**International Journal of Home Economics, Hospitality and Allied Research, 2(2): 149-161.**
**DOI: https://doi.org/10.57012/ijhhr.v2n2.011**
**Received: June 20, 2023**
**Revised: September 10, 2023**
**Accepted: November 28, 2023**
**Published: December 28, 2023**





***Original Research Report***

# Awareness and Utilization of E-Learning Technologies Among Vocational and Technical Education Students

**Calister L. Nwadi[1*], Blessing Ijeoma Attah[1], Esther Chioma Eze[1]**

[1]Department of Home Economics and Hospitality Management Education, University of Nigeria, Nsukka, Enugu State, Nigeria

***Correspondence:** Calister L. Nwadi, Department of Home Economics and Hospitality Management Education, University of Nigeria, Nsukka, Enugu State, Nigeria (Email: calister.nwadi@unn.edu.ng).

**Abstract:** The study investigated the awareness and utilization of e-learning technologies among vocational and technical education (VTE) students. A descriptive survey research design was used for this study, and the population consisted of 551 VTE students. A simple random sample of 62 VTE students was selected. The data collection instrument was a questionnaire. The reliability of the questionnaire was assessed using Cronbach's alpha analysis, and the reliability index was found to be within the acceptable limit of 0.70. An online survey using Google Forms was used to collect the data. The study tested two null hypotheses using binary logistic regression models based on age, department level of study, and devices owned. The data was analyzed using frequency, percentages, and mean. The major findings from the data analysis indicated that VTE students had an awareness and utilization rate of 84.8% for the e-learning website, 75.6% for Google Classroom, and 60.6% for smart boards and video conferencing. However, 24.4% of the students were still unaware of the Moodle Learning Management System and the Canvas e-learning platform at the University of Nigeria Nsukka. Based on these findings, it is recommended that VTE students receive proper training to effectively utilize the e-learning technologies available to them, which would aid in fostering creativity and innovation.

**Keywords**: Awareness, E-learning, Learning Management System, Online Learning

## 1. Introduction

E-learning has become a popular teaching strategy due to the rapid advancement of technology and internet infrastructure worldwide. It has proven to be transformative in overcoming challenges such as staff shortages, increased student numbers, limited teaching resources, and issues with time and space (Wang et al., 2021). Nworgu et al. (2014) defines e-learning as electronically aided learning and teaching methods that aim to generate knowledge based on the learner's unique experiences, practices, and knowledge. E-learning refers to the use of electronic devices to access educational content outside of a traditional classroom (Pei & Wu, 2019; Wang et al., 2021), typically in the form of online courses, programs, or degrees. Miller, Nwaekete, and Akiti (2016) distinguish e-learning as courses specifically delivered online, excluding television channels, DVDs, CD-ROMs, or video cassettes. E-learning, as described by Rasmitadila et al. (2020), encompasses instruction through the internet, blogs, online discussions, social media, as well as online materials, resources, and evaluations. It has been proposed as a substitute for in-person instruction and is believed to improve academic performance for both male and female students. To succeed in the contemporary e-learning environment, university students must possess self-control to manage their time and stay updated on computer and information and communication technology (ICT) knowledge (Purwanto, 2020). Video-based distance learning has been a popular form of e-learning since the 1990s, allowing two-way communication between different classrooms through remote imaging equipment.

Advancements in computers, software, and online applications have led to the use of modern machines in teaching and learning. These machines, including desktops, computers, laptops, tablets, iPhones, Androids, and various mobile phones, equipped with software programs, have made education less stressful and more engaging for both teachers and students (Babalola et al., 2019). The availability of internet learning technologies on the World Wide Web has facilitated communication, lecture delivery, assignment submission, and academic information exchange for technologically savvy institutions of higher learning (Ibukun, 2009). Consequently, educational institutions worldwide have become heavily reliant on the internet and online services to meet their operational demands. The University of Nigeria has already implemented e-learning platforms such as Google Classroom, Canvas, smart boards, and videoconferencing. However, many students still lack access to online teaching due to a lack of awareness and utilization. Additionally, there is a need to make e-learning content more interactive, demonstrate practical procedures in real situations, provide concise information, and offer 3D virtual tools that can facilitate learning with or without the presence of an instructor.

