

## The Psychological Managerial Effects of an Online Course Compact on Student Academic Performance: A Developing Society Testimonial

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SDG 8: Decent work and Economic Growth

SDG 12: Decent work and Economic Growth Responsible consumption and production

SDG 11: Sustainable Cities and communities

SDG 4: Good health and Well-being

**Abstract:** The purpose of this study is to investigate how using online course compact affects students' academic performance in a private tertiary institution in North Central Nigeria. Mixed approaches, which integrate quantitative and qualitative techniques, are employed for this aim. The qualitative aspect of the paper used the random effects model and meta-analysis method to assess research studies assessing the influence of online course compact on academic success that were acquired through the existing literature and met the eligibility criteria defined by the research objective. The researcher also adopted a quantitative-descriptive (structured questionnaires) approach, using a survey research methodology. The survey questionnaire was designed with the aim of gathering data from respondents (Students of Landmark University) on their perception to the use of online course compact on their academic and learning experience. The population of the study consists of 3134 undergraduates' students in the university and the sample size was 342. The hypothesis was formulated and tested using Regression coefficient. This result shows that there were a significant relationship and that online course compact had a low significant effect on students' academic performance. following the finding from the study, recommendations were made.

**Keywords:** online course compact, Student, Academic performance, ICT,

### 1. Introduction

The Corona virus epidemic, which required both professors and students to be placed in a mandatory isolation, has pushed colleges and universities to switch from conventional face-to-face learning to online classes. However, online teaching and learning present a significant hurdle for university administration, educators, and students alike, necessitating the implementation of various innovative educational techniques to achieve appropriate academic results, imposing a virtual learning environment that requires from students an online access to lectures and information, and from the teacher's side the use of innovative teaching methodology to deliver the curriculum (Watermeyer et al., 2020).

Due to the numerous ways that technology has impacted people's ability to complete tasks, it was deemed necessary for it to play a crucial role in this online teaching and learning process. It now exists in our ever-evolving lives. Making connections between technology, course content, and pedagogy in the learning and teaching environment is a crucial component of online learning (Basilaia, & Kvavadze, 2020). Because students may take charge of their education and maximize it both inside and outside of the classroom, online learning is

becoming inevitable in a digital educational setting. Therefore, learning is gradually changing from traditional face-to-face schooling to web - based learning and immediate access to data through technology such as e-learning has demonstrated to be more advantageous for students in terms of knowledge or information gathering. Online education encourages students to employ the many available learning methodologies, which helps them learn more and raises their level of dedication to their majors. An efficient learning environment can be found in the virtual world, which offers users the chance to learn through first-hand experience. The course objectives are established by the instructors through the creation of assignments incorporating problem- or challenge-based learning scenarios and the provision of complete control over exploratory learning experiences (Kapasia et al., 2020).

However, there are some difficulties that instructors must overcome, such as choosing the most effective educational approaches and figuring out how to create learning activities and assignments that will fulfil the demands and aspirations of students. Various strategies, particularly when coupled with ethical concepts, might result in significant behavioral improvements in children. However, the development of students' self-confidence and their empowerment throughout the learning experience becomes possible with appropriate choice of the educational setting and pedagogical practices aligning with the precise peculiarities of the educational context. Another advantage of adopting online learning and instruction is that there is a need to investigate new teaching concepts and methodologies that enhance distant education, as traditional teaching and learning approaches are losing their ability to effectively include students in the learning process (Deng et al., 2019). Furthermore, online learning may address many of the problems that students have when learning in a traditional setting since it encourages them to attend courses for a variety of reasons, makes it much simpler for them to communicate with their teachers, and makes it much easier for them to obtain lectures. Students might fulfill other societal responsibilities while taking online university courses. As a result, a learner's circumstances in life, as well as any issues or distractions they may have such family issues or sickness, may no longer be a barrier to his study. Learning becomes more engaging and promotes higher information acquisition when students may practice in simulated settings and face problems in a safe atmosphere (Baldwin, & Ching, 2019).

