

Effect of Online Learning on Academic Performance of Students in Tertiary Institutions in Benue State

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Abstract

The study evaluated the effect of online learning on academic performance of students in tertiary institutions in Benue State, Nigeria. The specific objectives of the study were to: evaluate the effect of online learning on course completion rate in tertiary institutions in Benue State, Nigeria; examine the effect of online learning on class attendance and participation in tertiary institutions in Benue State, Nigeria and ascertain the effect of online learning on Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria. A descriptive survey design was used for the study. The population of the study was 2003. In determining the sample size of 335, the researcher used Taro Yamane formula (1967). Simple random sampling technique was used in selecting the respondents who were useful to this study. The collected data for the study was analysed through the use of mean score. The z-test analysis technique was applied in testing the hypotheses. The study found that Online learning had a significant positive effect on course completion rate in tertiary institutions in Benue State, Nigeria, that online learning does have a significant positive effect on class attendance and participation in tertiary institutions in Benue State, Nigeria and that Online learning has a significant positive effect on Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria. The study concluded that online learning has a significant positive impact on the academic performance of students in tertiary institutions in Benue State, Nigeria. It enhances flexibility, accessibility, and independent learning, which can improve students' engagement and academic outcomes. The study recommended among others that tertiary institutions in Benue State should invest in reliable digital infrastructure, including high-speed internet and functional e-learning platforms. Government and private stakeholders must collaborate to provide affordable internet access to students, ensuring seamless participation in online learning without interruptions caused by network instability or limited technological resources

Keywords: Online Learning; Academic Performance; E-Learning in Higher Education; Course Completion Rate; Student Participation; Grade Point Average.

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Introduction

Education plays a critical role in the development of society by fostering economic growth, social equity, and innovation. It equips individuals with the knowledge and skills required to participate actively in various sectors, including governance, industry, and technology. Quality education empowers people to make informed decisions, contributing to a more democratic and equitable society. According to Schultz's Human Capital Theory, education increases the productivity and earnings of individuals, which in turn stimulates economic development (Schultz, 2021). Education also promotes social cohesion by reducing inequality and offering marginalized groups opportunities for upward mobility (UNESCO, 2022). In developing nations, the expansion of education systems has been linked to a reduction in poverty and improvements in public health outcomes (World Bank, 2023). Moreover, education fosters innovation by encouraging critical thinking and problem-solving skills, which are essential for addressing global challenges like climate change and technological disruptions (OECD, 2023). In essence, education not only drives economic development but also enhances social stability, health, and overall quality of life. Without sustained investment in education, societal progress would stagnate, and inequality would likely increase.

Online learning has become increasingly integral to tertiary education in Nigeria, influencing students' academic performance in various ways. A study conducted at the University of Ilorin during the COVID-19 pandemic revealed that virtual learning platforms, particularly Google Classroom, were widely adopted. Today, e-learning is seen as one of the most promising options that can successfully be applied to enhance effective delivery of instruction (Ubogu, 2020; Ubogu, 2023). Many higher institutions around the world are embracing online (i.e, e- learning) using ICT tools as a way to offer educational opportunities during corona pandemic. The spread of COVID-19 poses a threat to humanity, as this pandemic has forced many global activities to close, including educational activities. To reduce the spread of the virus, education institutions have been forced to switch to e- learning using available educational platforms, despite the challenges in the teaching and learning process.

E-learning is a unifying term used to describe the use of online learning, web-based training and technology delivered instructions. It is simply called Electronic Learning. E-learning involves learning using groups on social media such as WhatsApp (WA), telegram, Zoom applications, or other social media to ensure that students can learn at the same time and in different places (Salehudin *et al* 2021). E-learning has revolutionized learning for several years, improving efficiencies, workflow and collaboration. The flexibility offered by e-learning in terms of place of learning and time of learning means that whole education programs can be rolled out across teams all over the world. The integration of emerging technologies in teaching and learning process is no longer a choice but a need due to: the changing learning environment, demand for flexibility in methodology, and the need to enhance creativity and productivity in learning (Onyema, 2019).

The recent scourge of the Corona virus Disease (COVID-19) reemphasized the undeniable influence of e-learning on the learning outcome of students. Many schools and learning institutions were disrupted in learning due to complete close-down to curtail the spread of the virus. During this period, learning and academic activities continued in some institutions globally, but on the electronic platform. The negative effect of the COVID-19 pandemic was managed by educational institutions that had supportive e-learning facilities during the heat of the pandemic. The use of these e-learning platforms such as Microsoft Teams, Zoom, Whatsaap etc were utilized by both the lecturers and students to continue their normal teaching and learning activities during the COVID-19 lockdowns, thereby mitigating the

negative effect of the protracted lockdown on their staff and students. Onyema *et al*, (2020) affirmed that technology have modified teachers' method from traditional approach that often place them as dispensers of knowledge to a more flexible approach where they act more as facilitators, mentors and motivators to inspire students to participate and learn. The influence of online e – learning platforms on performance has been a contemporary topic of discussion among scholars and researchers.