Vocational and technical education (VTE) is a specialized program designed to equip students with the knowledge, skills, and attitudes necessary for employability (Miller et al., 2016; Babalola et al., 2019). However, without effective adoption and adaptation of online information technology in the VTE curriculum, with a focus on e-learning, education's role in driving economic development and technological innovation cannot be sustained. The office setting has undergone significant changes and will continue to do so due to advancements in computers, the internet, and online platforms. Therefore, e-learning has emerged as a crucial tool for education, teaching, learning, and research in the 21st century. Online platforms and the internet are global computer networks that provide various information and communication services by connecting computers worldwide through routers and servers (Business Dictionary, 2016). These platforms enable the exchange of text, graphics, voice, video, and other computer applications. Video-based distance education is suitable for the contemporary educational environment and can provide two-way interaction, participation in

learning, class achievement, and levels of satisfaction comparable to face-to-face classes (Purwanto, 2020). To successfully implement e-learning in students' studies, it is essential for students to have prior IT knowledge, experience, and positive attitudes towards e-learning. Effective utilization of IT is also necessary when delivering e-learning-based components of courses to ensure student acceptance and success.



To support e-learning, university infrastructure needs to be sufficient, reliable, and capable of delivering the curriculum effortlessly. This includes the availability of IT resources such as video conferencing, audio and video plug-ins, user interfaces, network capacity, and security measures (Ghavifekr & Mahmoud, 2017). Students should have access to teaching slides, lecture notes, tutorial questions, online forums, online tests, videos, audios, and other materials that can be downloaded and retained as needed. Additionally, students should be able to easily submit assignments, ask questions to lecturers, and interact with their peers using the e-learning tools provided by colleges. Saba (2012) emphasizes the importance of self-efficiency and self-management in sustaining e-learning processes and increasing knowledge levels. The effectiveness of any e-learning model depends on the learner's usage, subjective norms, attitudes, and behavioral intentions. Factors such as gender, age, department, level of study, and device ownership may influence students' awareness and utilization of the University of Nigeria's e-learning platforms. However, Mesagan et al. (2022) found no significant gender effects in their study, suggesting that gender's impact on student learning and use of ICT resources remains a topic of ongoing debate. This study aims to investigate the awareness and utilization of various e-learning technologies among VTE students at the University of Nigeria, Nsukka.

### *1.1. Statement of Problem and Rationale*

The use of e-learning technologies in vocational and technical education and training (TVET) has garnered significant attention in recent years due to its numerous advantages for educators and students alike. However, there seems to be a lack of awareness and utilization of these technologies among Nigerian university students. This lack of awareness and utilization poses a significant challenge to improving the quality of education and training (Owo & Udoka, 2021). By addressing this research issue, we can contribute to the deployment of effective pedagogical strategies that promote the adoption of e-learning technologies in Nigerian universities. The findings of this study will illuminate the lack of awareness of e-learning technologies among VTE students at a Nigerian university, aiding in determining the extent of their utilization. This, in turn, will enable educators and institutions to develop appropriate strategies to promote their use among students.

### *1.2. Purpose of the Study*

The general purpose of this research is to investigate the awareness and utilization of e-learning technologies among vocational and technical education (VTE) students at the University of Nigeria, Nsukka. Specific purposes of the study are to determine:

(a) awareness of the E-learning platforms of the University of Nigeria among VTE students
(b) extent of utilization of E-learning platforms of the University of Nigeria among VTE students
(c) factors influencing the utilization of E-learning platforms among VTE students

### *1.3. Research Questions*

The following research questions guided the study:

(a) What is the VTE students' awareness of the e-learning platforms at the University of Nigeria?
(b) What is the extent of VTE students' utilization of the e-learning platforms at the University of Nigeria?
(c) What are the factors influencing the utilization of E-learning technologies by VTE students?



*1.4. Hypothesis*

$H0_1$: Awareness of the e-learning platforms of the University of Nigeria is not influenced by VTE students' variables (i.e., gender, age, department, level of study, and devices owned).

$H0_2$: Utilization of the e-learning platforms of the University of Nigeria cannot be influenced by VTE students' variables (i.e., gender, age, department, level of study, and devices owned).

## 2. Materials and Methods

*2.1. Design for the Study*

The design of this study was a descriptive survey design. This design was used in accordance with the recommendations by Cohen et al. (2002).