### **Research Rationale**

Despite being available since the late 1990s, online programs were not the only option available at the time (Yaseen et al., 2021). In light of this, students who are unable to take online courses or who choose to take their lectures in person are not in the same position as those who have a choice. Instead, it has been adopted as a last resort for students who are unable to attend class in person because of Covid-19. In light of various aspects, including internet connectivity, technological proficiency, influence on workload, privacy issues, socioeconomic factors, communication, academic discourse, and the educational environment, this has sparked concerns among scholars, researchers, and educational institutions all over the world (Zheng, Lin, & Kwon, 2020). Studies on the effect of online courses on student performance to date have mainly been conducted at universities in the western world and other technologically advanced societies, excluding the majority of African nations. However, a few studies that have been done in relation to Africa have not been rigorous and complete in their methodology and have been done outside of Nigeria's borders (Ayeni, et al., 2021) Therefore, this study is being conducted to determine whether there is a substantial impact of ICT deployment, specifically the implementation of online course compact, on the performance of Nigerian students. This study aims to investigate the impact of employing contemporary teaching strategies, such as teacher-student interaction and student-centered methods, on students' academic achievement. It also makes an effort to pinpoint and demonstrate the degree to which an online learning environment, when properly incorporated and tailored into the goals and plans of a course, may meet the needs and preferences of students. The purpose of this study is to determine whether or not online course compact at Landmark University significantly improves students' academic performance.

### **2. Theoretical framework**

Achievement goal theory (AGT) was developed in the 1970s by Carole Ames, Carol Dweck, Martin Maehr, and John Nicholls. It is frequently employed to explain student achievement (Urdu, & Kaplan, 2020; Elliot, 2005). According to Elliott & Dweck (1988), "achieving a goal includes a sequence of mental procedures that have implications for cognition, emotion, and action." According to this theory, the goals and motivations students

adopt when participating in learning exercises can be used to understand their motivation and achievement-related actions (Karlen et al., 2019; Urdan, 1997). According to several research, there are four ways to accomplish a task: the mastery methodology, the mastery avoidance method, the performance strategy, and the performance avoidance framework (Schwinger & Stiensmeier-Pelster, 2011, Hansen & Ringdal, 2018; Mouratidis et al., 2018). Students' productivity is also impacted by the surroundings (Heo, Anwar, & Menekse, 2018). In the past, classroom education has been a successful strategy for achieving the objective (Clayton et al., 2010). However, in the contemporary period, the delivery of lectures via the internet is also one of the most efficient technologies, and web-based apps are replacing traditional classrooms (Karlen et al., 2019).

### **Conceptual clarification and hypothesis development**

The goal of this study is to better understand how online course content affects students' academic achievement. An online course compact is a collection of educational experiences (modules or classroom materials) that are given online and have a particular learning objective. Depending on the style of course—self-paced, instruction-led, or blended—learning activities change. It is a collection of educational experiences that make use of the internet for conversation, engagement, and teaching. No in-person meetings must be held in an actual location for an online course. A web-based learning management system (LMS), a monitoring software, modular content, and multimedia supplements serve as the program's primary ICT resources. Hence, online course is an ICT-based learning strategy. This style of learning is organized with the intention of employing a computer or other technological device to assist the learning experience. On the other hand, a student's academic achievement demonstrates one of their educational successes. GPA and time spent studying at the University are two indicators of academic performance. Academic success can be judged by a student's GPA and the number of semesters they have spent in school. We can draw the conclusion that a person's final measure of success throughout their time in an educational institution is their academic performance.

One of the key factors to improving academic success in university studies is regarded to be online learning in higher education. Halabi et al. (2014) gives experimental proof showing individuals who invested more time online substantially increased their school grade. Chun, Heo, and Essop (2018) noted that the reversed learning approach is beneficial in terms of both self-efficacy and academic achievement. Students were happy with their online education, and there is a connection between their use of the online content resources and their academic success (Kuo, Luo, & Brielmaier, 2016; Xhomara, & Karabina, 2022); Wei, Chou, and colleagues (2020) discovered a direct, beneficial relationship between students' online discussion score and academic achievement and their computer or internet self-efficacy and motivation for learning. The degree to which students participated in the online module and how well they performed in the last learning activity were significantly but weakly positively correlated (Rajabalee, Santally, & Rennie, 2020; Xhomara, & Karabina, 2022). When contrasted with multiple-choice exams on traditional paper and pencil, Shaw et al. (2019) found that students had higher test scores when utilizing an online program; Akhter, & Mahmood (2018) also found that enhancing online technology provides flexible learning possibilities for individuals through digital classes. The number of attempts and performance in each of the separate online learning exercises are determinants of a final course grade, however the association between the learning activity in the online program and evaluation component grades was shown to be weak but relevant (Foung, & Chen, 2019); nevertheless, the most accurate predictor of students' performance was a hybrid data set that combined traditional and online important components (Lu et al., 2018; Xhomara, & Karabina, 2022). Academic performance could be evaluated in relation to student interaction in an online program and Learning management system utilize (Alkis, & Temizel, 2018); in contrast, Zhang et al. (2020) found that individualized learning interventions can significantly enhance students' learning tendencies, perception, motivation, and that educational achievement in an incorporated learning surroundings. Despite the fact that learning achievement is not particularly noteworthy, students' participation in the web-based learning forum was greater than it was for those who just used the English learning platform. (Lai, Lin, Lin, & Tho, 2019). Additionally, Mercer (2018) supported the notion that student motivation can be predicted by their views about and readiness for online learning. Bailie (2019) demonstrates the influence of student unrestricted accessibility to completely online graduate-level courses.