Many scholars argue that students in higher educational institutions that engaged in E-Learning, generally performed better than those in face to- face courses. (Holley, 2002) found that students who participate in online/ E-Learning achieve better grades than students who studied through the traditional approach. As a result of this, many institutions of higher learning are embracing the use of online e-learning platforms which is also known as virtual learning. On the other hand, some scholars are of the opinion that E-learning platforms do not add any value to the teaching and learning activities of the University (Fayomi, Ayo, Ajayi & Okorie, 2015). This study intends to unravel the effect of these On-line learning on academic performance of students in selected higher institutions in Benue State.

Statement of Problem

Online learning plays a critical role in enhancing the academic performance of students in tertiary institutions by providing flexible and accessible education. It allows students to learn at their own pace, review recorded lectures, and access diverse learning materials beyond traditional classroom settings. Research has shown that e-learning platforms such as Moodle, Google Classroom, and Coursera improve students' comprehension and retention rates. Additionally, online learning fosters digital literacy and self-discipline, essential skills for academic success. Overall, online learning serves as a vital tool in modern education, significantly improving academic outcomes and preparing students for the digital economy.

The rapid adoption of online learning in tertiary institutions has transformed the educational landscape, particularly in Nigeria. However, its effectiveness in enhancing academic performance remains a subject of concern, especially in Benue State, where infrastructure and digital literacy challenges persist. Many students in the state lack reliable internet access, functional digital devices, and adequate technical support, making it difficult to fully engage with online learning platforms. These limitations raise concerns about students' ability to effectively learn, complete coursework, and achieve high academic performance.

Additionally, the effectiveness of online learning depends on students' self-discipline, motivation, and familiarity with digital tools, which vary significantly among learners. Some students struggle with adapting to virtual classes, leading to reduced participation and lower academic achievement. Furthermore, lecturers often face difficulties in effectively delivering online courses due to limited technological skills and inadequate institutional support. Previous studies have shown mixed results regarding the impact of online learning on academic performance, with some suggesting a positive correlation while others highlight challenges that hinder its success. Therefore, there is a need for an empirical investigation into the specific challenges and benefits of online learning in Benue State's tertiary institutions to develop strategies that enhance its effectiveness and improve student outcomes.

Objectives of the Study

The broad objective of the study was to evaluate the effect of online learning on academic performance of students in tertiary institutions in Benue State, Nigeria. The specific objectives of the study were to:

- i. Evaluate the effect of online learning on Course Completion Rate in tertiary institutions in Benue State, Nigeria;
- ii. Examine the effect of online learning on Class Attendance and Participation in tertiary institutions in Benue State, Nigeria;
- iii. Ascertain the effect of online learning on Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria.

Research Questions

The following research questions were raised for the study

- i. To what extent does online learning affect Course Completion Rate in tertiary institutions in Benue State, Nigeria?
- ii. What effect does online learning have on Class Attendance and Participation in tertiary institutions in Benue State, Nigeria?
- iii. To what extent has online learning affected Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria?

Statement of Hypotheses

- i. Online learning has no significant effect on Course Completion Rate in tertiary institutions in Benue State, Nigeria.
- ii. Online learning does not have a significant effect on Class Attendance and Participation in tertiary institutions in Benue State, Nigeria.
- iii. Online learning has no significant effect on Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria.

Significance of the Study

This study is significant both theoretically and empirically. Theoretically, it contributes to the understanding of online learning through the lens of Constructivist Learning Theory, which emphasizes active student engagement in digital learning environments. It also aligns with Technology Acceptance Model (TAM), which explains students' willingness to adopt e-learning based on perceived usefulness and ease of use.

Empirically, the study provides evidence on how online learning impacts academic performance in tertiary institutions in Benue State, Nigeria. It highlights challenges such as poor internet access, digital literacy gaps, and institutional support. The findings will help policymakers, educators, and institutions implement effective e-learning strategies, improve infrastructure, and enhance students' academic success. Additionally, it will serve as a reference for future research on digital education in Nigeria's tertiary institutions.

Scope of the Study

This study focuses on the effect of online learning on the academic performance of students in tertiary institutions in Benue State, Nigeria. It examines factors such as digital access, student engagement, and institutional support. The study covers three selected institutions: Benue State University (BSU), National Open University Otuokpo Study Centre, National Open University Makurdi. It targets students, lecturers, and administrators to assess the challenges and benefits of online learning and its impact on academic outcomes. The research work cover the period of 2025.

Operational Definition of Terms

Online Learning: This often referred to as e-learning or digital learning. It involves the delivery of educational content through digital platforms, enabling instruction and learning to occur over the internet.

Academic Performance: This refers to the extent to which a student, teacher, or institution achieves educational goals. It is commonly measured through grades, test scores, and completion rates.

