



Perceived Influence of E-Learning Platform on Academic Performance of Undergraduate Students in Public Universities in Rivers State

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Abstract

This study examined perceived influence of e-learning platform on academic performance of undergraduate students in public Universities in Rivers State. Two objectives, two research questions and two hypotheses guided the study. The study adopted descriptive survey design. The population for the study comprised 1,660 final year students in the Faculty of Education from the three public universities in Rivers State (University of Port Harcourt, Rivers State University and Ignatius Ajuru University of Education). The sample size of 322 was determined using Taro Yamane's sample method and stratified random sampling technique. The instrument for data collection was a ten-item, self-structured questionnaire titled: "Perceived Influence of E-learning Platform on Academic Performance of Undergraduate Students Questionnaire". The instrument was validated by three experts in the Departments of Educational Management and Measurement and Evaluation. The internal consistency of the instrument was determined using Cronbach Alpha which yielded a reliability index of 0.81. Mean and standard deviation were used to answer the research questions while z-test statistics was used to test the hypotheses at 0.05 level of significance. The result of the analyzed data revealed that synchronous and blended learning as e-learning platform influenced academic performance of undergraduate students to a high extent. Based on the findings, it was recommended among others that management of tertiary institutions should make concerted effort to provide e-learning environment and e-learning tools for both lecturers and students to enhance the academic performance of students.

Introduction

Education is very important in any given society, it is a process by which abilities and capabilities of individuals are developed and designed for the actualization of human potential to enable transformation of individuals and nations in a broader view. The provision of education has been considered to be the cornerstone of development forming the basis for literacy, skill acquisition, technological advancement and ability to harness human and material resources towards the achievement of societal goal (Federal Republic of Nigeria, FRN, 2013). Before the advent of technology into higher educational institutions, the lecturer was the transmitter and the students at the other end are the receivers of the knowledge being transferred. The students have a minimum role to play here because they are at the receiving end of the transmission (Olabiyi, Aiyelabowo & Kishiro, 2013). Educationists of today find this method limiting and less effective as the learners may lose their concentration within half an hour due to passive role and less participation (Osuji & John-Uri, 2021).

Today, technology is a tool used to eradicate geographical barriers and facilitate everybody to learn anytime and anywhere without the presence of an instructor. This is been made possible by brining fundamental changes through e-learning in which lecturers can provide students centered learning environment from the comfort of their homes that can make learning process interesting and understandable to the undergraduate students. The Internet has become one of the vital ways to make available resources for research and learning for both teachers and students to share and acquire information (Richard & Haya 2012). Technology has radically and positively impacted on education globally by transforming teaching and learning process. The process of education has improved the way lecturers impact knowledge and also the way students assimilate information in this 21st century which has been greatly influenced by the advancement of technology. The integration of technology into the teaching and learning process has introduced a new system of learning which is globally referred to as e-learning. This new system of learning is accessed and delivered electronically with multimedia products. Institutions are now witnessing a paradigm shift from teacher-centred to learner-centred learning with the development of e-learning (Nwosu as cited in Osuji & John-Uri, 2021).

E-learning as acquisition of disseminated knowledge using electronic devices (Wentling, Waight, Gallagher, La Fleur, Wang & Kanfer, 2010). E-learning is a unifying term used to describe the fields of online learning, web-based training and technology delivered instructions (Oye, Salleh & Lahad, 2011). E-learning as the use of systems of electronic education such as computer, internet, multimedia disks, electronic magazines, and virtual newscasts whose purposes are to reduce time and expenses and achieve better, faster, and easier learning . E-learning approach has become an increasingly popular learning approach in higher institutions due to vast growth and advancement of technology. Higher institutions are moving towards problem based learning as a solution to producing graduates who are creative and analytically to solve problems. E-learning

technology has the potential to transform how and when learners learn. Highly intellectual students feel boredom and monotony in class due to same usual teaching patterns by lecturers.

E-learning can be viewed as computer assisted learning and as pedagogy for student-centered and collaborative learning. Early developments in e-learning focused on computer assisted learning where part or all of the learning content is delivered digitally. More recently the pedagogical dimension of e-learning has become prominent. E-learning comprises all forms of electronically supported teaching and learning. E-learning is more cost effective than traditional learning because less time and money is spent traveling since learning can be done in any geographic location and there are no travel expenses. E-learning gives students the advantage of taking classes anywhere and has also made education accessible when and where it is needed. Education has experienced major paradigm shifts in educational practices of teaching and learning under the umbrella of e-learning enabled by different e-learning platforms.