A study by Mingfang, and Wang, (2018) found that social identity and life satisfaction are influenced by students' achievement in online courses. According to Sneed (2019), ethnicity was consistently associated to academic achievement for online education at the undergraduate level. This was demonstrated through digital

interactive evaluation utilizing Google Docs, which is also helpful for student engagement. From a contrary perspective, online education has a detrimental impact on student academic achievement when contrasted with the conventional learning strategy, and online students performed worse than face-to-face students (Dendir, 2019). In especially for online courses, Xhomara and Karabina (2020) discovered that online respondents experienced lower levels of motivation than face-to-face learners. As a result, there is proof that university academic performance is impacted by online learning. As a result of prior study, it is crucial to further explore the connection between online learning and academic achievement. As a result, this research hypothesizes:

***H1: The provision of online course-compact does not significantly enhance students' academic performance***

### **3. 3.0 Methodology**

The researcher used a quantitative-descriptive (structured questionnaires) approach because the type of respondents required to portray the study's genuine reality required structured questions. This is chosen because it focuses on developing a comprehensive picture of the case and includes variables that are measured without altering them. Because the research was limited to using the data acquired and an objective technique was employed to evaluate the data collected, this study had applied positivism, one of the research philosophies. This study's goal was to use a survey research methodology to look into how online course compacts affected students' academic achievement at a private tertiary institution in North Central Nigeria. The purpose of the survey questionnaire was to acquire information from respondents (Students of Landmark University) regarding the impact of online course delivery on their academic performance and learning experience. The use of a structured questionnaire is justified by the fact that such research frequently and widely employ it (Dauda and Akingbade, 2011). A structured questionnaire was employed; Google forms was generated and distributed through social media and university mail. After been filled by the respondents for this study, they were obtained from a backend repository. This approach was chosen because it makes it simple for responders to complete the forms without losing them, and it also ensures that participants' data is collected completely and accurately. Students at Landmark University were given copies of the structured questionnaire. The researcher used the internet to administer the questionnaire copies. 3134 university undergraduate students make up the study's population, and Yamane's method was used to determine the sample size of 342. For the purpose of this study, the Statistical Package for Social Sciences (SPSS) will be utilized for data analysis. The demographic data from the surveys will be represented in tabular and graphical form, and a correlation test will be performed to determine the strength of the association between the variables. Cronbach's Alpha is used in the study to evaluate the validity of the research instrument. Below are the dependability statistics.

<b>Cronbach's Alpha</b>	<b>N of Items</b>
.744	15

**Authors' computation, 2022**

The reliability of the questionnaire's items is shown by the Cronbach's Alpha estimate. According to studies, an alpha value of more than 0.7 indicates good reliability. Consequently, the reliability test result of 0.744 shows that the questionnaire has a reliability rate of 74%.

## **4. Results and Analysis**

### **Demographic Profile of the Respondents**

Table 4.1 lists the respondents' demographic data that was gathered for this investigation. According to the table, there are 169 respondents who are female (51.4%) and 158 respondents who are male (48.3%). This indicates that the respondents who were included in the study are overwhelmingly female. In accordance with the table, 14.6% of respondents are between the ages of 14 and 18; 63.8% are between the ages of 19 and 21; 17.9% are between the ages of 22 and 25; and 3.0% are older than 26. The university appears to prefer fresh-faced applicants throughout the admissions process because the majority of the population is between the ages of 19 and 21. This demonstrates that there is a young, motivated workforce that is open to change and responsive to new ICT trends. As shown in the table, 37.1 percent of respondents are from the College of Business and Social

Science (CBS), 4.0 percent are from the College of Agricultural Sciences (CAS), 33.7 percent are from the College of Engineering (COE), and 24.6 percent are from the College of Pure and Applied Science (CPAS). As a result, it may be claimed that the survey participants' opinions were representative of the population as a whole and were distributed as indicated. The table also demonstrates the frequency distribution of respondents by level inside the institution, with 9.7% of respondents falling under level 100, 14.9 falling under level 200, 10.6 falling under level 300, 400 being represented by 52.3 percent, and 11.9 falling under level 500. This shows that the majority of study participants were at the 400 level and suggests that informed people contributed opinions to the study that were impartially obtained. In addition, the information reveals that 75.4 percent of respondents only own laptops, 11.6 own tablets, and 3 own nothing at all. Both devices were reported to be used by 9.4% of persons. This implied that a typical university student has a device with easy access to the internet.