Course Completion Rate: Course completion rate is a vital metric in educational settings, representing the percentage of students who successfully finish a course or program within a specified time.

Class Attendance and Participation: Class attendance refers to the regularity with which students attend scheduled instructional sessions, while class participation encompasses active involvement during these sessions, including contributing to discussions, asking questions, and collaborating in group activities.

Grade Point Average: Grade Point Average (GPA) is a standardized metric that quantifies a student's academic performance by averaging the numerical values assigned to their earned grades over a specific period.

Review of Related Literature

Conceptual Review

Online Learning

Online learning, often referred to as e-learning or digital learning, involves the delivery of educational content through digital platforms, enabling instruction and learning to occur over the internet (Ubogu, 2023). This approach leverages information and communication technologies (ICTs) to facilitate interactions between educators and students, transcending traditional classroom boundaries. A key characteristic of online learning is its flexibility, allowing students to access course materials and participate in learning activities from any location with internet connectivity (Salehudin *et al*, 2021). This flexibility accommodates diverse learning styles and schedules, making education more accessible to a broader audience. Online learning environments can be categorized into synchronous and asynchronous formats. Synchronous learning requires real-time interaction between instructors and students, often through video conferencing tools. In contrast, asynchronous learning allows students to engage with course materials at their own pace, utilizing resources such as pre-recorded lectures and discussion forums.

Academic Performance

Academic performance refers to the extent to which a student, teacher, or institution achieves educational goals. It is commonly measured through grades, test scores, and completion rates, reflecting a learner's ability to grasp and apply knowledge (Ogunleye & Adebayo, 2022). Academic performance is influenced by several factors, including

teaching methods, learning environment, motivation, and socioeconomic background (Ajayi & Olufemi, 2021). According to Babatunde (2023), academic performance is a multidimensional construct encompassing cognitive, behavioral, and affective domains. The cognitive domain includes knowledge acquisition and critical thinking, the behavioral domain relates to class participation and discipline, while the affective domain involves motivation and self-confidence. In higher education, academic performance is also linked to digital literacy, as students' ability to use technology effectively impacts learning outcomes (Eze & Okonkwo, 2022).

Course Completion Rate

Course completion rate is a vital metric in educational settings, representing the percentage of students who successfully finish a course or program within a specified timeframe (Nwosu and Chidiebere, 2023). It is calculated by dividing the number of students who complete the course by the total number enrolled, then multiplying by 100 to express it as a percentage. Several factors influence course completion rates (Ogunleye, & Adebayo, 2022). Student-related elements such as academic preparedness, motivation, and time management skills play significant roles. Institutional factors, including the quality of instructional materials, availability of support services, and faculty engagement, also impact completion rates. Course completion rate is a critical indicator of educational quality and student achievement, reflecting both individual and institutional performance.

Class Attendance and Participation

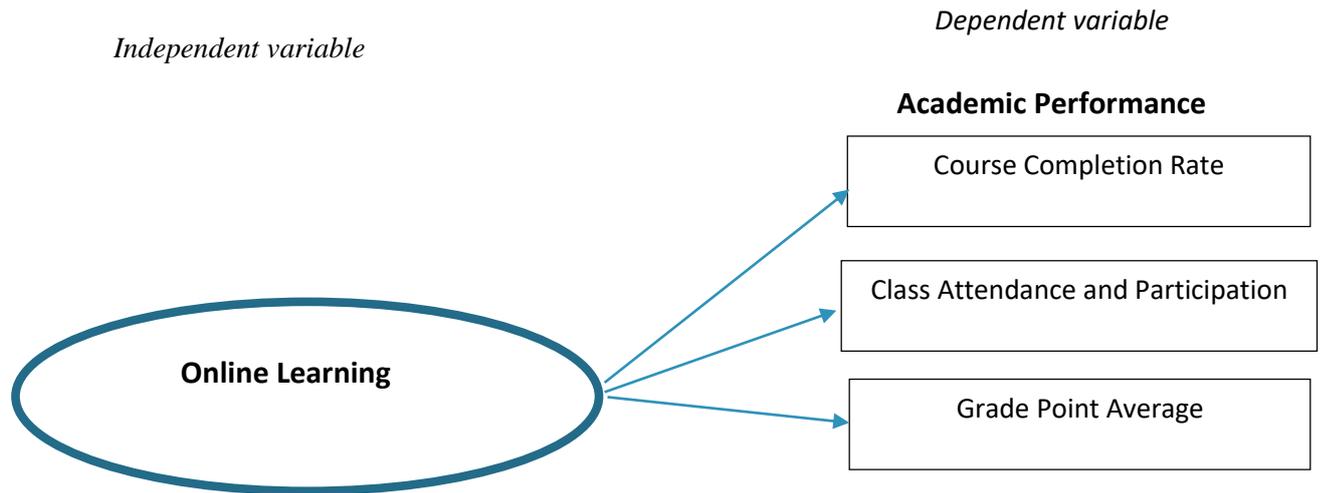
Class attendance and participation are critical components of academic success, reflecting a student's engagement and commitment to their educational journey. Class attendance refers to the regularity with which students attend scheduled instructional sessions, while class participation encompasses active involvement during these sessions, including contributing to discussions, asking questions, and collaborating in group activities (Babatunde, 2023). Moreover, active participation fosters critical thinking and enhances communication skills, contributing to a deeper understanding of the subject matter. Engaged students are more likely to retain information and apply learned concepts effectively. Conversely, absenteeism and lack of participation can lead to gaps in knowledge, decreased motivation, and lower academic achievement.