*2.1.1. Ethics Statement*

The approval for this research project was issued by the Committee on Research Ethics at the Department of Home Economics and Hospitality Management Education, University of Nigeria. All participating students were required to provide online informed consent before completing the study questionnaire.

*2.2. Area of the Study*

The area of this study was the University of Nigeria, Nsukka (UNN), located in Enugu state in the South East geopolitical Zone of Nigeria. UNN operates over 100 academic departments across 15 faculties and offers over 80 undergraduate programs and 211 postgraduate programs across four campuses: Nsukka, Enugu campus (UNEC), University of Nigeria Teaching Hospital (UNTH) in Ituku-Ozalla, and the University of Nigeria Aba (UNAC) (Times Higher Education, 2023). The Nsukka campus houses the faculties of agriculture, arts, biological sciences, education, engineering, pharmaceutical sciences, physical sciences, social sciences, veterinary medicine, and vocational and technical education (VTE). The faculty of VTE was purposively selected based on accessibility and the high likelihood of housing students from various academic and technical disciplines, backgrounds, exposures, and experiences. Hence, the selected faculty was considered ideal and suitable for this study.

*2.3. Population and Sample*

The targeted population for this study is 551 students from five departments of the faculty of Vocational and Technical Education of the University of Nigeria, Nsukka, according to faculty administration yearly records. Based on the information obtained from the faculty administrative records, a proportionate sample was used per department. Simple random sampling was adopted to choose the final participants of this study, which is 62.

*2.4. Instrument for Data Collection and Study Procedure*

The researchers developed an instrument named "Utilization of E-learning Technologies among Vocational and Technical Education students of University of Nigeria, Nsukka (AUELTVTESUNN)," which aided data collection. Items of the instrument were drawn from relevant literature and documents that capture the elements of the Technology Acceptance Model (TAM) (Davis, 1989) and Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975). Also, a

major component of the instrument benefited from the adaptation of an original instrument used by Buabeng-Andoh (2018). The AUELTVTESUNN comprises Sections A and B. Section A elicits respondents' personal information, while Section B contains 41 items on E-learning technologies, which is made up of four clusters – Cluster A, Cluster B, Cluster C, and Cluster D. Three experts in Computer and Robotics Education, Home Economics and Hospitality Management Education, and Measurement and Evaluation face-validated the instrument (AUELTVTESUNN). To determine the reliability of the questionnaires, a pilot test was administered to 20 respondents (students) in the Faculty of Education. As a measure of testing the internal consistency of the instrument, reliability was assessed by Cronbach's alpha analyses using the data collected from the trial testing. The reliability index was within the acceptable limit of 0.70.



*2.5. Data Collection Technique*

An online survey (Google form) was used to collect this data. Ethical issues, such as required approvals, were obtained from the department to continue with this study. Respondents to the instrument were assured of the confidentiality of their responses.

*2.6. Data Analysis Technique*

Descriptive statistics (frequencies and percentages) were computed to answer research questions one and two. Mean was used to answer research question three. The two null hypotheses tested in this study were evaluated using the binary logistic regression model. The binary logistic regression model, also called the logit model, is used when unordered choices in an instrument have only two outcomes, such as 'yes' or 'no'. The logit model allows for the exploration of factors influencing responses or a combination of responses (Apata, 2011). The logit model was considered appropriate for determining VTE students' awareness and utilization of the UNN e-learning platforms based on their gender, age, department, level of study, and devices owned. A p-value of > 0.05 led to the acceptance of the null hypotheses, while a p-value of <0.05 led to the rejection of the null hypotheses in the study.

## 3. Results and Discussion

*3.1.* **Research Question 1:** What is the VTE students' awareness of the e-learning platforms at the University of Nigeria?

**Table 1:** Mean responses on VTE students' awareness of the e-learning platforms

| S/N | Items | % Disagree | % Agree | Remark |
|---|---|---|---|---|
| 1 | Are you aware of the Moodle Learning Management System of the University of Nigeria, Nsukka? | 65.2 | 34.8 | Disagree |
| 2 | Are you aware of the E-learning website of the University of Nigeria, Nsukka? | 15.2 | 84.8 | Agree |
| 3 | Are you aware of the use of Google Classroom as E-learning platform at the University of Nigeria, Nsukka? | 24.4 | 75.6 | Agree |
| 4 | Are you aware of Canvas as E-learning platform of the university of Nigeria, Nsukka? | 73.1 | 26.9 | Disagree |

| | | | | |
|---|---|---|---|---|
| 5 | Are you aware of SMART Boards as E-learning platform of the university of Nigeria, Nsukka? | 39.4 | 80.6 | Agree |
| 6 | Are you aware of video conferencing as E-learning platform of the university of Nigeria, Nsukka? | 16.4 | 83.6 | Agree |