**Table 4.1**

<b>VARIABLE</b>	<b>FREQUENCY</b>	<b>PERCENTAGE</b>
<b>Gender</b>		
Male	158	48.3
Female	169	51.6
<b>Age</b>		
14-18 years	48	14.9
19-21 years	210	63.8
22-25 years	59	17.9
26yrs & above	10	3.0
<b>College/Faculty of respondents</b>		
CBS	122	37.1
CAS	13	4.0
COE	111	33.7
CPAS	81	24.6
<b>College/Faculty Distribution</b>		
100 Level	32	9.7
200 Level	49	14.9
300 Level	35	10.6
400 Level	172	52.3
500 Level	39	11.9
<b>Gadget Owned</b>		
Laptop	248	75.4
Tablet	38	11.6
None	10	3.0
Both Gadgets	31	9.4

**Authors' computation, 2022**

The table 4.2 shows the descriptive statistics on the responses of the respondents on online course compact. The table shows that most of the respondents (80.5%) asserted they have a computer or they able to get access to one easily on a regular basis. Also, it can be deduced from the table that majority of the respondents (72%) favored the assertion that they are fairly comfortable with keyboarding. Going forward, the table also revealed that when respondents were asked if they believe that high quality learning can take place without face-to-face

interaction, 3.3% of the respondent strongly disagreed, 12.2% of them disagreed with the claim. However, the table also shows that 55(16.7%) of the respondents were undecided about the statement while 119(36.2%) of them agreed and 91(27.7%) strongly agreed with the claim respectively. When also asked if they are able to go to class at times and locations that they choose instead of being tied to a set time and place, 158(48.0%) answered in the affirmative. Going forward, the statement “I am able to go to class prepared because of Online Course Compacts” was also favored by more than half of the respondents (53.8%). It can also be discovered from the table that a larger percentage of the respondents agreed to the statement that “Based on the available online course compact, they do not mind meeting their instructors or classmates in person”. The statement “I am familiar with Landmark University Online Course Compacts” was likewise favored by 57.7% of the respondents. Lastly, the table again shows that 31.9 percent of the respondents asserted that their lecturers struggle to tally online course compacts with occurring lectures. The statement “I ask questions when I have a problem or question from the provided online course compacts” also receive positive response from most of the respondents

**Authors’ computation, 2022**

**Table 4.2** Descriptive Statistics of Responses on Online Course Compacts

Item	SD	D	N	A	SA
I have a computer or am able to get access to one easily on a regular basis	7 (2.1%)	12 (3.6%)	31 (9.4%)	156 (47.4%)	109 (33.1%)
I am fairly comfortable with keyboarding	12 (3.6%)	31 (9.4%)	34 (10.3%)	150 (45.6%)	87 (26.4%)
I believe that high quality learning can take place without face-to-face interaction	11 (3.3%)	40 (12.2%)	55 (16.7%)	119 (36.2%)	91 (27.7%)
I am able to go to class at times and locations that I choose instead of being tied to a set time and place	32 (9.7%)	51 (15.5%)	73 (22.2%)	101 (30.7)	57 (17.3%)
I am able to go to class prepared because of Online Course Compacts	20 (6.1%)	32 (9.7%)	85 (25.8%)	125 (38.0%)	52 (15.8%)
Based on the available online course compact, I do not mind meeting my instructors or classmates in person	20 (6.1%)	12 (3.6%)	86 (26.1%)	146 (44.4%)	49 (14.9%)
I am familiar with Landmark University Online Course Compacts	17 (5.2%)	31 (9.4%)	75 (22.8%)	138 (41.9%)	52 (15.8%)
My lecturers struggle to tally online course compacts with occurring lectures	30 (9.1%)	70 (21.3%)	106 (32.2%)	83 (25.2%)	22 (6.7%)
I ask questions when I have a problem or question from the provided online course compacts	15 (4.6%)	54 (16.4%)	90 (27.4%)	113 (34.3%)	37 (11.2%)