Grade Point Average

Grade Point Average (GPA) is a standardized metric that quantifies a student's academic performance by averaging the numerical values assigned to their earned grades over a specific period (Ajayi & Olufemi, 2021). Typically, grades are converted into a point scale commonly 4.0 in the United States—where, for example, an 'A' equates to 4.0, a 'B' to 3.0, and so forth. The GPA is calculated by multiplying the point value of each grade by the course's credit hours, summing these values, and then dividing by the total credit hours attempted. GPA serves as a critical indicator in educational contexts, influencing decisions related to college admissions, scholarship eligibility, and academic standing (Nwosu and Chidiebere, 2023).

Moreover, maintaining a high GPA can enhance employment prospects, as employers frequently consider academic performance during hiring processes. It's important to note that grading scales and GPA calculations can vary between institutions and countries. Therefore, understanding the specific criteria of each educational system is essential for accurate GPA interpretation.

Figure 2.1 Conceptual Framework



Source: Author's Conceptualization, 2025.

Theoretical Framework

The Technology Acceptance Model (TAM)

The theoretical framework underpinning this study is the Technology Acceptance Model (TAM), which laid the foundation on technological innovation on how users come to accept the innovations and use it to achieve their goals; this theory was propounded by Fred Davis. The degree to which a user believes that using a particular technology enhance performance depends on a number of factors influencing the decision towards the required service. According to Davis (1989), Perceived Usefulness (PU) is the degree to which a person believes that using a particular system would enhance his or her job performance while, Perceived Ease Of Use (PEOU) is the degree to which a person believes that using a particular system would be free from effort. According to TAM, whenever a user perceives an innovation in the technology the user believed in a positive direction that the technology can perform. Besides, the PU has a constant effect on attitude while PEOU affects attitude.

The relevance of this theory is the attitudes and intentions in the minds of decision makers with respect to e-learning which has changed the learning process significantly in our societies. Besides, the theory is relevant because if students embrace e-learning and plan strategically, the academic performance of the student will improve. Mohammed and Mohammed (2012) asserted that the behaviour of an individual results from conscious choices amongst options whose purpose is to maximize pleasure and minimize pains.

Empirical Review

Online Learning and Course Completion Rate

Aboderin (2017) examined the effect of e-learning on the academic performance of distance learners in a Nigerian University using NOUN, Abuja as a case study. The study adopted a mixed-method approach in data collection. Spearman's correlation coefficient, ANOVA, T-test and post-hoc Test were used to analyse data. Findings revealed that the student's academic performance were influenced by eight factors (the student's ICT literacy level, frequency

of engagement with ICT, marital status, previous academic performance, hours spent on internet per day, hours spent on computer per day and family size.

Elena *et al.* (2021) investigated the impact of e-learning on academic performance of students in higher learning with the aim to determine the correlation between e-learning and academic achievement of students in higher learning. 150 observational studies carried in Russian educational institution were used. It was revealed that the usage of knowledge and communication technologies to boost e-learning increases the academic success of students. The shortcoming with this study as noticed by the current study was organizational policy for e-learning differ this alone would not be sufficient and justifiable for a study of this magnitude.

Allison *et al.* (2022) examined the role of e-learning on academic performance of undergraduate students of Kebbi State University of Science and Technology using a descriptive survey design. Data was collected using structured questionnaire and analyzed using mean and standard deviation. Findings of this study revealed that e-learning plays a positive role on academic performance of undergraduate students in the university.

Ezeude, Akonu and Okeke (2023) investigated the impact of e-learning platforms on academic Performance of undergraduates in Nnamdi Azikiwe University, Awka. Descriptive statistics was employed using simple descriptive statistical tools, such as frequency distribution scale, likert scale and simple percentage. The results revealed that: a good number of e-learning platforms (Zoom, Microsoft Teams, Udemy, Coursera) have been utilized by undergraduates as shown by mean value of 3.21; and there were recognized strategies (provision of more e-learning facilities and internet services) that should adopted to improve the continuous utilization of e-learning platforms among undergraduates in Nnamdi Azikiwe University, Awka.