E-learning platform is the technical element that has facilitated substantial learning classrooms. E-learning platform is an integrated set of interactive online services that provide trainers, learners, and others involved in education with information, tools and resources to support and enhance education delivery and management. Rocio, Ignacio, Daniel and Carlos (2011) defined e-learning platforms as computing and telematics tools organized in accordance with some formative objectives of integral form, and pedagogical principles which is mainly in charge of management of courses and communication processes, providing the e-learning scene with its necessary support. Virtual learning environments are present in many universities today. Not only have they revolutionized teaching and learning process, they have also made the classroom a substantial part of higher educational institution which has influenced academic performance of undergraduate students.

Academic performance is the measurement of student achievement across various academic subjects; teachers and education officials typically measure achievement using classroom performance, graduation rates and results from standardized tests. Academic performance is the extent to which a student, teacher or institution has attained their short or long-term educational goals. The classroom environment today is completely different from the traditional classroom, therefore is a paradigm shift of learning from teacher centered to learner focus (Osuji & John-uri, 2021). The technological component of learning is constantly growing. In this present Day, classes are taking place online with the help of E-learning platforms which offer students greater opportunities to acquire more engaging and motivating experiences. E-learning platform adopted in this study to improve undergraduate students academic performance include; synchronous learning and blended learning.

Synchronous learning refers to any learning event delivered to remote learners in real time and include immediate two way communication between participants. Synchronous learning makes use of digital tools and content extending from telephone calls and video-conferencing to

voice over internet protocol (VoIP) and video broadcast over the internet which influence students creative thinking (Martinez-Caro & Francisco, 2011). Bonk and Zhang (2016) stressed that synchronous learning like the video-conferencing and Live Virtual Classrooms (LVCs) is a blend of two or more synchronous technologies used to produce a solution that permits several channels of communication between the teacher and learner. Synchronous learning brings together both video and audio in an effort to reduce the experience of communication and is also used to accelerate meetings between lecturers and students (Reynolds, Mason, Carol, Eaton & Odell, 2010). Synchronous learning provides both lecturers and students with various ways of networking and sharing and collaborating in real-time (Higley, 2013). Through synchronous learning students stay in touch with their lecturers and fellow students because the system allows students to ask their lecturer or fellow students questions instantly through instant messaging (Nicholson, 2002).

Blended learning is an innovative concept that embraces the advantages of both traditional teaching in the classroom and ICT supported learning including both offline learning and online learning. According to Beldarrain (2016) it is an approach to education that combines online educational materials and opportunities for interaction online with traditional place-based classroom methods. Hwa, Weei, and Len (2012) observed that the current upsurge in the number of students' academic performance stimulates the need for more effective teaching methods and create a conducive environment. It has scope for collaborative learning; constructive learning and computer assisted learning (CAI). Graham (2006) buttressed that blended learning is an educational settings where students and teachers meet in the same place, basically classroom, to learn with the settings that are based on communication technology, as they can communicate distantly. Blended learning motivates students to learn on their own at their own pace and in their own time which improves their academic performance (Poon, 2013). Graham, Curtis and Andrew (2013) argued that the blended learning replacing traditional approach in education maximizes face-to-face learning and e-learning approaches which influence students' academic performance.

The objective of e-learning is to develop a detailed and systematic methodology to define the criteria for identifying the best practices framework for the collection and formation of exceptional teaching and learning approaches to influence undergraduate students' academic performance. In order to design and develop a best way teaching method in higher institutions which will include a collection and categorization of best practices to support the learning community where students will be able to find, exchange and adapt to new ideas, e-learning platform is the relevant and proposed approach which will positively influence undergraduate students' academic performance. Given the above, it became imperative for the researcher to examine researcher tends to investigate the perceived influence of e-learning platform on academic performance of undergraduate students in public universities in Rivers State.