The criterion for agreement is from 75.6 % and above while the criteria for disagreement is below 75.6.%

According to Table 1, more than half of the respondents in this study disagreed with being aware of the Moodle Learning Management System (62.2%) and the Canvas e-learning platform (73.1%) at the University of Nigeria, Nsukka. On the other hand, over half of the respondents agreed to being aware of the e-learning website of the University of Nigeria, Nsukka (75.6%), Google Classroom (75.6%), Smart Board (80.6%), and video conferencing (83.6%).

*3.2.* **Research Question 2:** What is the extent of VTE students' utilization of the e-learning platforms at the University of Nigeria?

**Table 2:** Mean responses on VTE students' utilization of the e-learning platforms

| S/N | Items | % Never | % Often | % Very Often | Remark |
|---|---|---|---|---|---|
| 7 | How often do you use the Moodle Learning Management System of the University of Nigeria, Nsukka? | 59.1 | 31.8 | 9.1 | Disagree |
| 8 | How often do you use the e-learning website of the University of Nigeria, Nsukka? | 31.8 | 51.5 | 16.7 | Agree |
| 9 | How often do you use Google Classroom as E-learning platform of the University of Nigeria, Nsukka? | 19.0 | 20.6 | 60.4 | Agree |
| 10 | How often do you use Canvas as E-learning platform of the University of Nigeria, Nsukka? | 71.6 | 20.2 | 8.2 | Disagree |
| 11 | How often do you use SMART board as E-learning platform at the University of Nigeria, Nsukka? | 8.5 | 22.2 | 69.3 | Agree |
| 12 | How often do you use video conferencing as E-learning platform at the University of Nigeria, Nsukka? | 4.7 | 31.7 | 63.6 | Agree |

According to Table 2, more than half of the respondents in this study disagreed with the utilization of the Moodle Learning Management System (59.5%) and the Canvas e-learning platform (71.6%). However, over half of the respondents agreed with the utilization of the e-learning website, Google Classroom, Smart board, and video conferencing at the University of Nigeria, Nsukka. Therefore, the majority of VTE students at the University of Nigeria, Nsukka utilize the e-learning website, Google Classroom, Smart board, and video conferencing, but not the Moodle Learning Management System and Canvas at the university.



*3.3.* **Research Question 3:** What are the factors influencing the utilization of E-learning technologies by VTE students?

**Table 3:** Mean responses on factors influencing the utilization of E-learning technologies by VTE students

| S/N | *Perceived usefulness: Use of e-learning will:* | % Unknown | % Disagree | % Agree | Remark |
|---|---|---|---|---|---|
| 5 | Enable me accomplish tasks more quickly | 25.8 | 3 | 71.2 | Agree |
| 6 | Enhance effectiveness of my learning | 22.7 | 4.5 | 72.8 | Agree |
| 7 | Increase my productivity | 21.2 | 10.6 | 68.2 | Agree |
| 8 | Improve my academic achievement | 6.1 | 12.1 | 81.8 | Agree |
| | *Perceived ease of use:* | | | | |
| 9 | I find it easy to use the e-learning platforms | 29.2 | 23 | 47.7 | Disagree |
| 10 | I effortlessly interact with the and e-learning platforms | 30.3 | 33.3 | 36.4 | Disagree |
| 11 | I am skilful at using the and e-learning platforms | 27.3 | 27.3 | 45.5 | Disagree |
| 12 | I have control over the and e-learning platforms | 28.8 | 48.4 | 22.8 | Disagree |
| 13 | I have the required knowledge to use the and e-learning platforms | 21.2 | 21.2 | 57.6 | Agree |
| | *Attitude:* | | | | |
| 14 | I look forward to those aspects of my study that requires the use of and e-learning platforms | 13.6 | 9.1 | 77.3 | Agree |
| 15 | I like learning on the e-learning platforms | 22.7 | 24.2 | 53 | Agree |
| 16 | I have positive feelings towards the use of the e-learning platforms | 16.7 | 10.6 | 72.8 | Agree |
| | *Subjective norms*: | | | | |
| 17 | My lecturers influence me to use the e-learning platforms | 19.7 | 28.8 | 51.5 | Agree |
| 18 | My lecturers support me to use the e-learning platforms | 21.2 | 25.8 | 53 | Agree |
| 19 | My lecturers support the use of e-learning platforms | 19.7 | 16.6 | 63.7 | Agree |