Online Learning and Class Attendance and Participation

Udjo and Amal (2018) evaluated the influence of web-based learning on academic staff at King Khalid University utilizing a sample of 163 respondents as our unit of analyses. Structural equation modeling (SEM) was employed to test the hypothesized model. The results indicate that our hypothesized model reasonably fitted the data collected and five of the nine hypotheses were refuted.

Using the structural equation modeling, Gopal *et al.* (2021) sought to identify the factors affecting students' satisfaction and performance regarding online classes during the pandemic period of COVID-19 and to establish the relationship between these variables. The study is quantitative in nature. Structural equation modeling was used to analyze the proposed hypotheses. The results show that four independent factors used in the study viz. quality of instructor, course design, prompt feedback, and expectation of students positively impact students' satisfaction and further student's satisfaction positively impact students' performance.

Egoigwe *et al.* (2020) investigated the impact of e-learning on academic performance of postgraduate students in higher institution in Nigeria with the aim to examine the impact of e-learning on academic performance of postgraduate students in higher institution in Nigeria. Descriptive survey design was used with a population of 850 respondents. The study discovered that e-learning has positive impact on academic performance of postgraduate

students in higher institutions. The study recommended that government should ensure a maximum standard set for institutions to get computer and internet facilities to improve e-learning. One major shortcoming with the study as observed by the current study was the methodology used to collect the data was not justified.

Online Learning and Grade Point Average

Aliyu, Onuigwe & Hassan (2021) explored the effect of e – Learning on Academic Performance of Students in Nasarawa State University, Keffi. Survey method was used and data for the work were obtained through questionnaire which was analyzed using descriptive statistics. The findings revealed that perception about e-learning, adoption of e-learning and environmental factors has affected the performance of students in Nasarawa State University.

Nwakoby and Okoye (2020) examined the effect of E-learning on students' academic performance in Enugu State tertiary institutions. Data were statistically analyzed using regression analysis. The result revealed that e-learning has a significant positive effect on academic performance among students of tertiary institutions in Enugu, Nigeria. Since e-learning is a welcome development, the tertiary institution management should ensure adequate logistics for E-learning of their students; this will enhance the students' academic performance.

Ubogu (2023) examined the E-learning in a Nigerian university: Implication to higher institution students' self-efficacy and academic performance during COVID-19. Descriptive survey research design was employed. The findings of the study revealed that e-learning due to the unprecedented COVID-19 pandemic negatively affects student's self-efficacy. Besides the study revealed significant differences on the activity's students' carryout (e-learning) to boost their self-efficacy across genders.

Gap in Empirical Review

From the empirical review, we can see that most of the studies were done outside Nigeria as it relates to online /e-learning platform while few others were conducted in Nigeria. From the review, none of the studies focused on effect of online learning on academic performance of students in tertiary institutions in Benue State, Nigeria. This study therefore filled that gap.

Methodology

Research Design

A descriptive survey design was used for the study. This research design was complemented with qualitative research method.

Area of the Study

The study was conducted in three higher institutions in Benue State. Benue State University (BSU), National Open University Otukpo Study Centre, National Open University Makurdi.

Sources of Data

Data for the study was collected mainly through primary and secondary sources. Primary data were collected through the use of structured questionnaire, while secondary data were collected through published literature.

Population of the Study

The population of the study includes all the students of distance learning programmes in the three schools under study. The target population of the study was 2003.

Table 3.1: Population distribution of academic staff

| Institutions | Population |
|---|-------------------|
| Benue State University | 762 |
| National Open University Otuokpo Study Centre | 691 |
| National Open University, Makurdi | 550 |
| Total | 2003 |

Source: Academic Planning Department (2025)

3.5 Determination of Sample Size

In determining the sample size, the researcher used Taro Yamane formula (1967) as follows:

The formula $n = \frac{N}{1 + Ne^2}$

Where:

N = population, 1 = constant, E = Degree of error (i.e. 5% or 0.05)

The sample size is computed thus:

$$n = \frac{2003}{1 + 2003(0.05)^2}$$

$$n = \frac{2003}{6.0075} = 333.6$$

$$n = \text{approximately } 334$$

Therefore, the sample size is 334

Sampling Technique

Simple random sampling technique was used in selecting the respondents who were useful to this study. Thus, the 335 participants which were made of distance learning students had equal chances of being selected as respondents.

Method of Data Collection

The instrument used for data collection was the questionnaire. The questionnaire instrument was in a 5-point Likert scale structured form. The questionnaire items were drawn from the objectives, research questions and hypotheses developed for the study.

Validity of the Instrument

The contents of the questionnaire were validated by experts in the field of measurement and evaluation. The researcher therefore claimed the validity of the instrument.

Reliability of the Instrument

The researcher pre-tested (20) copies of the test instrument before the actual study. The response that was obtained from the pre-study was subjected to Cronbach Alpha’s internal consistency test by using SPSS (statistical package for social sciences). That indicated that the items on the questionnaire were internally consistent and reliable.

