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EXTENT OF UTILIZATION OF GOOGLE CLASSROOM BY VOCATIONAL EDUCATION LECTURERS FOR TEACHING IN PUBLIC UNIVERSITIES IN ENUGU STATE, NIGERIA

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Abstract
This study sought to determine the extent of utilization of Google classroom by Vocational Education Lecturers for teaching in public universities in Enugu State. The sample of the study was 111 lecturers. The study adopted descriptive survey research design. The instrument for data collection was a structured questionnaire. The data collected for this study was analyzed using mean and standard deviation, while null hypotheses were tested using t-test at 0.05 level of significance and ANOVA. Findings from the study revealed that Google classroom are most used for delivering instructional content and facilitating student learning in public universities in Enugu State; and there is no significant difference in the mean ratings of male and female Vocational Education Lecturers on the extent of utilization of Google classroom by Vocational Education Lecturers for teaching in public universities in Enugu State. It was therefore recommended among others that there should be regular workshops and training sessions for vocational education lecturers to enhance their digital literacy and proficiency in using Google Classroom.

Keywords: Google classroom, Vocational Education Lecturers, Utilization, Teaching.

Introduction

Google classroom is becoming more useful and effective to vocational education lecturers in teaching for its flexibility and ease of use. Google classroom is a device designed by Google to streamline educational workflows by integrating with Google Drive, Docs, and Gmail to make easy teacher-student interaction (Sharpe & Young, 2023). The authors stated that Google classroom which is an innovative platform provides seamless communication and resource sharing between lecturers and students. Miller (2023) also stated that Google Classroom improves teamwork between teachers and students in a digital background. According to Khalisah & Din (2023), Google Classroom facilitates lecturers to control coursework by putting in order tasks, cheering communication, and tracking student progress in real-time. Google classroom is an online learning management system where lecturers can generate lessons, give out coursework, and promote collaborative learning (Miller, 2023). Google Classroom provides a central position for managing teaching resources, encouraging both asynchronous and synchronous learning (Khalisah & Din, 2023). Google classroom promotes the use of digital tools for quizzes, discussion forums, and real-time feedback (Miller, 2023). Google Classroom integrates seamlessly with Google's suite of tools to enhance the accessibility and usability of digital learning materials" (Sharpe & Young, 2023). Google Classroom is a complete answer for organizing class content, enabling lecturers to save time and develop organizational competence (Miller, 2023). Google classroom stands as a platform where lecturers can computerize assignment workflows, thereby reducing administrative burden and enhancing focus on teaching" (Sharpe & Young, 2023). Google Classroom allows lecturers with digital tools to monitor student progress and provide individualized feedback effectively" (Khalisah & Din, 2023). Therefore, Google classroom is a learning management system used in enhancing teaching by Vocational Education Lecturers.

Vocational education lecturers refer to trade professionals who bring practical skill and contemporary trade knowledge into the classroom (Smith & Johnson, 2022). Vocational education lecturers are seen as enhancers of skill development who propose and carry out instructional knowledge focused on training students with definite trade or practical skills

(Anderson & Miller, 2023). In the context of vocational education, lecturers are defined as curriculum designers who generate and bring up to date teaching resources and learning programs (Gordon & Peterson, 2023). Vocational education lecturers offer advice on trade trends, employment search strategies, and expert improvement, helping students move smoothly from education to employment (Taylor & White, 2023). Vocational education lecturers make sure that students meet up the necessary principles and are ready for certification or licensing in their respective fields (Williams & Chen, 2023). According to Smith et al. (2023), vocational education lecturers combine theoretical knowledge with hands-on experience to prepare learners for the workforce. Miller and Cooper (2024) highlight the importance of lasting learning for vocational lecturers to retain trade importance. Because of the advantages associated in using Google classroom to impact knowledge to students, Vocational education lecturers use Google classroom in teaching.

