UNJPE

*University of Nigeria Journal of Political Economy: Volume 11, number 1, 228-240 (2021)*

# Effect of e – Learning on Academic Performance of Students in Nasarawa State University, Keffi

**Aliyu Tanko Ahmed[1], Gladys Chiebonam Onuigwe[2] & Hassan Isiaka Aliyu[3]**

[1]Department of Business Administration & Management, Federal Polytechnic, Nasarawa
[2]Department of Accountancy, Federal Polytechnic, Nasarawa
[3]Department of Humanities and Social Science, Federal Polytechnic, Nasarawa, Nasarawa State,
***Corresponding author*:** babanmusa170@gmail.com

## Abstract

*The outcome of e-learning has changed the way everything is done in the educational sector, most especially academic activities and students are expected to receive quality services at the time that the services is seriously needed but this is often not achieved in practice because factors like perception about e-learning, adoption of e-learning and environmental factors has seriously affected academic performance of students. The aim of the study is to assess 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. A population of 6,800 students and a sample of 378 respondents were drawn using Yamane's (1967) simplified formulae. 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. Based on the findings, the study recommends that governments should improve awareness to educate the public on perception about e-learning, every stakeholder should embrace the adoption of e-learning and the institution should provide conducive environment to sustain and retained their customers.*

**Keywords:** academic performance, e-learning, perception, service quality, technological skills

## Introduction

Prior to the introduction of e-learning in Nigerian educational sector, numerous students were sceptical about it but with the outcome of coronavirus disease 2019 (covid-19) pandemic the e-learning become necessary in the service organizations such as schools. In fact, the adoption of e-learning has increased and it provides new insight on how to solve human and organizational problems using electronic device. Also, it encourages a paradigm shift from the traditional to technological towards improving quality services. The common e-learning used by students are synchronous and asynchronous e-learning. Synchronous e-learning refers to a situation where learners and teacher interact with each other in real time from different locations while, asynchronous e-learning is situation where learners and teacher are not online at the

same time but learners can complete self-paced online training. Technology has revolutionized numerous sectors and learning systems become more popular as several schools have replaced physical books with digital content that students can easily access on their electronic devices. In the same vein, the extent to which educational sector use e-learning platforms such as YouTube, Virtual learning environment (VLE), Podcasts, Massive online open courses (MOODs), Forums, Virtual instructor-led training (VILT), etc. continue to attract empirical and theoretical debate. Ogwuche and Ahmed (2018) asserts that information accessed through digital technologies can promote innovation, increase productivity and enrich the quality of lives.

The e-learning had changed the learning process in the tertiary institutions; it is one of the emerging trends that could be harnessed to improve teaching and learning. Academic performance of students consists of different variables and if the variables are critically solving it can improve the quality of services in the institution. Consider for example, good and hygiene studying environment, technological skills, recognition, etc. can significantly improve academic performance of student in the institution. Besides, academic performance can be enhanced if opportunities are created for students to learn and motivate them to come up with something good and unique.

Institutions of higher learning are expected to embrace e-learning to enhance performance but factors such as perception about e – learning, adoption of e – learning, environmental factors, technological skills and service quality has seriously affected academic performance of students with an alarming increase of economic consequences. NSUK has employ several strategies to improve and sustain e-learning such as using e-learning platforms such as YouTube, Virtual learning environment (VLE), Virtual instructor-led training (VILT) among others, despite all these efforts e-learning has strong influence on academic activities.

The aim of the study is to assess the effect of e – learning on academic performance of students in Nasarawa State University Keffi. The specific objectives are:

(i). Examine the effect of perception about e-learning on academic performance of students in NSUK.

(ii). Determine the effect of adoption of e-learning on academic performance of students in NSUK.

(iii). Investigates the effect of environmental factors on academic performance of students in NSUK.

The following questions are formulated to guide the study:

(i). What is the effect of perception about e-learning on academic performance of students in NSUK?

(ii). How suitable is the adoption of e-learning on academic performance of students in NSUK?

(iii). What is the effect of environmental factors on academic performance of students in NSUK?