Method of Data Analysis

The collected data for the study was analysed through the use of mean score. The z-test analysis technique was applied in testing the hypotheses.

Data Presentation and Analysis

Data Presentation

A total of three hundred and thirty-five (335) copies of questionnaire were distributed while three hundred (300) copies were retrieved and useful for the study.

Table 4.1: The extent to which online learning affect Course Completion Rate in tertiary institutions in Benue State, Nigeria

| S/N | Options | SA 5 | A 4 | U 3 | D 2 | SD 1 | Mean | Decision |
|-------------------|---|---------|--------|--------|--------|---------|-------------|----------|
| 1 | Provides learning opportunities to students in remote areas | 118 | 94 | 20 | 47 | 21 | 3.8 | Accepted |
| 2 | Interactive tools improve participation. | 104 | 90 | 20 | 52 | 34 | 3.6 | Accepted |
| 3 | Multimedia resources cater to different learning styles. | 68 | 124 | 7 | 73 | 28 | 3.4 | Accepted |
| 4 | Interactive quizzes enhance learning retention. | 93 | 100 | - | 80 | 27 | 3.5 | Accepted |
| 5 | Well-paced modules prevent information overload. | 116 | 99 | - | 14 | 71 | 3.6 | Accepted |
| Grand Mean | | | | | | | 3.64 | |

Source: Field Survey, 2025

Table 4.1 is assumed to be indicative responses on the extent to which online learning affect Course Completion Rate in tertiary institutions in Benue State, Nigeria with mean score of above 3.0. From the table, we can see that all the items in the table were accepted. The grand mean score of 3.64 is a strong indication that the respondents affirmed that online learning to a high extent affected Course Completion Rate in tertiary institutions in Benue State, Nigeria.

Table 4.2: Effect that online learning has on Class Attendance and Participation in tertiary institutions in Benue State, Nigeria

| S/N | Options | SA 5 | A 4 | U 3 | D 2 | SD 1 | Mean | Decision |
|-------------------|---|---------|--------|--------|--------|---------|-------------|----------|
| 1 | Students can attend classes from anywhere. | 134 | 137 | 14 | 15 | - | 4.2 | Accepted |
| 2 | Reduces absenteeism due to transportation challenges. | 96 | 120 | - | 68 | 16 | 3.7 | Accepted |
| 3 | Provides access to recorded lectures for those who miss live sessions. | 102 | 121 | 14 | 56 | 7 | 3.8 | Accepted |
| 4 | Encourages participation at students' preferred times. | 118 | 112 | 14 | 37 | 19 | 3.9 | Accepted |
| 5 | Enables students with personal or work commitments to balance learning. | 58 | 180 | 20 | 28 | 14 | 3.8 | Accepted |
| Grand Mean | | | | | | | 3.91 | |

Source: Field Survey, 2025

Table 4.2 is assumed to be indicative responses on effect that online learning has on Class Attendance and Participation in tertiary institutions in Benue State, Nigeria with mean score of above 3.0. With regards to items, the respondents all agreed that online learning has affected to reasonable extent Class Attendance and Participation in tertiary institutions in Benue State.

Table 4.3: How online learning has affected Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria

| S/N | Options | SA 5 | A 4 | U 3 | D 2 | SD 1 | Mean | Decision |
|-------------------|--|---------|--------|--------|--------|---------|-------------|----------|
| 1 | Students can study at their own pace, leading to better understanding. | 118 | 97 | 16 | 45 | 24 | 3.6 | Accepted |
| 2 | Allows access to recorded lectures for review. | 128 | 95 | 9 | 47 | 21 | 3.8 | Accepted |
| 3 | Reduces stress associated with rigid class schedules. | 104 | 99 | 11 | 52 | 34 | 3.6 | Accepted |
| 4 | Enables students to balance academics with personal responsibilities. | 68 | 124 | 7 | 73 | 28 | 3.4 | Accepted |
| 5 | Encourages self-directed learning, which enhances GPA. | 93 | 100 | - | 80 | 27 | 3.5 | Accepted |
| Grand Mean | | | | | | | 3.57 | |

Source: Field Survey, 2025

Table 4.3 is assumed to be indicative responses on how online learning has affected Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria with mean score of above 3.0. The items listed in the table were found to be positive in all standard. The grand mean score of 3.57 affirmed that online learning has affected Grade Point Average (GPA) of students in tertiary institutions in Benue State, Nigeria to a high extent.

Test of Hypotheses

The hypotheses were tested using z-normal distribution (z-test).

