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Correlation between Science and Education Lecturers' Perceived Use of Google Classroom for Instruction

Peace Akpegi*, Omotayo Olabo Obielodan, Amos Ochayi Onojah, Adenike Aderogba Onojah, Mohammed Rabiu Abdulrahman

Faculty of Education, University of Ilorin, Nigeria
*Correspondence: E-mail: haymoresonojah@yahoo.com

A B S T R A C T

Technology has gained importance in all stages of education, yet educators have been unable to figure out which of the many available technological tools best fit their classroom practices. Google Classroom is one such tool that is free of cost and has gained popularity quickly. This study investigates the perceived use of google classroom among science and education lecturers and their relationship. This study, which uses the questionnaire method, consists of 150 lecturers who have implemented Google Classroom for at least one semester in their classroom. Findings revealed that lecturers positively perceive Google Classroom if all the necessary resources and environments are implemented. It has a user-friendly interface, and it saves time tremendously. It concludes that google classroom has a long-term future in instruction at the university of Ilorin provided the application keeps upgrading to meet user needs. This implies that adequate access to the internet and intelligent digital tools are the major drawbacks to the use of google classroom. It was, however, recommended that if deliberate efforts are channelled towards internet connectivity and availability of useable computers, it would go a great length

A R T I C L E   I N F O

1. INTRODUCTION

The roles of Science and Education lecturers cannot be overstated. Lecturers create, produce, and distribute content as experts in their fields through various channels and platforms. They develop lesson plans, curriculum, and course materials, connect with students, perform fieldwork and research, assist with application processing, and attend meetings, conferences, and interviews. So they need all the technology they can get to ease the delivery of their roles. Information and communication technology (ICT) has quickly become one of the fundamental building blocks of modern society (Cooke, 2013; Dawot & Ibrahim, 2014). Many institutions now consider understanding and mastering the essential skills and concepts critical in education. This is because it adds value to learning processes and the organization and administration of learning institutions.

It includes various technologies that capture, process, and transmit data and information using computer facilities. It is a catch-all term for any communication device or application, including radio, television, cellular phones, computers, networks, hardware and software, and satellite systems. Basically, technology-related services, methods, and applications. (Agah, Ogbeche & Okorie, 2016). Google Classroom is meant to help lecturers manage the creation and collection of student assignments in a paperless, technology-allowed, and remote environment. It leverages the framework of Google Docs, Drive, and other Applications on the Google-accepted web (Iftakhar, 2016; Okmawati, 2020; Suwantarathip & Wichadee, 2014). At institutions currently signed on with Google, there are several ways in which Google Classroom could benefit students and lecturers.

Educational Technology focuses on applying these new technologies in an educational context and environment (Acevedo-Borrega, et al., 2022; Scanlon, 2021). It serves as a tool for supporting the various components of education. Hence, we cannot undermine the importance of Information Technology devices in any given institution or organization. This is because many institutions are fast recognizing the limited nature of human strength and capacities in handling complex challenges on a day-to-day basis. Hence computers, laptops, Personal Digital Assistants (PDAs), smartphones, and various applications have often been employed to simplify multiple daily tasks. Recently, many changes have occurred that promote and support lecturers to adopt technology in education and encourage remote learning. For instance, many online courses are offered; many smartphones can now synchronous virtual classrooms that enable them to interact with students in real-time to promote workforce learning (Fake & Dabbagh, 2020; Kebritchi et al., 2017; Martin & Parker, 2014). One such virtual classroom is Google Classroom.

Google Classroom is a new tool introduced in Google Apps for Education in 2014. This classroom facilitates lecturers to create and organize assignments quickly, provide feedback efficiently, and easily communicate with their classes (Kevin, 2019; Shelvam, et al. , 2022). Hence, Google Classroom was developed by Google for academic purposes that support a blended learning platform. Google classroom was created to allow lecturers to spend more time with their students and less time on paperwork (Iftakhar, 2016; Rahmad, et al., 2019; Olumorin, et al., 2022). Google's latest announcement brings new functionality to Google Classroom. The new functionality includes adding more than one teacher and preparing for classes in advance. Google Classroom has the potential to streamline communication and workflow for students by providing a single access point to discussion threads. From the preceding, we can say that anyone using Google Classrooms is very effective at work. Google Classroom is easy to use, saves time, is cloud-based, and is flexible, accessible, and mobile-friendly (Alim, et al., 2018; Rahmawati, 2020; Triana, et al., 2021).

As researchers, we have assumptions that at the University of Ilorin, a few lecturers may hold various perceptions about applying technology for teaching purposes. While some lecturers like to explore new technologies to enhance their instructional delivery, others are discouraged from making attempts. Some common excuses given for not using technological tools include: "I am too old to learn", "Technology and I do not get along well", "I have never been trained to use those gadgets to teach," and "I don't want technology to replace me in class". Although some of these reasons may seem valid, lecturers cannot deny the need to incorporate new technologies in 21st-century classrooms. Lecturers will not be replaced by technology, but lecturers who do not use technology will be replaced by those who do (Nagoba & Mantri, 2015), This thought-provoking statement explains that instructors who do not dare to explore the benefits of technology and prefer to stick to traditional teaching methods may sooner or later become irrelevant to the educational system. Against this backdrop, this study examines the relationship between science and education lecturers' perceived use of Google Classroom for instruction at the University of Ilorin.