| | | | | | |
|---|---|---|---|---|---|
| | *Behavioral intention*: | | | | |
| 20 | I intend to acquire skills to use the e-learning platforms | 12.1 | 18.2 | 69.7 | Agree |
| 21 | I would readily use the e-learning platforms | 12.1 | 12.1 | 75.8 | Agree |
| 22 | I expect to continue using the e-learning platforms in the future | 15.2 | 12.1 | 72.7 | Agree |
| 23 | I plan to use the e-learning platforms in my future studies and work | 13.6 | 13.6 | 72.8 | Agree |

The criterion for agreement is from 50% and above while the criteria for disagreement is below 50%

According to Table 3, VTE students agreed that perceived usefulness, attitude, subjective norms, and behavioral intention are factors that influence the utilization of E-learning technologies. This agreement was above 50%. However, they disagreed on the factor of perceived ease of use, which was below 50%.

*3.4.* **Hypothesis one ($H0_1$)**: Awareness of the e-learning platforms of the University of Nigeria is not influenced by VTE students' variables (i.e., gender, age, department, level of study, and devices owned).

To test the null hypotheses, the mean responses of the instrument were collated and used for analysis to obtain results of the significance or otherwise, of mean differences, based on respondents' variables (i.e., gender, age, department, level of study, and devices owned). The obtained results were presented in Tables.

**Table 5:** Results of mean differences analyses (based on personal characteristics) on responses of VTE students' awareness of the e-learning platforms

| Variable | Groups | Mean scores | Levene statistics (Sig.) | Sig. | Test | Remarks |
|---|---|---|---|---|---|---|
| Gender | Male<br>Female | .7000<br>.5543 | .209 | .100 | *t* test | Not significant |
| Age | 15-17 years<br>18-20 years<br>21-23 years<br>24-26 years<br>27-29 years<br>30+ years | 1.0000<br>.5556<br>.6458<br>.4706<br>.8000<br>1.0000 | .559 | .144 | One-way ANOVA | Not significant |
| Department | Agricultural Education<br>Business Education<br>Comp. & Rob. Educ.<br>Ind. Tech. Education<br>Home Economics and Hospitality Management Education | .5385<br>.7778<br>.7500<br>.5000<br>.5606 | .088 | .270 | One-way ANOVA | Not significant |

| | | | | | | |
|---|---|---|---|---|---|---|
| Level of study | 100 level<br>200level<br>300level<br>400level | .5769<br>.4444<br>.8500<br>.5735 | .481 | .042 | One-way ANOVA | Significant: 300>400>200 |
| Devices owned | Smartphone<br>Personal Computer (PC)/Laptop | .6058<br>.4444 | .280 | .180 | *t* test | Not significant |



ANOVA = Analysis of variance | N = 66

Responses of VTE students on their awareness of the e-learning platforms in UNN did not vary by gender, age, department, and devices owned. However, level of study influenced awareness of the e-learning platforms in UNN as 300 level students had the highest awareness which significantly varied with the awareness of 400- and 200 level students. Hence, there is a significant influence of the level of study on VTE students' awareness of the E-learning platforms of the University of Nigeria.

*3.5.* **Hypothesis two ($H0_2$):** Utilization of the e-learning platforms of the University of Nigeria cannot be influenced by VTE students' variables (i.e., gender, age, department, level of study, and devices owned).