Test of Hypothesis One

Restatement of Hypothesis One

Ho: Online learning has no significant effect on Course Completion Rate in tertiary institutions in Benue State, Nigeria.

| S/N | | N | Mean | Std. Deviation | z-score | Z _{0.05} | Decision rule for hypothesis |
|-----|--|-----|------|----------------|---------|-------------------|------------------------------|
| 1 | Multimedia resources cater to different learning styles. | 300 | 3.9 | 0.359 | 33.38 | 2.33 | Accepted |

Source: Author's compilation SPSS 23.0 Output

From table 4.4, the z-score for the responses to the questionnaire items are computed and juxtaposed with the z-table value of ± 2.33 at 2% significance level. The analysis indicates that the proposition that Online learning has a significant effect on Course Completion Rate in tertiary institutions in Benue State, Nigeria is accepted at 2% significance level as the computed, z value of 33.38 exceeds the table value of ± 2.33 .

Decision: As seen from Table 4.4 and the subsequent analysis of result, the computed Z-scores for the statements exceeded the table z value of ± 2.33 . at 2% significance level. Therefore, we reject the null hypothesis and accept that online learning has a significant positive effect on Course Completion Rate in tertiary institutions in Benue State, Nigeria.

Hypothesis Two

Restatement of Hypothesis Two

Ho: Online learning does not have a significant effect on Class Attendance and Participation in tertiary institutions in Benue State, Nigeria

Table 4.5: Normalizes z-score for mean responses

| S/N | | N | Mean | Std. Deviation | z-score | Z _{0.05} | Decision rule for hypothesis |
|-----|--|-----|-------|----------------|---------|-------------------|------------------------------|
| 1 | Students can attend classes from anywhere. | 300 | 3.775 | 0.6924 | 36.30 | 2.33 | Accepted |

Source: Author's compilation SPSS 23.0 Output

From table 4.5, the z-score for the responses to the questionnaire items are computed and juxtaposed with the z-table value of ± 2.33 at 2% significance level. The analysis indicates that the proposition that online learning does have a significant effect on Class Attendance and Participation in tertiary institutions in Benue State, Nigeria was accepted at 2% significance level as the computed, z value of 36.30 exceeded the table value of ± 2.33 .

Decision: As seen from Table 4.5 and the subsequent analysis of result, the computed Z-scores (36.30) for the statements exceeded the table z value of ± 2.33 . at 2% significance level. Therefore, we reject the null hypothesis and accept that online learning does have a significant positive effect on Class Attendance and Participation in tertiary institutions in Benue State, Nigeria

Hypothesis Three

Restatement of Hypothesis three

i: Online learning has no significant effect on Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria.

Table 4.6: Normalizes z-score for mean responses

| S/N | | N | Mean | Std. Deviation | z-score | Z _{0.05} | Decision rule for hypothesis |
|-----|---|-----|------|----------------|---------|-------------------|------------------------------|
| 1 | Enables students to balance academics with personal responsibilities. | 300 | 3.85 | 0.480 | 33.07 | 2.33 | Accepted |

Source: Author's compilation SPSS 22.0 Output

From table 4.6, the z-score for the responses to the questionnaire items are computed and juxtaposed with the z-table value of ± 2.33 at 2% significance level. The analysis indicates that the proposition that online learning has a significant effect on Grade Point Average (GPA) of students in tertiary institutions in Benue State, Nigeria is accepted at 2% significance level as the computed; z value of 33.07 exceeded the table value of ± 2.33 .

Decision: As seen from Table 4.6 and the subsequent analysis of result, the computed Z-scores (33.07) for the statements exceeded the table z value of ± 2.33 at 2% significance level. Therefore, we reject the null hypothesis and accept that online learning has a significant positive effect on Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria.

Discussion of Findings

Hi: *Online learning has no significant effect on Course Completion Rate in tertiary institutions in Benue State, Nigeria*

The result of hypothesis one showed that online learning has a significant positive effect on Course Completion Rate in tertiary institutions in Benue State, Nigeria. This is where z value of 36.30 exceeded the table value of ± 2.33 . Online learning has notably influenced course completion rates in tertiary institutions in Benue State, Nigeria. The flexibility inherent in e-learning platforms allows students to access course materials at their convenience, accommodating diverse schedules and potentially enhancing completion rates. However, empirical evidence presents a nuanced picture. A study assessing e-learning's impact during the COVID-19 pandemic revealed that online methods posed challenges for both lecturers and students, as adapting to new learning modalities required time and effort. These findings collectively suggest that while online learning has the potential to improve course completion rates, its success is contingent upon addressing challenges related to adaptation, student preparedness, and infrastructure support. We must note also that many students have ended up not completing their courses within the stipulated academic time because of environmental factors including economic reasons. Most students live far away from the campuses where they engage in various economic activities to make two ends meet. They therefore transport themselves to school. But due to severe insecurity situation in the country, it is a risk plying the road on a daily basis because one wants to attend classes and complete their courses. In view of that, many universities witness many drop outs. These are students that could not complete their courses thereby cutting their dreams of becoming graduates or getting higher degrees.

However, with online learning innovation, this challenge has been abated. From the comfort of one's home or office, students do attend lectures and complete their courses adequately thereby graduating at stipulated time.