The following null hypotheses were developed and tested:

**$H_{01}$:** Perception about e-learning does not have effect on academic performance of students in NSUK.

**$H_{02}$:** Adoption of e-learning does not have effect on academic performance of students in NSUK.

**$H_{03}$:** Environmental factors do not have effect on academic performance of students in NSUK.

The significance of this study is to ensure that perception towards e-learning in today's competitive environment is enhanced and the use of e-learning in today's competitive environment will benefit the management of NSUK, students and other stakeholders in the study area and beyond.

## Literature Review

Elena et al. (2021) asserted that e-learning is a technology that enables students to learn through web. Ahmed et al. (2020) defined e-learning as a formalized teaching using electronics technologies different from the traditional classroom and in most cases delivery of services is made to numerous recipients simultaneously. Egoigwe et al. (2020) defined e-learning as the use of information and communication technology such as internet, computer, mobile phone, radio, television to enhance teaching and learning activities. Zare et al. (2016) defined e-learning as one of the most important learning environments in the information era. Oye et al. (2011) asserted that e-learning is using information and communication technology to enhance and support teaching and learning process.

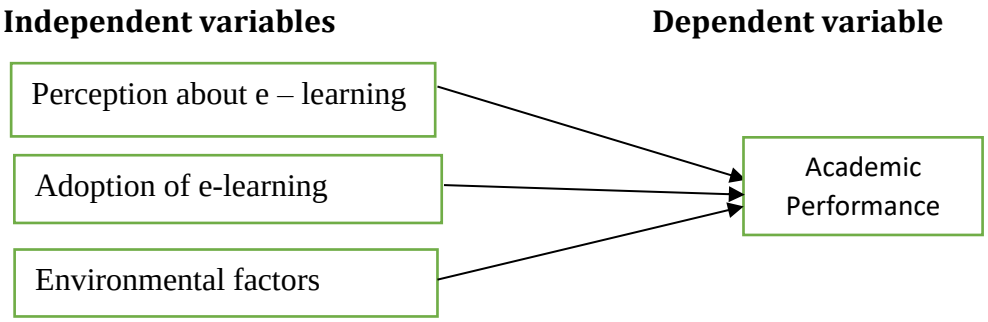



Figure 1: Conceptual framework

Perception about e-learning has to do with behaviour formed by individual student which may be positive or negative besides, student may develop keenly interest towards e-learning and vice versa towards academic performance. The adoption of e-learning in tertiary institutions becomes necessary to improve performance and creates an avenue through which organizational tasks can be performed with minimal stress due to technological innovations. Environmental factors have changed the landscape of classroom learning at tertiary institutions which brought about development of e-learning. Technological skills are essential element that must be inculcated on students to improve quality performance and if students are given required skills, it can enhance their academic performance. Service quality can be measured using reliability and empathy as it relates to academic performance of students besides, e-learning required quality services to enhance performance.

Empirical studies carried out over the years in different places, using various methodologies and variables showed mixed or inconclusive results which give room for further research using different variables and methodologies. Certain factors such as the study objectives, the constraints, the era, the location, etc. accounted for the similarities and differences. Besides, empirical studies such as Elena et al. (2021), Egoigwe et al. (2020), Zare et al. (2016), Thakare et al. (2016) and Oye et al. (2011) were also carried out on e-learning to improve academic performance.

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.

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.

Zare et al. (2016), conducted a research on impact of e-learning on university students' academic achievement and creativity with the objective to investigates the impact of e-learning on creativity and content knowledge of Chemistry students at the Payame Noor University of Hamedan, Iran. Pre-test/post-test experimental design with a control group was used with a population of 100 pure Chemistry students. The study discovered that experimental groups in the pre-test are not similar to each other and the post-test groups are much higher than the control group. The study concluded that e-learning is effective for knowledge and creativity acquisitions. The study recommended that e-learning opportunities should be provided for wider audiences. One major shortcoming with this study as observed by the current study was the methodology used to obtain the sample was not clearly justified, the e-learning policy in each organization cannot be generalized and this alone would not be sufficient and justifiable for a study of this magnitude.

Thakare et al. (2016), conducted a research on societal impact of e-learning using Indian perspective with the objective to investigates e-learning solutions and changes faced in educational systems. It was revealed that schools and colleges are turning into e-learning rapidly. The study recommended that strategic planning should be enhanced towards e-learning environment. One major shortcoming with this study as observed by

the current study was the study did not take cognizance of environmental factor in other areas and the duration was not clearly specified this alone would not be sufficient and justifiable for a study of this magnitude.