**Table 6:** Results of mean differences analyses (based on personal characteristics) on responses of VTE students' utilization of the e-learning platforms

| Variable | Groups | Mean scores | Levene statistics (Sig.) | Sig. | Test | Remarks |
|---|---|---|---|---|---|---|
| Gender | Male<br>Female | .9000<br>.5761 | .209 | .047 | *t* test | Significant: Male > Female |
| Age | 15-17 years<br>18-20 years<br>21-23 years<br>24-26 years<br>27-29 years<br>30+ years | 2.0000<br>.6667<br>.6875<br>.6176<br>.7000<br>.0000 | .760 | .301 | *t* test | Not significant |
| Department | Agricultural Education<br>Business Education<br>Comp. & Rob. Educ.<br>Ind. Tech. Education<br>Home Economics and Hospitality Management Education | .8462<br>.6111<br>.7500<br>1.2000<br>.5303 | .010 | .147 | One-way ANOVA | Not significant |
| Level of study | 100 level<br>200 level<br>300 level<br>400 level | .6923<br>1.1667<br>.7000<br>.5294 | .327 | .046 | One-way ANOVA | Significant: 200>400 |
| Devices owned | Smartphone<br>Personal Computer | .7212<br>.2222 | .094 | .015 | *t* test | Significant |

(PC)/Laptop

ANOVA = Analysis of variance | N = 66



Responses of VTE students on their utilization of the e-learning platforms in UNN did not vary by gender, age, and department. However, the level of study and devices owned influenced the utilization of the e-learning platforms in UNN. 200-level students had the highest mean utilization scores, which were significantly different from the scores of the least group (i.e., 400-level students). Therefore, the level of study and devices owned significantly influence VTE students' utilization of the e-learning platforms at the University of Nigeria.

Based on the findings of this research, more than half of VTE students disagreed with being aware of the Moodle Learning Management System and Canvas e-learning platform at the University of Nigeria, Nsukka. Over half of the respondents agreed that they were aware of the e-learning website of the University of Nigeria, Nsukka, as well as Google Classroom, Smart Board, and video conferencing. Therefore, the majority of VTE students at the University of Nigeria, Nsukka are aware of the e-learning website but unaware of the Moodle Learning Management System and Canvas e-learning platform. This finding is consistent with the findings of Bubou and Job (2022), Shu'ara (2020), and Patra et al. (2021), who revealed that awareness contributes to individual innovativeness, self-efficacy, and e-learning readiness among students. More than half (59.1%) of VTE students disagreed with the utilization of the Moodle Learning Management System and Canvas e-learning platforms at the University of Nigeria, Nsukka. In contrast to their responses on awareness, over half of the respondents (68.2%) agreed that they utilize the e-learning website, Google Classroom, Smart Board, and video conferencing at the University of Nigeria, Nsukka. Therefore, the majority of VTE students at the University of Nigeria, Nsukka utilize the e-learning website, Google Classroom, Smart Board, and video conferencing, but not the Moodle Learning Management System and Canvas e-learning platform. This finding aligns with the perspectives of David et al. (2021) and Miller et al. (2016), who emphasize the assessment of e-learning software facilities for skills acquisition by students. Furthermore, VTE students agreed that perceived usefulness, attitude, subjective norms, and behavioral intention are factors that influence the utilization of e-learning technologies. However, they disagreed on the factors of perceived ease of use. This finding is consistent with the viewpoints of Apata (2011) and Eze et al. (2020), who support these factors as influences in the use of e-learning facilities by students. Therefore, perceived usefulness, attitude, subjective norms, and behavioral intention are factors that influence the utilization of e-learning technologies by VTE students. The research and policy implications of e-learning technologies among VTE students are substantial. To fully benefit from e-learning, students must possess the proficiency to use e-learning technologies and the accompanying equipment (Eze et al., 2021). Technological proficiency, equipment capacity, user satisfaction, and motivation are crucial elements of e-learning readiness (Shdaifat et al., 2020). The implementation of e-learning has the potential to revolutionize TVET by improving its accessibility, inclusivity, and diversity (Bappa-Aliyu, 2012). E-learning platforms offer a wide range of multimedia resources that cater to different learning styles, enhancing the engagement and practicality of TVET subjects. Introducing e-learning into TVET programs has significantly increased the employability of graduates from these institutions. Factors such as the compatibility between tasks and technology, as well as the success of information systems, positively influence students' willingness to embrace e-learning resources (Ugwuanyi et al., 2019; Mesagan et al., 2021). However, there is a need to improve the accessibility and utilization of e-learning resources in the instruction and acquisition of

vocational subjects in universities. Institutions offering online education may struggle to keep up with the rapid pace of technological progress and ensure the availability of current e-learning tools and platforms to students. The proficiency of lecturers and instructors in effectively using e-learning materials and platforms is crucial. Insufficient training and support for educators can hinder the successful integration of e-learning in VTE. TVET institutions often face challenges in setting up the necessary technical infrastructure to support e-learning, including reliable internet connectivity and suitable hardware. The high costs associated with infrastructure and e-learning materials can also be a significant concern to adopting e-learning in VTE (Bappa-Aliyu, 2012; Shdaifat et al., 2020). Thus, efficient academic leadership, clear institutional policies, and strategic educational planning are all essential for the successful incorporation of e-learning materials and platforms in VTE for students.