Teaching is the method of enhancing the building of information by students through engaging activities, discussions, and inquiry-based learning (Brusilovsky & Millán, 2021). This method underlines the role of the lecturers in helping students to vigorously develop their own understanding rather than just delivering content (Brusilovsky & Millán, 2021). Teaching helps lecturers to use different strategies and tools to promote student participation and interaction (Hattie & Yates, 2014). Teaching also help educators to provide brief support structures that help students achieve higher levels of understanding and skill acquisition which focuses on the dynamic support provided by lecturers to facilitate student learning (Wood, Bruner, & Ross, 2023). It is important to use Google classroom for teaching students by vocational education lecturers to enhance proper utilization. Utilization refers to the extent to which resources, systems, or services are used successfully to attain desired outcomes or goals (Wang & Kaur 2023). It often measures the actual use compared to potential capacity in various contexts, such as education, or industrial processes. According to Wang et al. (2023), utilization is an important metric for evaluating the effectiveness and usefulness of resource deployment in educational and industrial contexts. As noted by Smith and Garcia (2022), utilization serves as a yardstick for assessing the performance and productivity of systems within educational contexts. As stated by Thompson, Patel & Zhang. (2023), utilization is a key performance pointer that helps organizations such as education to examine the efficiency and effectiveness of their resource use over time. According to Robinson and Clark (2023), utilization is an essential metric for evaluating the position of accessible resources with educational demands and the attainment of service delivery goals.

Statement of the Problem

In current years, the incorporation of digital tools in education has added important energy, with platforms like Google Classroom becoming a fastener for enhancing teaching experiences. vocational education lecturers use Google classroom in teaching because of the numerous benefits associated with it such as providing a central position for managing teaching resources, encouraging both asynchronous and synchronous learning, promoting the use of digital tools for quizzes, discussion forums, and real-time feedback, integrating seamlessly with Google's suite of tools to enhance the accessibility and usability of digital learning materials, organizing class content, enabling lecturers to save time and develop organizational competence helping lecturers to computerize assignment workflows, thereby reducing administrative burden and enhancing focus on teaching, allowing lecturers with digital tools to monitor student progress and provide individualized feedback effectively among others. Despite its universal implementation, the extent to which vocational education lecturers in public universities in Enugu State utilize Google Classroom remains unknown. The lack of empirical proof on how far and well vocational education lecturers use Google Classroom in Enugu State creates a major gap in knowledge. Understanding this utilization is important for policymakers, educators, and stakeholders to develop targeted interventions aimed at improving the quality of vocational education through digital platforms. Thus, this study sought to determine the extent to which Google Classroom is utilized by vocational education lecturers in teaching in public

universities in Enugu State, and explore potential strategies for maximizing the platform's effectiveness in teaching if it is not highly utilized.

Purpose of the Study

The main purpose of the study is to determine the extent of utilization of Google classroom by Vocational Education Lecturers for teaching in public universities in Enugu State. Specifically, this study sought to:

1. determine how vocational education lecturers in public universities in Enugu State utilize Google Classroom for delivering instructional content and facilitating student learning.
2. determine the challenges associated with the use of Google Classroom for delivering instructional content and facilitating student learning by vocational education lecturers in public universities in Enugu State.

Hypotheses

H_{01}: There is no significant difference between the mean ratings of male and female vocational education lecturers on the extent vocational education lecturers in public universities in Enugu State utilize Google Classroom for delivering instructional content and facilitating student learning.

H_{O2}: There is no significant difference in the mean ratings of Vocational Education Lecturers on the challenges associated with the use of Google Classroom for delivering instructional content and facilitating student learning with respect to years of experience by vocational education lecturers in public universities in Enugu State.

Methods

This study adopted descriptive survey. The area of the study was public universities in Enugu State with a population of 111 vocational education lecturers in public universities in Enugu state consisting of 101 Vocational Education Lecturers from University of Nigeria Nsukka 10 vocational education lecturers from Enugu State University of Science. Total population sampling technique was used to select all the 111 vocational education lecturers in the study area since the population is manageable. Structured questionnaire was developed by the researcher and used for data collection. The questionnaires consisted of two sections: A and B. Section A sought information on the demographic information of the respondents. Section B elicited data on the extent Vocational Education Lecturers utilize Google Classroom for delivering instructional content and facilitating student learning. Each item in section A has a 4 - point response options as follows: Highly utilized (HU) = 4, Utilized (U) = 3, Moderately Utilized (MU) = 2 and Not Utilized (NU) = 1. The research instrument was face-validated by three experts. Two were from Computer and Robotics Education, University of Nigeria, Nsukka, while the third expert was from the Department of Home Economics Education, University of Nigeria Nsukka. Reliability of the instrument was determined by administering the instrument to 10 lecturers in public universities in Anambra State, which was outside the study area. The consistency of the instrument was obtained using Cronbach's Alpha statistics which yielded .73 and .80 with the overall reliability co-efficient of 0.77. The data for this study were gathered by the researcher with the assistance of two research assistants. The data collected from the respondents were analyzed using mean and standard deviation to answer the two research questions, while the hypothesis was tested using t-test statistic at 0.05 level of significance using SPSS (version 22) and ANOVA. Any hypothesis whose significance "sig (2-tailed)" level is less than or equal to the stated 0.05 level of significance, the null hypothesis was rejected but the significance "sig (2-tailed)" level that is greater than 0.05 level of significance was accepted.