Statement of the Problem

The covid-19 pandemic ravaging all sectors of the economy in Nigeria and the world in general has led to the closure of educational system all over the world. The educational system was not fully prepared for e-learning as both teachers and students lack knowledge on the use of various e-learning platforms such as the synchronous and blended learning (Reddy & Talcott as cited in Osuji & John-Uri, 2021).

Mobile learning and multimedia have supplemented the traditional forms of teaching and learning to enhance academic performance of students globally. Atkinson (2010) noted that those that push for without modern technologies and that traditional lecture-based method does not enhance students' academic performance as much as these modern technologies. Personal observation of the researcher shows that these technologies which include mobile learning and multimedia are rarely utilized as a result of incessant power outages and sometimes lack of awareness on the part of the students. This seems to affect undergraduate student's academic performance.

Another major obstacle to e-learning in Nigeria is tied towards the high cost of internet data services. The internet service required to connect to this e-learning platform sometimes requires a lot of data. The cost of purchasing the data bundle is so high which might be difficult for both students and lecturers. Also poor internet connectivity by network providers is of major concern especially when it comes to video conferences where both the students and lecturers have to interact. The cost of accessing the internet in Nigeria is still on the high side. Hence, some students find it a challenge to afford. It is against this backdrop that the researcher intended to examine perceived influence of e-learning platform on academic performance of undergraduate students in public Universities in Rivers State.

Purpose of the Study

The purpose of this study was to ascertain the perceived influence of e-learning platform on academic performance of undergraduate students in public Universities in Rivers State. Specifically, the study sought to:

1. Find out the extent to which the use of synchronous learning influences academic performance of undergraduate students in Public Universities in Rivers State.
2. Determine the extent to which the use of Blended Learning influences academic performance of undergraduate students in public Universities in Rivers State.

Research Questions

The following research questions guided the study.

1. To what extent does the use of synchronous learning influence academic performance of undergraduate students in public Universities in Rivers State?
2. To what extent does the use of blended learning influence academic performance of undergraduate students in public Universities in Rivers State?

Hypotheses

The following hypotheses were tested at 0.05 level of significance.

1. There is no significant difference in the mean ratings of male and female undergraduate students on the extent to which the use of synchronous learning influence academic performance of undergraduate students in public Universities in Rivers State.
2. There is no significant difference in the mean ratings of Male and Female undergraduate students on the extent to which the use blended learning influence academic performance of undergraduate students in public Universities in Rivers State.

Methods

The study adopted descriptive survey design. This study focused on the three universities in Rivers State, which are the Rivers State University, Ignatius Ajuru University of Education and University of Port Harcourt, The population for the study comprised 1660 final year students in the Faculty of Education from the three public universities in Rivers State. The Faculty of Education of the three (3) universities in 2019 had a total number of 1660, (644 male final year students and 1016 female final year students). Stratified random sampling technique was used to select the students in clusters. Thereafter 34 males and 77 females were selected from each of the 3 public universities in Rivers State totaling 333 students (102 males and 231 females). The instrument for the study was a ten-item self-structured questionnaire titled: "Perceived Influence of E-learning Platform on Academic Performance of Undergraduate Students Questionnaire (PIELPAPUSQ). The instrument was face and content validated by three experts in the Departments of Educational Management and Measurement and Evaluation. In order to establish the reliability of the instrument, the instrument was administered to twenty (20) undergraduate students of Niger Delta University in Bayelsa State who were not part of the population of the study. The scores were analyzed using Cronbach Alpha. The computation yielded reliability indexes of 0.79, and 0.80 which revealed that the instrument was reliable for the study for data Analysis, Mean and Standard deviation were used to answer the research questions; while z-test statistical tool was used to test the hypotheses at 0.05 level of significance.

Results

Research Question 1: To what extent does the use of synchronous learning influence academic performance of undergraduate students in public Universities in Rivers State?