The table 4.3 shows the descriptive statistics on the responses of the respondents on student’s academic performance. The table shows that most of the respondents (67.5%) asserted they made themselves really in all their subject’s activities. Also, it can be deduced from the table that majority of the respondents (66%) favored the assertion that they pay attention and listen during every discussion. Going forward, the table also revealed that when respondents were asked if they want to get good grades in every subject 2.4% of the respondent strongly disagreed, 0.9% of them disagreed with the claim. However, the table also shows that 11(3.3%) of the respondents were undecided about the statement while 118(35.9%) of them agreed and 177(53.8%) strongly agreed with the claim respectively. When also asked if they actively participate in every discussion, more than half of them (54.1%) answered in the affirmative. Going forward, the statement “Feedback and self-reflection are part of the routine of all lecture activities” was also favored by more than half of the respondents (67.1%).

It can also be discovered from the table that a larger percentage of the respondents agreed to the statement that “they exert more effort when they do difficult assignments”. The statement “I enjoy homework and activities because they help me improve my skills in every subject” was likewise favored by 59% of the respondents. Lastly, the table again shows that 61.4 percent of the respondents asserted that Solving problems is a useful hobby for them.

**Table 4.3** Descriptive Statistics of Responses on students’ Academic Performance

	<b>Statement</b>	<b>SD</b>	<b>D</b>	<b>U</b>	<b>A</b>	<b>SA</b>
1	I made myself ready in all my subjects’ activities	7 (2.1%)	32 (9.7%)	57 (17.3%)	148 (45.0%)	74 (22.5%)
2	I pay attention and listen during every discussion.	11 (3.3%)	26 (7.9%)	65 (19.8%)	170 (51.7%)	47 (14.3%)
3	I want to get good grades in every subject.	8 (2.4%)	3 (0.9%)	11 (3.3%)	118 (35.9%)	177 (53.8%)
4	I actively participate in every discussion.	7 (2.1%)	46 (14.0%)	88 (26.7%)	132 (40.1%)	46 (14.0%)
5	Feedback and self-reflection are part of the routine of all lecture activities	10 (3.0%)	21 (6.4%)	64 (19.5%)	158 (48.0%)	63 (19.1%)
6	I enjoy homework and activities because they help me improve my skills in every subject	11 (3.3%)	42 (12.8%)	72 (21.9%)	149 (45.3%)	45 (13.7%)
7	I exert more effort when I do difficult assignments	7 (2.1%)	25 (7.6%)	46 (14.0%)	151 (45.9%)	88 (26.7%)
8	Solving problems is a useful hobby for me	16 (4.9%)	29 (8.8%)	68 (20.7%)	152 (46.2%)	50 (15.2%)

**Authors’ computation, 2022**

**Regression result of hypothesis testing**

The hypothesis was statistically tested using multiple regression to (i) identify whether or not there is a relationship, and (ii) examine the degree of the relationship, between the independent variable (that is, the online course-compact) and dependent variable (students’ academy performance); (iii) to access the predictor importance of the variables and finally (iv) to analyze the significance effect of the variables under study.

**Table 4.4:** Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.460 <sup>a</sup>	.212	.209	.53109

a. Predictors: (Constant), online course compact (OCC)

**Authors’ computation, 2022**

The model summary table shows how much of the variance of the dependent variable (students’ academy performance) is explained by the independent variable (online course-compact). In this case, the adjusted R square of 0.209 (20.9%) showed variability of the independent variable (online course-compact) while the standard error of the estimate indicates .53109 which signifies error term. This indicates that 20.9% of the variations in students’ academy performance are explained by online course-compact. The findings are

supported by Analysis of Variance ANOVA (F test) results that the model or none of the parameters was equal to Zero.

**Table 4.63** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.726	1	23.726	84.120	.000 <sup>b</sup>
	Residual	88.282	313	.282		
	Total	112.008	314			

a. Dependent Variable: students' academy performance

b. Predictors: (Constant), OCC

**Authors' computation, 2022**

**Interpretation of Result:** The ANOVA table shows that the F value is 84.120 at .000<sup>b</sup> significance level. The implication is that online course-compact has a significant effect on students' academy performance. Therefore, there is a significance effect of online course-compact on students learning experience

