD-ROM, PowerPoint and WhatsApp Messenger by public university lecturers in Rivers State for instructional delivery

In summary, with an average mean of 1.93 (which falls within the range of 1.00 to 2.29), federal and state lecturers agree that utilisation of e-learning innovations by public university lecturers in Rivers State for instructional delivery is to a very low extent.

**Research Question Two:** What are the challenges facing public university lecturers in Rivers State in utilising e-learning innovations for instructional delivery?

**Table 2: Mean and Standard Deviation Ratings of Respondents on the Challenges Facing Public University Lecturers in Rivers State in Utilising E-Learning Innovations for Instructional Delivery**

S/N	Items	Federal Lecturers N = 296		State Lecturers N = 318		Mean Set $\bar{x}_1\bar{x}_2$	Decision
		$\bar{x}_1$	SD	$\bar{x}_2$	SD		
22	Overworked and busy lecturers	3.29	1.20	3.17	1.13	3.23	Agree
23	Weak incentives and remuneration of university lecturers	3.31	1.33	3.19	1.12	3.25	Agree
24	High cost of e-learning facilities	3.00	1.04	3.02	1.04	3.01	Agree
25	Poor funding for the preparation and training of university lecturers in the utilisation of e-learning innovations	2.99	0.97	2.92	0.96	2.96	Agree
26	Dilapidation in basic physical structure	3.11	1.06	2.90	0.88	3.01	Agree
27	Increased loss of public interest in public universities as a result of decreasing academic standards	3.16	1.12	3.13	1.06	3.15	Agree
28	Limited knowledge in the application of innovative processes and methods	3.29	1.18	3.17	1.13	3.23	Agree
<b>Grand Mean and Standard Deviation</b>		<b>3.16</b>	<b>1.13</b>	<b>3.07</b>	<b>1.05</b>	<b>3.12</b>	<b>Agree</b>



**Source:** Researcher’s Survey Data, 2025.

**Decision Rule:** 2.49 below = Disagreed, 2.50 and above = Agreed

**Note:** Criterion mean = 2.50

Data in Table 2 show that all the items (22-28) had mean rating scores above the criterion mean of 2.50 and were adjudged as the challenges facing public university lecturers in Rivers State in utilising e-learning innovations for instructional delivery.

In summary, with an aggregate weighted mean of 3.12, above the criterion mean of 2.50, the respondents agree that, the challenges facing public university lecturers in Rivers State in utilising e-learning innovations for instructional delivery include: overworked and busy lecturers, weak incentives and remuneration of university lecturers, high cost of e-learning facilities, poor funding for the preparation and training of university lecturers in the utilisation of e-learning innovations, dilapidation in basic physical structure, increased loss of public interest in public universities as a result of decreasing academic standards, and limited knowledge in the application of innovative processes and methods.

**Test of Hypotheses**

**Hypothesis One (Ho<sub>1</sub>):** There is no significant difference in the mean responses of federal and state lecturers in universities in Rivers State on the extent of utilisation of e-learning innovations for instructional delivery.

**Table 3: Summary of z-test Analysis on the Significant Difference in the Mean Responses of Federal and State Lecturers on the Extent of Utilisation of E-Learning Innovations for Instructional Delivery**

Variable	N	$\bar{x}$	SD	Df	z-cal.	z-crit.	Level of Significance	Decision
Federal Lecturers	296	1.90	0.42	612	-0.87	1.96	0.05	Ho <sub>1</sub> Accepted (Not Significant)
State Lecturers	318	1.93	0.43					

Data in Table 4 show the value of z-cal. to be -0.87, while the value of z-crit. was 1.96. Since the value of z-cal. of -0.87 is less than the values of z-crit. of 1.96, the null hypothesis (Ho<sub>1</sub>) was accepted. This implies that there is no significant difference in the mean responses of federal and state lecturers in universities in Rivers State on the extent of utilisation of e-learning innovations for instructional delivery.



**Hypothesis Two (Ho<sub>2</sub>):** There is no significant difference in the mean responses of federal and state lecturers in universities in Rivers State on the challenges facing them in utilising e-learning innovations for instructional delivery.

**Table 4: Summary of z-test Analysis of the Significant Difference in the Mean Responses of Federal and State Lecturers in Universities in Rivers State on the Challenges Facing them in Utilising E-Learning Innovations for Instructional Delivery**

Variable	n	$\bar{x}$	SD	Df	z-cal.	z-crit.	Level of Significance	Decision
Federal Lecturers	296	3.16	1.13	612	1.05	1.96	0.05	Ho <sub>2</sub> Accepted (Not Significant)
State Lecturers	318	3.07	1.05					

Data in Table 4 showed the value of z-cal. to be 1.05, while the value of z-crit. was 1.96. Since the value of z-cal. of 1.05 is less than the value of z-crit. of 1.96, the null hypothesis (Ho<sub>2</sub>) was accepted. This implies that there is no significant difference in the mean responses of federal and state lecturers in universities in Rivers State on the challenges facing them in utilising e-learning innovations for instructional delivery.

### Discussion of Findings

The first finding of the study revealed that utilisation of e-learning innovations by public university lecturers in Rivers State for instructional delivery is to a very low extent. A corresponding hypothesis tested established no significant difference in the mean responses of federal and state lecturers in universities in Rivers State on the extent of utilisation of e-learning innovations for instructional delivery. These findings are in agreement with the position of Akasi and Nwabufo (2022), who decried the under-utilization of e-learning innovations and reliance on manual and technical resources by public university lecturers in Nigeria. The finding also supports the report of Emeasoba and Nweke (2022) that public university lecturers in South-East Nigeria utilize e-learning innovation in teaching at a low extent. This is not encouraging at all, considering that the computerization of functions in the present office and business environments where the products of these universities are expected to work.

The second finding of the study showed that the challenges facing public university lecturers in Rivers State in utilising e-learning innovations for instructional delivery include: overworked and busy lecturers, weak incentives and remuneration of university lecturers, high cost of e-learning facilities, poor funding for the preparation and training of university lecturers



in the utilisation of e-learning innovations, dilapidation in basic physical structure, increased loss of public interest in public universities as a result of decreasing academic standards, and limited knowledge in the application of innovative processes and methods. A corresponding hypothesis tested established no significant difference in the mean responses of federal and state lecturers in universities in Rivers State on the challenges facing them in utilising e-learning innovations for instructional delivery. These findings are in line with Emeasoba and Nweke (2022), Obikezie et al. (2022) and Nwachukwu and Ile (2023), who empirical studies reported that lecturers in the universities utilised e-learning innovations in teaching to a low extent due some challenges they face, as identified above.

### **Conclusion**

Based on the findings, it was concluded that inadequate utilisation of e-learning innovations in the university by lecturers is a major contributory factor to the ineffective instructional delivery of the current era.



### **Recommendations**

The following are recommended based on the findings of the study:

1. Management of the universities should sponsor their lecturers on short-term courses and conferences to equip them with competencies for e-learning utilisation to improve the quality of their instruction using e-learning innovations.
2. The government and university management should work hand in hand to address challenges faced by lecturers, which result in low utilisation of e-learning innovations in the universities for instructional delivery.

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