Table 1: Mean Ratings of Male and Female Students on the Extent to which the Use of Synchronous Learning Influence Academic Performance of Undergraduate Students in Public Universities in Rivers State

S/N	Item Statements	Male = 102		Remarks	Female = 231		Remarks
		\bar{x}	SD		\bar{x}	SD	
1	Students feel a stronger sense of collaboration	1.32	0.86	Very low Extent	2.97	1.09	High Extent
2	Students become more engaged in their learning	3.39	0.83	Very High Extent	2.95	1.02	High Extent
3	Student can ask question in real time	3.53	0.81	Very High Extent	3.42	0.88	Very High Extent
4	Students feel a greater sense of community and connection to their peers when they all learn together	3.45	0.86	Very High Extent	3.03	0.93	Very High Extent
5	I am confident that I will do very well in my online studies	3.23	0.93	Very High Extent	3.05	1.03	Very High Extent
Total Mean & SD =		14.92	4.29		15.42	4.95	
Grand Mean & SD =		2.98	0.85		3.08	0.99	

Source: Field Survey, 2021

The analyzed data in table 1 revealed that the mean scores of respondents in item 1 are 1.32 and 2.97 and standard deviation scores of 0.86 and 1.09. Item 2 has mean scores of 3.39 and 2.95 and standard deviation scores of 0.83 and 1.02. Item 3 had mean scores of 3.53 and 3.42 and standard deviation scores of 0.81 and 0.88 scores. Item 4 had a mean scores of 3.45 and 3.03 and standard deviation scores of 0.86 and 0.93. Item 5 had mean scores of 3.23 and 3.05 and standard deviation scores of 0.93 and 1.03 respectively. With grand mean scores of 2.98 and 3.08 for male and female students which are above the criterion mean of 2.50; this infers that the use of synchronous learning as an e-learning platform influence academic performance of undergraduate students in public Universities in Rivers State to a high extent.

Research Question 2: To what extent does the use of blended learning influence academic performance of undergraduate students in public Universities in Rivers State?

Table 2: Mean Ratings of Male and Female Students on the Extent to which the Use of Blended Learning Influence Academic Performance of Undergraduate Students in Public Universities in Rivers State

S/N	Item Statements	Male = 102			Female = 231		
		\bar{x}	SD	Remarks	\bar{x}	SD	Remarks
1	Blending learning allow students/lecturers to mix and match according to their needs.	3.53	0.81	Very High Extent	3.17	1.00	Very High Extent
2	Microsoft teams engage students on interactive forum using forum platform.	3.01	1.06	Very High Extent	2.70	0.85	High Extent
3	It provides ultimate flexibility in presenting content	3.05	1.08	Very High Extent	3.17	0.95	Very High Extent
4	Blending learning is proven to enhance both effectiveness and efficiency of meaningful learning experience	3.07	1.09	Very High Extent	3.32	0.83	Very High Extent
5	Blending learning covers all learning styles through a variety of mediums and techniques	3.17	1.07	Very High Extent	3.13	1.00	Very High Extent
Total Mean & SD =		15.83	5.11		15.49	4.63	
Grand Mean & SD =		3.16	1.02		3.09	0.92	

Source: Field Survey, 2021

The analyzed data in table 2 revealed that the mean scores of respondents in item 1, are 3.53 and 3.17 and standard deviation scores of 0.81 and 1.00. Item 2 has mean scores of 3.01 and 2.70 and standard deviation scores 1.06 and 0.85. Item 3 had mean scores of 3.05 and 3.17 and standard deviation scores of 1.08 and 0.95 scores. Item 4 had a mean scores of 3.07 and 3.32 and standard deviation scores of 1.09 and 0.83. Item 5 had mean scores of 3.17 and 3.13 and standard deviation scores of 1.07 and 1.00 respectively. With grand mean scores of 3.16 and 3.09 for male and female students which are above the criterion mean of 2.50; this indicated that the use of blended learning as an e-learning platform influence academic performance of undergraduate students in public Universities in Rivers State to a high extent.

Hypotheses

H₀₁: There is no significant difference in the mean ratings of male and female undergraduate students on the extent to which synchronous learning influence academic performance of undergraduate students in public Universities in Rivers State.

Table 3: z-test Analysis of Difference Between the Mean Ratings of Male and Female Undergraduate Students on The Extent to which the Use of Synchronous Learning Influence Performance of Undergraduate Students in Public Universities in Rivers State.