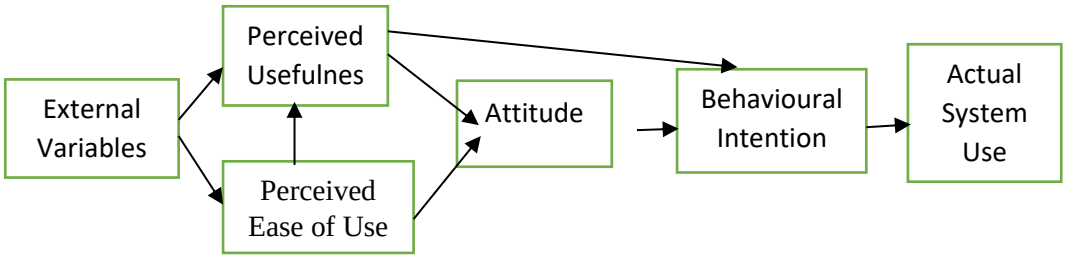
Oye et al. (2011), conducted research on challenges of e-learning in Nigerian university education based on the experience of developed countries with the objective to review challenges of e-learning in Nigerian university education based on the experience of United Kingdom, Austrilia, Korea and France. The survey shows that the selected countries have vision and action plans for e-learning, good policies and financial support and embark on awareness programs. The study recommended that in government should make internet connectivity a priority for higher education. One major shortcoming with this study as observed by the current study was the study did not justify the choice of four countries used and methodology used to obtain the sample was not clearly justified this alone would not be sufficient and justifiable for a study of this magnitude.

**Theoretical Framework**

The theoretical framework underpinnings this study is 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 factor 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 student 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 result from conscious choices amongst options whose purpose is to maximize pleasure and minimize pains. The TAM is depicted below:




Source: www.ischool.utexas.edu

**Methodology**

This study used survey method with a total of 6,800 respondents selected at random from students of Faculty of Administration in Nasarawa State University Keffi (NSUK) respectively. The choice of Faculty of Administration in NSUK was based on their population and commercial activities in the campus.

The study sample was determined using Yamane's (1967) simplified formulae. The Yamane (1967) formula is given as: $n = N/1 + Ne^2$

Where: **n** = the calculated sample size, **N** = the population size and **e** = the acceptable sampling error and the choice of 0.05 level of significance is purely and exclusive decision of researchers.

Thus, $n = \frac{6800}{1 + 6800(0.05)^2}$ $n = \frac{6800}{1 + 6800(0.0025)}$ $n = \frac{6800}{1 + 17}$ $n = \frac{6800}{18}$ n = 377.7777 n = 378 respondents.

**Results and Discussion**

This section contains the presentation and the analysis of data as well as the discussion of the findings. The administered copies of questionnaire were designed in line with the research questions, objectives and hypotheses in order to ascertain the relationship among the different adopted variables of e-learning and academic performance of students in NSUK.

**Table 1 Return Rate of Respondents**

| *Responses* | *Questionnaire Administered* | *Questionnaire Not Returned* | *Questionnaire Returned* | *Percentage of Total Questionnaire Returned* |
|---|---|---|---|---|
| AD | 63 | 6 | 57 | 17.1 |
| BAD | 63 | 3 | 60 | 18.1 |
| BFD | 63 | 9 | 54 | 16.3 |
| ED | 63 | 10 | 53 | 15.9 |
| PAD | 63 | 5 | 58 | 17.5 |
| TD | 63 | 13 | 50 | 15.1 |
| Total | 378 | 46 | 332 | 100 |

***Source:*** Field Survey, 2021

Table 1 shows response rate on numbers of questionnaires administered to students of Faculty of Administration in NSUK whom were the respondents for this study. It reveals that 63 questionnaires were administered to students of Accounting Department (AD), 63 questionnaires were administered to students of Business Administration Department (BAD), 63 questionnaires were administered to students of Banking and Finance Department (BFD), 63 questionnaires were administered to students of Entrepreneurship Department (ED), 63 questionnaires were administered to students of Public Administration Department (PAD) and 63 questionnaires were administered to students of Taxation Department (TD). Furthermore, 17.1% of the total questionnaires returned were from AD, 18.1% of the total questionnaires returned were from BAD, 16.3% of the total questionnaires returned were from BFD, 15.9% of the total questionnaires returned were from ED, 17.5% of the total questionnaires returned were from PAD while, 15.1% of the total questionnaires returned were from TD. This table also shows that out of a total of 378 questionnaires administered, 332 representing 87.8% were returned and that is sufficient enough for the continuation of analysis.