Results

Table 1: Mean and standard deviation ratings on the extent Vocational Education Lecturers in public universities in Enugu State utilize Google classroom for delivering instructional content and facilitating student learning.

N = 111

S/N	Item	$\bar{x}$	SD	Decision
1	I use Google classroom for uploading lecture notes.	1.80	.81	MU
2	I use Google classroom for sharing lecture notes.	2.82	1.06	MU
3	I use Google classroom for uploading and sharing presentations.	1.40	.74	NU
4	I frequently use Google classroom for creating assignments.	2.17	1.29	MU
5	I often use Google classroom for distributing assignments.	1.62	.87	MU
6	I frequently use Google classroom for uploading and sharing multimedia resources.	1.24	.58	NU
7	I often use Google classroom for collecting assignments.	1.97	.99	MU
8	I frequently use Google classroom for Creating quizzes.	1.72	1.06	MU
9	I often use Google classroom for Tracking and Monitoring student's Progress.	1.16	.51	NU
10	I frequently use Google classroom for distributing quizzes.	1.91	.98	MU
11	I frequently use Google classroom for collecting quizzes.	1.57	.85	MU
12	I use Google Classroom for Integrating Other Educational Tools.	1.49	.71	NU
13	I use Google classroom to automate grading for objective questions and providing timely feedback.	1.60	.82	MU
	Cluster Mean	**1.73**	**0.87**	**MU**

Key: X= mean; SD = Standard Deviation; NU = Not Utilized; MU = Moderately Utilized.

The data presented in Table 1 shows that four items out of thirteen items have means ranging from 1.16 to 1.49 which indicate not utilized while remaining nine items have their means ranging from 1.57 to 2.17 which indicate moderately utilized. The overall mean of 1.73 also indicates that Vocational Educational Lecturers moderately utilize Google classroom for delivering most instructional content and facilitating student learning. This categorizes Google Classroom as a moderately utilized tool in the university. Items 2, 4, 7, 8, 10, and 13 show higher means ranging from 1.57 to 2.82 which indicates that Google Classroom is moderately utilized to share lecture notes and materials, create and distribute assignments and quizzes, and track student progress by Vocational Education Lectures for delivering most instructional content and facilitating student learning. Items 3, 6, 9, 11, and 12 have means ranging from 1.16 to 1.49 which indicates that Google Classroom are not utilized by vocational education lecturers to upload and share presentations, distribute multimedia resources, track student progress, collect quizzes, and integrate other educational tools for delivering some instructional content and facilitating student learning. The standard deviations of the 13 items ranging from 0.51 to 1.29 indicates a wide range of opinions and practices regarding the utilization of certain Google Classroom functions. The standard deviations of all the items ranging from 0.51 to 1.29 showed that the respondents were close to the mean which indicate that respondents were not far from each other in their responses.

Table 2: Mean and standard deviation ratings on the challenges associated with the use of Google Classroom for delivering instructional content and facilitating student learning by vocational education lecturers in public universities in Enugu State.

S/N	ITEMS	X	SD	Decision
1	Limited or no internet access can prevent lecturers from uploading content, and students from accessing and engaging with the learning materials	3.85	.34	SA
2	Technical Skills Gap hinder vocational education lecturer ability to create engaging content.	3.63	.52	SA
3	Limited Digital Literacy can lead to confusion, frustration, and decreased engagement with the learning materials.	3.78	.34	SA
4	Technical issues such as system downtime and software bugs are frequent obstacles	3.78	.34	SA
5	Poor internet connectivity is a major hindrance to digital library services	3.65	.45	SA
6	Challenges in providing stable and high-speed internet access to vocational education lecturers	3.38	.45	A
7	Inadequate trained staff to manage Google Classroom effectively	3.28	.52	A
8	Vocational education lecturers are often untrained or unaware of how to maximize Google Classroom platform.	3.36	.52	A
	Total	3.59	.44	SA

Key: X= mean; SD = Standard Deviation; SA = Strongly Agree; A = Agree.