## 4. Conclusion

The majority of VTE students at the University of Nigeria, Nsukka are aware of e-learning websites such as Google Classroom, Smart Board, and Video Conferencing. However, they are unaware of the university's Moodle Learning Management System. While VTE students make use of e-learning websites, such as Google Classroom, Smart Board, and Video Conferencing, they do not utilize the Moodle Learning Management System. Factors such as perceived usefulness, attitude, subjective norms, and behavioral intention influence VTE students' utilization of e-learning technologies for their learning. It is important to conduct proper sensitization to create awareness among staff, lecturers, and students about the UNN e-learning platforms. The administration should also organize proper training for students, lecturers, and all staff to enable them to effectively utilize the e-learning technologies available to them.

## Acknowledgements

The authors would like to thank the respondents for completing this survey.

## Conflict of Interest

The authors declare no conflict of interest.

## Authors' Contributions

The study's conceptualization, methodology, writing, data collection, analysis and revision were equally performed by CLN, BIA and ECE.

## Data Availability Statement

The dataset used for this study is available on request. For further inquiries can consult the authors.

## Funding Information

This study was not funded by any organization.

## References

Apata, T. G. (2011). Factors influencing the perception and choice of adaptation measures to climate change among farmers in Nigeria. Evidence from farming households in Southwest Nigeria. *Environmental Economics*, *2*(4), 74-83.

Babalola, J. O., Dambo, B. I., & Bupo, O. G. (2019). Utilization of online platforms for e-learning by business education postgraduate students in universities in South-South Nigeria. *Nigerian Journal of Business Education* (NIGJBED), 6(1), 182-197.

Bappa-Aliyu, M. (2012). Integrating e-learning in technical and vocational education: A technical review. *International Journal of Academic Research in Business and Social Sciences, 2*(5), 52-58.



Buabeng-Andoh, C. (2018). Predicting students' intention to adopt mobile learning: A combination of theory of reasoned action and technology acceptance model. *Journal of Research in Innovative Teaching & Learning*, *11*(2), 178-191. https://doi.org/10.1108/JRIT-03-2017-0004

Bubou, G. M., & Job, G. C. (2022). Individual innovativeness, self-efficacy and e-learning readiness of students of Yenagoa study centre, National Open University of Nigeria. *Journal of Research in Innovative Teaching & Learning, 15*(1), 2-22. https://doi.org/10.1108/JRIT-12-2019-0079

Business Dictionary. (2016). Online business dictionary. https://www.businessdictionaryonline.com (accessed October 14, 2023).

Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education* (5th ed.). Routledge. https://doi.org/10.4324/9780203224342

David, O. R., Jinadu, O., Abiamuwe, N. O., Olisegun, R. A., & Lucas, B. O. (2021). TVET Students' attitude towards virtual learning during COVID 19 Lockdown in Lagos State, Nigeria. *International Journal of Engineering Science and Computing, 11*(5), 27998-28003.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.

Eze, S. C., Chinedu-Eze, V. C., Okike, C. K., & Bello, A. O. (2020). Factors influencing the use of e-learning facilities by students in a private Higher Education Institution (HEI) in a developing economy. *Humanities and Social Sciences Communications, 7*(1), 1-15. https://doi.org/10.1057/s41599-020-00624-6

Eze, U. N., Sefotho, M. M., Onyishi, C. N., & Eseadi, C. (2021). Impact of COVID-19 Pandemic on Education in Nigeria: Implications for Policy and Practice of e-Learning. *Library Philosophy and Practice (e-journal)*. 5651. https://digitalcommons.unl.edu/libphilprac/5651

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: an introduction to theory and research.* Addison-Wesley.

Ghavifekr, S., & Mahmood, H. (2017). Factors affecting use of e-learning platform (SPeCTRUM) among University students in Malaysia. *Education and Information Technologies, 22*, 75-100. https://doi.org/10.1007/s10639-015-9435-z

Ibukun, A.J. (2009). *The essentials of learning*. ETI-NWA Associates.