**Table 2**: Demographic Characteristics of Respondents

| Variables | Respondents' Category | Freq. | Percentages |
|---|---|---|---|
| Gender | Male | 93 | 32.6 |
| | Female | 192 | 67.4 |
| | **Total** | **285** | **100** |
| Age | 20-30 years | 106 | 37.2 |
| | 31-40 years | 82 | 28.8 |
| | 41-50 years | 65 | 22.8 |
| | 51 years and above | 32 | 11.2 |
| | **Total** | **285** | **100** |
| Course | B.Sc | 137 | 48.1 |
| | M.Sc | 98 | 34.4 |
| | PhD | 50 | 17.5 |
| | **Total** | **285** | **100** |

**Source:** *Field Survey, 2021*

Table 2 shows the demographic characteristics of the respondents of this study, 93 respondents representing 32.6% are male while 192 of them representing 67.4% are female. The responses showed preponderance of female more than male in the Faculty of Administration of NSUK. The age brackets of these respondents showed that 106 are below 20 – 30 years of age representing 37.2% while 82, representing 28.8% being between the ages of 31 and 40 years. 22.8% and 11.2% of the respondents are between the ages of 41 and 50, and above 51 years respectively. Further revelation by the table showed that 137 of these respondents representing 48.1% are studying B.Sc in Accounting, Business Administration, Banking and Finance, Entrepreneurship, Public Administration or Taxation. Besides, 98 of them representing 34.4% are studying M.Sc in Accounting, Business Administration, Banking and Finance, Entrepreneurship, Public Administration or Taxation. In addition, the table also revealed 50 or 17.5% are studying PhD in Accounting, Business Administration, Banking and Finance, Entrepreneurship, Public Administration or Taxation.

**Table 3 Descriptive Statistics for Perception about e-learning**

| *S/No.* | *Statement* | *SA* | *A* | *UD* | *D* | *SD* | *Total* | *Mean* | *Standard Deviation* | *Decision* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Easy to use | 41(12.3) | 214(64.5) | 18(5.4) | 25(7.5) | 34(10.2) | 332 | 3.13 | 1.38 | Accept |
| 2 | Undergo stages before using e-learning | 55(16.6) | 186(56.0) | 22(6.6) | 32(9.6) | 37(11.1) | 332 | 3.22 | 1.24 | Accept |
| 3 | Improve efficiency and enhance effectiveness | 66(19.9) | 205(61.7) | 12(3.6) | 28(8.4) | 21(6.3) | 332 | 3.12 | 1.48 | Accept |

***Source:*** Field Survey, 2021

The data in Table 3 shows the percentage, mean and standard deviation scores of the responses obtained from respondents. The response indicates that the respondents agreed that it is easy to use with a mean value of 3.13 and a standard deviation of 1.38. Also, perception about e-learning undergo stages before using it with a mean of 3.22 and a standard deviation of 1.24. The respondents agreed that it improves efficiency and enhanced effectiveness with a mean value of 3.12 and a standard deviation of 1.48.

**Table 4 Descriptive Statistics for Adoption of e-learning**

| *S/No.* | *Statement* | *SA* | *A* | *UD* | *D* | *SD* | *Total* | *Mean* | *Standard Deviation* | *Decision* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I have confidence using e-learning | 54(16.2) | 153(46.1) | 41(12.3) | 48(14.5) | 36(10.8) | 332 | 3.53 | 1.21 | Accept |
| 2 | Reliability of e-learning compare to analog | 28(8.4) | 162(48.8) | 31(9.3) | 19(5.7) | 92(27.7) | 332 | 3.18 | 1.33 | Accept |
| 3 | I use electronic devices for my daily learning | 51(15.4) | 177(53.3) | 9(2.7) | 10(3.0) | 85(25.6) | 332 | 3.15 | 1.23 | Accept |

*Source:* Field Survey, 2021

The response in Table 4 shows that the respondents agreed that they have confidence using e-learning with a mean of 3.53 and a standard deviation of 1.21. the reliability of e-learning compares to analog with a mean of 3.18 and a standard deviation of 1.33. Also, using electronic devices with a mean of 3.15 and a standard deviation of 1.23.