**Table 4.64:** Coefficient Table for the Independent Variable (Online Course Compact)

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	1.988	.197	Beta	10.111	.000
	OCC	.500	.055	.460	9.172	.000

a. Dependent Variable: students' academy performance

**Authors' computation, 2022**

The coefficient table above depicts the statistically significant contribution reflected in the simple model expressing the extent to which variables included in the model contributed to the prediction of the dependent variable via the viewing of the sig column in the table and checking for the multicollinearity in the model. The level of significance was based on a level of 0.05 for a two-sided test, with the absolute value of the test statistics (T) greater than or equal to the critical value of 1.96. The model revealed that online course compact had statistical significance in predicting students' academy performance with high beta values (*beta* = .460) with Tval (9.172) higher than 1.96, sig. .000  $p < .05$ . This means that the presence of online course-compact in the University for lectures is of a high impact in knowledge transfer in the learning experience of the students. This implies that for each unit increase in online course-compact, there are up to .331-unit increase respectively students' academy performance. Hence, the significance level below 0.05 implies a statistical confidence of above 95%. This implies that the presence of online course-compact influences students' academy performance. Thus, it is concluded that provision of online course-compact significantly enhance students' academy performance.

**Discussion of finding**

The authors of the current study assessed the relationship between online course compact and student academic success. Governments in each country forced all universities and institutions to operate online due to the pandemic situation around the world. Even though some of the teachers lacked IT skills, they updated themselves to deal with the unanticipated situation (Pillai et al., 2021). The findings of the current study will support teachers in improving online learners' performance and satisfaction. The current study helps teachers comprehend the various elements needed for online instruction. When comparing the current research to earlier studies, the earlier studies looked at the variables influencing students' academic achievement within the context of traditional schooling. The current study, however, was carried out in the post-COVID period to pinpoint the crucial elements that influence how well students succeed in online courses. The results of the current study

suggested a substantial connection between online course compact and student academic success. The results of earlier researchers like Gopal, Singh, and Aggarwal (2021), Mandasari (2020), and Agarwal and Kaushik are also in agreement with this discovery (2020). Online course designers and lecturers will explore deeper into how to structure online courses more effectively from the results, including design elements that maximize positive emotion and reduce negative emotion, resulting in higher academic achievement. The results of their study demonstrate that students' academic performance have changed significantly as a result of their online learning. Despite having their first exposure with online learning during the Covid-19 pandemic, the students generally agreed that it was beneficial for them (Agarwal & Kaushik, 2020; Rajabalee & Santally, 2020). According to some earlier studies, students' performance is positively correlated with classes that use technology.

## **5. Conclusion, recommendations, and limitations**

The study will look at how students' academic performance at Landmark University in Omu-Aran, Kwara State, is affected by online course compacts. The study of the data and its results led to the following conclusions. The overall effectiveness of the online course compact as a teaching tool in higher education was modest. According to the study, online course content has a significantly low impact on students' academic performance at Landmark University. The study provides additional evidence for how the utilization of online courses affects student learning habits and their academic performance at Landmark University. Hence the following recommendations are made; more emphasis be put on the student's capacity to understand the significance of online courses for exam preparation rather than only preparing based on Chalkboard notes. More significantly, since most publications in database journals include current and pertinent information, students should feel at ease using them as sources for tests and assignments. Additionally, the online library site should have included instructional films that highlight how simple it is to access the online course materials as well as underscore their significance and capacity to assist students generate high-quality work and enhance their performance. The university now only provides a few computer-based learning courses, but this might be enhanced by adding distance learning to several of the courses that primarily draw students from outlying areas. This would also lower the percentage of student dropouts, particularly at the master's level when it can be challenging for students to juggle work, school, family, and business travel.

### **Limitation of the study and recommendation for further studies**

Due to the cross-sectional nature of the data used in this study, it is challenging to determine the cause-and-effect link between the variables. A longitudinal study can be used in future studies to overcome this constraint. Additionally, only one category of respondents—students—were used to get the data. As a result, it is impossible to extrapolate the study's findings to additional samples. To further generalize the findings, future study can incorporate perspectives from educators and decision-makers. Since the current study primarily considers theory classes, it can be used to evaluate how well students perform in practical classes. The study is limited to students at a private tertiary institution in Nigeria; therefore, data from other higher education institutions and nations could provide more comparison results to better comprehend the student's perspective. The performance of teachers can be evaluated in the future under similar circumstances because this study is only focused on evaluating student achievement. The limited internet connectivity or disruption caused by weak signals are only two potential concerns that students may experience. Some students may experience problems with their home environments, such as family member disturbance, which could affect their performance. Future research can incorporate the aforementioned ideas.

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