Mesagan, F. O., Ekere, J., Omekwu, C. O., Otu, M. S., & Eseadi, C. (2021). Perception, utilization and purposes of using cyberspace information resources and services by postgraduate students. *Library Philosophy and Practice*, 5847. https://digitalcommons.unl.edu/libphilprac/5847

Mesagan, F. O., Eseadi, C., & Omekwu, C. O. (2022). Influence of gender and expected competencies on access to and utilization of cyberspace resources and services for research by postgraduate students. *Education and Information Technologies, 27*(5), 6157-6171. https://doi.org/10.1007/s10639-021-10878-5

Miller, O., Nwaekete, J. O., & Akiti, N. (2016). Business education students' assessment of utilization of e-learning software facilities for skill acquisition in Colleges of Education. *Nigerian Journal of Business Education (NIGJBED)*, 3(1), 77-88.

Nwogu, U. F., Udoye, N. R., & Oguejiofor, C. S. (2014). Towards Utilization of e-learning in preparing Business Education Students for the World of Work. *African Research Review, 8*(3), 155-164. https://doi.org/10.4314/afrrev.v8i3.13

Owo, O. T., & Udoka, I. C. N. (2021). Perception of educational stakeholders on utilization of e-learning technology for quality instructional delivery in universities in Nigeria. *Journal of Learning for Development, 8*(2), 312-326.



Patra, S.K., Sundaray, B.K. & Mahapatra, D.M. (2021). "Are university teachers ready to use and adopt e-learning system? An empirical substantiation during COVID-19 pandemic. *Quality Assurance in Education, 29* (4), 509-522. https://doi.org/10.1108/QAE-12-2020-0146

Pei, L., & Wu, H. (2019). Does online learning work better than offline learning in undergraduate medical education? A systematic review and meta-analysis. *Medical Education Online, 24*(1), 1666538. https://doi.org/10.1080/10872981.2019.1666538

Purwanto, A. (2020). University students online learning system during Covid-19 pandemic: Advantages, constraints and solutions. *Systematic Reviews in Pharmacy*, 11(7), 570-576.

Rasmitadila, R., Aliyyah, R. R., Rachmadtullah, R., Samsudin, A., Syaodih, E., Nurtanto, M., & Tambunan, A. R. S. (2020). The perceptions of primary school teachers of online learning during the COVID-19 pandemic period. *Journal of Ethnic and Cultural Studies, 7*(2), 90-109.. https://doi.org/10.29333/ejecs/388

Saba, T. (2012). Implications of E-learning systems and self-efficiency on students outcomes: a model approach. Human-Centric Computing and Information Sciences, 2(1), 1–11. https://doi.org/10.1186/2192-1962-2-6

Shdaifat, S. A. K., Shdaifat, N. A., & Khateeb, L. A. (2020). The Reality of Using E-Learning Applications in Vocational Education Courses during COVID 19 Crisis from the Vocational Education Teachers' Perceptive in Jordan. *International Education Studies, 13*(10), 105-112. https://doi.org/10.5539/ies.v13n10p105

Shu'ara, J. (2020). *Assessment of quality assurance of e-learning facilities in teaching consumer behaviour at Baze University, Abuja*. 6th e-learning Conference of Association for Progressive and Alternative Education in Nigeria, 17th – 18th November, 2020

Times Higher Education (2023). About University of Nigeria Nsukka. https://www.timeshighereducation.com/world-university-rankings/university-nigeria-nsukka

Ugwuanyi, C.S., Nduji, C.C., Gana, C.S., Nwajiuba, C.A., Ene C.U., Okeke, A.O., Eseadi, C., & Okeke, C.F. (2019). Effectiveness of flipped classroom instructional technology model in enhancing students' achievement in Physics. *International Journal of u-and-e-Service, Science and Technology, 12*(4), 37-46. http://dx.doi.org/10.33832/ijunesst.2019.12.4.04

Wang, K., Zhang, L., & Ye, L. (2021). A nationwide survey of online teaching strategies in dental education in China. *Journal of Dental Education, 85*(2), 128–134. https://doi.org/10.1002/jdd.12413

**Publisher:** Department of Home Economics and Hospitality Management Education, University of Nigeria, Nsukka 41001, Nigeria