Ho: *Online learning does not have a significant effect on Class Attendance and Participation in tertiary institutions in Benue State, Nigeria*

The result of hypothesis two revealed that online learning does have a significant positive effect on class attendance and participation in tertiary institutions in Benue State, Nigeria. This is evident from the fact that the computed Z-scores (36.30) for the statements exceeded the table z value of ± 2.33 at 2% significance level. Recent studies indicate that online learning does significantly impact class attendance and participation in tertiary institutions in Benue State, Nigeria. Research focusing on Nigerian students during the COVID-19 pandemic revealed that students adapted to online platforms like Zoom and Moodle without difficulty, maintaining active engagement in their courses. This suggests that the shift to online learning did not adversely affect their participation levels. Additionally, a study on the influence of social media usage on secondary school students' time management and class participation in Makurdi found no significant negative impact, implying that digital platforms, when used

appropriately, do not hinder student engagement. These findings collectively suggest that online learning platforms, when effectively implemented, do not detract from class attendance and participation among students in Benue State's tertiary institutions.

Prior to online learning, lecturers were reporting low attendance to classes. This is caused by many factors including economic distractions. Many students engage in one job or the other to support their parents in meeting up their financial requirements and skips lectures along the line. This results in poor academic performance and low quality of graduates. But, this research finds out that with online learning, attendance to class is very high irrespective of economic engagements by students because it is convenient. Students who are shy and less confident in themselves to participate in class use the protection of online method of learning to participate fully in class. This finding is in consonance with findings of Egoigwe *et al* (2020) who aver that e-learning has positive impact on academic performance through improvement in class attendance and participation.

Ho: Online learning has no significant effect on Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria.

The finding further affirms the opinion of the respondents in table 4.3 where the respondents agree that online learning has a significant positive effect on Grade Point Average (GPA) of students in tertiary institutions in Benue State, Nigeria. Online learning has significantly influenced Grade Point Averages (GPAs) attained by students in tertiary institutions in Benue State, Nigeria. A study assessing the functionality and adequacy of ICT tools at Benue State University, Makurdi, highlighted that effective use of these tools enhances web-based learning, potentially improving academic performance. However, challenges such as limited internet access and insufficient digital literacy can hinder students' ability to fully engage with online learning platforms, potentially affecting their GPAs. Additionally, research on the impact of e-learning on academic staff performance in Benue State's tertiary institutions indicates that the effectiveness of online learning is closely linked to the proficiency of educators in utilizing e-learning tools. These findings suggest that while online learning has the potential to enhance GPAs, its success depends on addressing the identified challenges.

Findings show also that students' Grade Point Average (GPA) tremendously improved in recent times due to the introduction of online learning. Nwakoby & Okoye (2020) and Ubogu (2023) agree that e-learning has positive effect on academic performance of students especially through high Grade Point Average.

Summary of findings, Conclusion and Recommendations

Summary of Findings

The following findings were summarized thus:

- i. Online learning has a significant positive effect on Course Completion Rate in tertiary institutions in Benue State, Nigeria. This affirms that e-learning platforms allow students to access course materials at their convenience, accommodating diverse schedules and potentially enhancing completion rates.

- ii. Online learning does have a significant positive effect on class attendance and participation in tertiary institutions in Benue State, Nigeria. This indicated that with online learning, students can attend classes from anywhere.
- iii. Lastly, online learning has a significant positive effect on Grade Point Average (GPA) attained by students in tertiary institutions in Benue State, Nigeria. This suggests that with online learning, students can study at their own pace, leading to better understanding and results.

Conclusion

The study concluded that online learning has a significant positive impact on the academic performance of students in tertiary institutions in Benue State, Nigeria. It enhances flexibility, accessibility, and independent learning, which can improve students' engagement and academic outcomes. However, challenges such as poor internet connectivity, inadequate digital literacy, and limited access to technological resources hinder its full effectiveness. While some students benefit from self-paced learning, others struggle with motivation and comprehension. To maximize the benefits of online learning, institutions must invest in infrastructure, training, and student support systems. Future research should explore strategies to bridge digital learning gaps.

Recommendations

Given the findings of the study, the following recommendations were made:

- i. Tertiary institutions in Benue State should invest in reliable digital infrastructure, including high-speed internet and functional e-learning platforms. Government and private stakeholders must collaborate to provide affordable internet access to students, ensuring seamless participation in online learning without interruptions caused by network instability or limited technological resources.
- ii. Universities should implement comprehensive digital literacy programs for both students and lecturers. Training sessions on effective e-learning engagement, online assessments, and virtual collaboration will enhance academic performance. Institutions must also provide technical support services to address challenges faced by students while using digital learning tools and platforms.
- iii. To improve academic performance, institutions should develop interactive online learning strategies, including discussion forums, virtual group work, and real-time assessments. Regular monitoring of student progress and participation through data-driven analytics will help educators identify struggling students early and provide necessary academic support to enhance learning outcomes.

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