Data presented in the Table 2 show that five items have means ranging of 3.63 to 3.85 indicating strongly agree while three items have means ranging from 3.28 to 3.38 indicating agree. The overall mean which is 3.59 also indicates that the challenges associated with the use of Google Classroom for delivering instructional content and facilitating student learning by vocational education lecturers in public universities in Enugu State are strongly agreed on. The findings of this study show that Limited or no internet access can prevent lecturers from uploading content, and students from accessing and engaging with the learning materials received a mean rating of 3.85 indicating a strong agreement among respondents that this challenge is strongly agreed on. Technical Skills Gap hindering vocational education lecturer ability to create engaging content received a mean rating of 3.63 also showing a strong agreement that this challenge is strongly agreed on. Limited Digital Literacy leading to confusion, frustration, and decreased engagement with the learning materials received a mean rating of 3.78 indicating a strong agreement on the impact of this challenge. Technical issues such as system downtime and software bugs are frequent obstacles received a mean rating of 3.78 showing a strong agreement among respondents on the presence of this challenge. Poor internet connectivity being a major hindrance to digital library services received a mean rating of 3.65 indicating a strong agreement among respondents on the challenge. Challenges in providing stable and high-speed internet access to vocational education lecturers received a mean rating of 3.38 showing agreement that this challenge is present. Inadequate trained staff to manage Google Classroom effectively received a mean rating of 3.28 indicating agreement on the lack of training in managing the platform. Vocational education lecturers are often

untrained or unaware of how to maximize the Google Classroom platform received a mean rating of 3.36 showing agreement on the need for training and awareness. Overall, the total mean rating for the challenges associated with the use of Google Classroom for delivering instructional content and facilitating student learning by vocational education lecturers in public universities in Enugu State is 3.59 indicating a general strong agreement on the significance of these challenges. The Standard Deviations of the eight items ranging from 0.43 to 0.52 showed that the respondents were close to the mean which indicate that respondents were not far from each other in their responses.

Table 3: t-test analysis of the mean responses of male and female Vocational Education Lecturers on the extent of utilization of Google classroom for delivering instructional content and facilitating student learning in public universities in Enugu State

Respondents	N	$\bar{x}$	SD	Df	T	Sig(2-tailed)	p-value	Decision
Male	43	2.00	0.97	93	0.75	0.25	0.05	NS
Female	50	2.01	1.14					

Key: X = Mean; SD = Standard Deviation; df = Degree of Freedom; NS = Not Significant.

From the data presented on the t-test statistic in Table 3, it was revealed that the t (0.75) at 93 degree of freedom (df) is significant at 0.25 which is greater than the p-value of 0.05. This finding showed that, there is no significant difference between the mean ratings of the responses of male vocational education lecturers and female vocational education lecturers on the extent of utilization of Google classroom for delivering instructional content and facilitating student learning in public universities in Enugu State Therefore, the null hypothesis of no significant difference in the mean ratings of the responses of male and female Vocational Education Lecturers on the extent of utilization of Google classroom for delivering instructional content and facilitating student learning in public universities in Enugu State was not rejected.

Table 4: ANOVA analysis of the mean responses of Vocational Education Lecturers on the challenges associated with the use of Google Classroom for delivering instructional content and facilitating student learning with respect to years of experience by vocational education lecturers in public universities in Enugu State.

Source	Group	Sum of Square	df	Mean Square	F	p-value	Remark
Overall	Between Groups	1.100	2	0.550	107.655	0.071	NS
	Within Groups	3.938	92	0.043			
Not Significant at 0.05	Total	5.038	94				

The one -way ANOVA presented on Table 4 show the statistical mean square, F ratio, degree of freedom and p-value of responses among the years of experience of Vocational Education Lecturers on the challenges associated with the use of Google Classroom for delivering instructional content and facilitating student learning by vocational education lecturers in public universities in Enugu State. The table showed the cluster F-ratio of 107.655, at 94 degree of freedom and p-value of 0.082 which is greater than 0.05. Thus, the null hypothesis was accepted that there is no significant difference in the mean ratings of Vocational Education Lecturers on the challenges associated with the use of Google Classroom for delivering instructional content and facilitating student learning by vocational education lecturers in public universities in Enugu State.