**Table 5 Descriptive Statistics for Environmental factors affecting e-learning**

| *S/No.* | *Statement* | *SA* | *A* | *UD* | *D* | *SD* | *Total* | *Mean* | *Standard Deviation* | *Decision* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Service delivery is unnecessarily slow | 41(12.3) | 85(25.6) | 38(11.4) | 46(13.9) | 122(36.7) | 332 | 3.29 | 1.19 | Accept |
| 2 | Delay is caused by environmental factors | 58(17.5) | 134(40.4) | 48(14.4) | 40(12.0) | 52(15.7) | 332 | 3.06 | 1.36 | Accept |
| 3 | Provide adequate information | 60(18.1) | 202(60.8) | 15(4.5) | 28(8.4) | 27(8.1) | 332 | 3.25 | 1.25 | Accept |

*Source:* Field Survey, 2021

The data in Table 5 shows that the respondents agreed that service delivery is unnecessarily slow with a mean value of 3.29 and a standard deviation of 1.19. Delay is caused by environmental factors with a mean of 3.06 and a standard deviation of 1.36. The respondents agreed that it provides adequate information with a mean value of 3.25 and a standard deviation of 1.25.

## Conclusion and Recommendations

The results and analyses revealed that, perception about e-learning, adoption of e-learning and environmental factors positively affects e – learning in NSUK. The findings showed that perception about e-learning, adoption of e-learning and environmental factors has affected the academic performance of students in NSUK. The study concluded that e-learning can enhanced academic performance of students if required attention is given.

In light of these, the study recommends that governments should improve awareness to educate the public on perception about e-learning, every stakeholder should embrace the adoption of e-learning and the institution should provide conducive environment to sustain and retained their customers.

## References

Ahmed, A. T., Ahmed, A. T. & Gambo, M. I. (2020). Effect of e-learning and digital cultures in Nasarawa metropolis during coronavirus disease 2019 pandemic. *1st Multi-Disciplinary International Virtual Conference organized by Centre for Distance and e-learning University of Nigeria.*

Casey, M. (2017). Theory of human service delivery. Retrieved from https://bizfluent.com/info-8583690

Davis, B. F. & Warshaw, B. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Journal of Management Science, 35, 982 – 1003.*

Egoigwe, S. V., Nweke, P. O., Wada, I. B., Ali, A. A. & Madu, C. V. (2020). Impact of e-learning on academic performance of postgraduate students in higher institution in Nigeria. *Journal of Engineering and Applied Sciences, 15(14), 2863 – 2868.*

Elena, Y. Z., Zubanova, S. G., Federova, N. V. & Sivakova, Y. E. (2021). Education policy: The impact of e-learning on academic performance. *International Scientific Conference Energy Management of Municipal Facilities and Environmental Technologies, 1 – 7.*

Mohammed, U. D. & Mohammed, N., (2012). *Management theory*; Abuja, Nigeria: Olly Prints Limited.

Ogwuche, M. A., & Ahmed, A. T. (2018). Impact of information and communications technology on teaching and learning in Nigerian tertiary institutions. *The Tin City Business Journal, 2(1), 42 – 48.*

Oye, N. D., Salleh, M. & Iahad, N. A. (2011). Challenges of e-learning in Nigerian university education based on the experience of developed countries. *International Journal of Managing Information Technology, 3(2), 39 – 48.*

Thakare, G. R., Sarate, G. G. & Chacharkar, D. Y. (2016). Societal impact of e-learning: Indian perspective. *International Journal of Advanced Research and Ideas in Education, 2(3), 4432 – 4435.*

Zare, M., Sarikhani, R., Salari, M. & Mansouri, V. (2016). The impact of e-learning on University students' academic achievement and creativity. *Journal of Technical Education and Training, 8(1), 25 – 33.*