Respondents	N	\bar{X}	SD	DF	SL	z-cal.	z-crit.	Decision
Male Students	102	2.98	0.85	331	0.05	1.00	±1.96	Failed to reject No significant Difference
Female Students	231	3.08	0.99					

Source: Field Survey, 2021

Table 3 above, shows a calculated z-value of 1.00, which is less than the z-critical value of ±1.96 at 0.05 level of significance and 331 degree of freedom. Since the z-calculated value of 1.00 was less than the z-critical value of ±1.96, the null hypothesis was accepted which states that there is no significance different between the mean ratings of male and female undergraduate students on the extent to which the use of synchronous learning influence academic performance of undergraduate students in public Universities in Rivers State.

H₀₂: There is no significant difference in the mean ratings of male and female undergraduate students on the extent to which blended learning influence academic performance of undergraduate students in public Universities in Rivers State.

Table 4: z-test Analysis of Difference Between the Mean Ratings of Male and Female Undergraduate Students on The Extent to which the Use of Blended Learning Influence Academic Performance of Undergraduate Students in Public Universities in Rivers State.

Respondents	N	\bar{X}	SD	DF	SL	z-cal.	z-crit.	Decision
Male Students	102	3.16	1.02	331	0.05	0.06	±1.96	Failed to reject No Significant Difference
Female Students	231	3.09	0.92					

Source: Field Survey, 2021

Table 4 above, shows a calculated z-value of 0.06, which is less than the z-critical value of ±1.96 at 0.05 significant levels and 331 degree of freedom. Since the z-calculated value of 0.06 was less than the z-critical value of ±1.96, the null hypothesis was accepted which states that there is no significance different between the mean ratings of male and female undergraduate students on the extent to which the use of blended learning influence academic performance of undergraduate students in public Universities in Rivers State.

Major Findings

The finding of the study revealed that:

1. The use of synchronous learning to a high extent influence academic performance of undergraduate students in public Universities in Rivers State.
2. The use of blended learning to a high extent influence academic performance of undergraduate students in public Universities in Rivers State.
3. There is no significant difference in the mean ratings of male and female undergraduate students on the extent to which the use of synchronous learning influence academic performance of undergraduate students in public Universities in Rivers State.
4. There is no significant difference in the mean ratings of male and female undergraduate students on the extent to which the use of blended learning influence academic performance of undergraduate students in public Universities in Rivers State.

Discussion of Findings

Findings on research question 1 on table 1 revealed that male and female undergraduate students opined that the use of synchronous learning to a high extent influence academic performance of undergraduate students in public Universities in Rivers State with grand mean values of 2.98 and 3.08. Corresponding hypotheses 1 on table 3 showed that there was no significant difference in the mean ratings of male and female undergraduate students on the extent to which the use of synchronous learning influence academic performance of undergraduate students in public Universities in Rivers State with z-calculated value of 1.00 which was less than z-critical value of ± 1.96 . This finding is supported by Martinez-Caro and Francisco (2011), who noted that synchronous learning makes use of digital tools and content extending from telephone calls and video-conferencing to voice over internet protocol (VoIP) and video broadcast over the internet which influence students' creative thinking. Also in support, Higley (2013) noted that synchronous learning provides both lecturers and students with various ways of networking and sharing and collaborating in real-time.

Findings on research question 2 on table 2 revealed that male and female undergraduate students opined that the use of blended learning to a high extent influence academic performance of undergraduate students in public Universities in Rivers State with grand mean values of 3.16 and 3.09. Hypotheses 2 in table 4 showed that there was no significant difference in the mean ratings of male and female undergraduate students on the extent to which the use of blended learning influence academic performance of undergraduate students in public Universities in Rivers State with z-calculated value of 0.06 which was less than z-critical value of ± 1.96 . This finding corroborated with Poon (2013), who noted that blended learning motivates students to learn on their own at their own pace and in their own time which improves their academic performance. This finding is also supported by Graham, Curtis and Andrew (2013) who argued

that blended learning replacing traditional approach in education maximizes face-to-face learning and e-learning approaches which influence students' academic performance.

Conclusion

Based on the findings of the study, it was concluded that students believe that the use of synchronous learning and the use of blended learning as e-learning platform can influence academic performance of undergraduate students in public Universities in Rivers State.

Recommendations

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

1. Management of tertiary institutions should make concerted effort to provide e-learning environment and e-learning tools for both lecturers and students to enhance the academic performance of students.
2. The management of Universities in Rivers State should introduce staff development programs for their staff on the use of e-learning platform for effective instructional delivery to enhance students' academic performance.

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