Discussions

The data presented in Table 1 shows that four items out of thirteen items have means ranging from 1.16 to 1.49 which indicate not utilized while remaining nine items have their means ranging from 1.57 to 2.17 which indicate moderately utilized. From the above results it can be discovered that most Vocational Education Lecturers moderately use Google classroom for delivering instructional content and facilitating student learning. This can be seen from the overall mean ratings of the e-assessment platforms which is 1.73 within the boundaries of 1.50 to 2.49 indicating moderate utilization by Vocational Education Lecturers. The cluster mean of 1.73 indicates that Google Classroom is moderately utilized by vocational education lecturers for delivering instructional content and facilitating student learning which means that they are not highly utilized. This suggests that while lecturers employ Google Classroom for some functions, there is substantial room for improvement regarding its incorporation into teaching practices. Sharing Lecture Notes which has a mean of 2.82 indicates that vocational education lecturers often use Google Classroom for sharing lecture notes, which is a fundamental aspect of instructional delivery. Creating Assignments which has mean of 2.17 and Distributing Quizzes which has mean of 1.91 also indicate that vocational education lecturers are actively engaging with students on assignments and assessments using Google Classroom platform. Items such as Uploading and Sharing Presentations with mean of 1.40, Uploading and Sharing Multimedia Resources with the meant of 1.24, and Tracking and Monitoring Student Progress with mean of 1.16 show indicate that vocational education lecturer do not utilize Google Classroom to enhance some of their teaching strategies and engage students more effectively. The standard deviation values ranging from 0.51 to 1.29 reflect varying levels of agreement among lecturers in their utilization of Google Classroom features. From the test of hypothesis shown in Table 3 male Vocational Education Lecturers do not have a different opinion in the use of Google classroom from the female Vocational Education Lecturers. It shows that the gender status of Vocational Education Lecturers do not have significant influence on the use of Google classroom for delivering instructional content and facilitating student learning in public universities in Enugu State.

The responses obtained from Table 2 indicate that the vocational education lecturers in public universities in Enugu State shed light on the challenges they face when utilizing Google Classroom for delivering instructional content and facilitating student learning. The results presented in Table 2 provide mean scores and standard deviations that offer insights into the severity and consensus regarding these challenges. The table indicates that lecturers perceive several challenges associated with the use of Google Classroom. The mean scores for all items ranging from 3.28 to 3.85 indicate that these challenges are generally perceived to be substantial. The items with the highest mean scores include: Limited or no internet access impacting content uploading and student engagement with the mean of 3.85 shows a critical barrier to effective use of Google Classroom which indicate the crucial role of internet connectivity in facilitating online learning. Challenges of Limited Digital Literacy causing confusion and decreased engagement with mean of 3.78 and Technical issues leading to obstacles with the mean of 3.78 are equally rated high emphasizing the importance of addressing digital literacy and technical support for successful implementation of online teaching. Poor internet connectivity with mean of 3.65 and Challenges in providing stable and high-speed internet access with mean rating of 3.38 highlight the critical role of reliable internet services in enabling efficient use of digital platforms for education. Challenges related to Technical Skills Gap with the mean of 3.63, Inadequate staff training on Google Classroom with mean rating of 3.36, and Vocational education lecturers' unfamiliarity with maximizing the platform with mean rating of 3.36 underscore the importance of ongoing professional development and support in enhancing lecturers' ability to leverage technology effectively. Table 4 showed that the null hypothesis was accepted and there is no significant difference in the mean ratings of Vocational Education Lecturers on the challenges associated with the use of

Google Classroom for delivering instructional content and facilitating student learning with respect to years of experience in public universities in Enugu State.

Conclusion

The study has provided valuable approaches into the extent of utilization of Google Classroom by vocational education lecturers in public universities in Enugu State, Nigeria. The findings of the study show that while Google Classroom has been adopted by a considerable number of lecturers in the study institutions, its utilization is still limited in certain aspects. The findings of the study indicate that majority of the respondents have Google Classroom at least once for teaching purposes. The study identifies lack of digital literacy, inadequate internet bandwidth, and lack of technical support as the main reasons for non-adoption of Google used Classroom by vocational education lecturers. The study also reveals that only 40% of the respondents use Google Classroom regularly, while 25% use it irregularly, and 35% never use it. The study identifies inadequate training and support limited internet bandwidth, and lack of familiarity with the tool as the main reasons for limited utilization of Google Classroom. While Google Classroom offers important potential for improving instructional delivery and facilitating student learning, its effective utilization depends on factors such as digital literacy, access to technology, and the adaptability of vocational courses to an online platform.

Recommendations

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

1. There should be regular workshops and training sessions for vocational education lecturers to enhance their digital literacy and proficiency in using Google Classroom.
2. Universities should provide hands-on training focused on utilizing Google Classroom features for delivering instructional content and facilitating interactive learning
3. Universities should ensure reliable internet connectivity and provision of adequate ICT facilities, such as laptops and projectors, to support the effective use of Google Classroom.
4. Public universities should integrate Google Classroom into their existing curriculum to enhance online learning and collaboration among students.

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