The awareness and use of Google Classroom among lecturers in most institutions in Nigeria are still in their infancy stage (Agah, Ogbeche & Okorie, 2016). The advantages of using Google Classrooms for educational assessment have been recognized by numerous staff to include: lowered administrative cost, time savings, less demand upon lecturers--- and others. While acknowledging these advantages, it has been observed that some lecturers have mixed feelings about adapting to and incorporating this computerized process because they are accustomed to the traditional methods of taking notes and circling questions and answers with paper and pen for later review (Ballew, 2017; Bayarmaa & Lee, 2018; Shaharanee et al., 2016). Some lecturers think they read more quickly and easily on paper than glaring at a computer screen. Others may complain about the effects of the screen on the eyes. In comparison, some may argue that they lack basic computer literacy to begin to adopt the technology. All these conflicting opinions based on questions asked by the researcher affected the acceptance and attitude toward adopting Google Classrooms for educational purposes in schools.

But with the recent pandemic called COVID-19, which stopped many activities, including education (primarily physical classes), it became apparent that the need to learn, accept and adopt remote learning as the norm in institutions and work life. Using technology became a necessity. Hence, it has become pertinent to investigate the relationship between Science and Education lecturers' perceived use of Google classroom for instruction at the University of Ilorin, Ilorin.

The primary purpose of this study is to examine the relationship between Science and Education lecturers' perceived use of Google classroom for instruction at the University of Ilorin, Ilorin. The specific purposes of the study are to determine the relationship between Science and Education lecturers' perceived use of Google classroom for instruction at the university of Ilorin, Ilorin.

And the research question to guide this study is whether there is any relationship between Science and Education lecturers' perceived use of Google classroom for instruction at the University of Ilorin, Ilorin. The research hypothesis that will be tested for this study is H01: There is no significant relationship between science and education lecturers' perceived use of Google Classroom for instruction at the university of Ilorin, Ilorin.

2. METHODS
2.1. Research Design

The research design is a descriptive research survey method. The descriptive survey research method was used to gather accurate information to examine the relationship between science and education lecturers' perceived use of Google Classroom for instruction at the University of Ilorin, Ilorin.

2.2. Sample and Sampling Techniques

On the target population, progressive sampling was used. The target population for this study was all lecturers from the Faculties of Science and Education at the University of Ilorin in Ilorin. They were required to use Google Classroom for at least one semester.

This population covered the Science (Life and Physical) and Education lecturers at the University of Ilorin, Ilorin, in the 2020/2021 academic session. The study used a sample size of all Science and Education lecturers at the University of Ilorin. According to data gathered from Academic Support Services, the total population of lecturers in both faculties is currently 411. The Faculty of Science has 205 students (life science-85, physical science-120). Furthermore, the Faculty of Education has 206. However, only half of the total population, 205 lecturers, were sampled for the study and given questionnaires by the researcher. These lecturers had previously used the Google Classroom app for at least one semester. This data collection was completed. This data was collected within six weeks, considering the researcher's proximity to the sampling population and the large-scale sample.

2.3. Research Instruments

The instrument used for data collection is Perceived Google Classroom Survey Use Relationships Among Instructors. It divided the questionnaire (RLPUGCQ) into sections A and B. Section A contained questions on the biodata of the respondents (faculty members). The question was asked using the clustered frequency distribution method. Section B had nine statements regarding the perceived use of Google Classroom. All items were scored on a four-point scale: strongly agree (SA) _4, agree (A) _3, disagree (D) _2, and strongly disagree (SD) _1. The respondent was expected to select one of the options that best matched her opinion of the item on the questionnaire. E-Form/Google Form surveys have also been developed for complete data collection.

2.4. Validation of Research Instrument

The instrument was presented to the researchers and three (3) other experts from the Department of Educational Technology to examine to establish the instrument's face and content validity. Their advice and suggestions were used to modify the instrument's items and prepare the final draft of the questionnaire.

2.5. Procedure for Data Collection

The researcher personally administered the questionnaires to lecturers in the designated faculties of the institution. Adequate time was given to lecturers to fill out the questionnaire, after which the instrument was collected immediately. This was to ensure that a sufficient amount of time was given to fill them and to enhance the return rate. The link to the e-form was also shared whenever necessary. The interview method was also utilized during data collection. Regarding ethical issues, the respondents' names and personal information were not required to participate in the study. All data collected was only used for this research.

2.6. Data Analysis Technique

Data analysis deals with the presentation of the generated data for the research in a comprehensive manner. It summarizes the information generated in the study (Asika, 2011). Descriptive statistics (mean and standard deviation) and inferential statistical tools were used to analyze the data obtained from the respondents using SPSS. Hypothesis one was tested with multiple regression.

3. RESULTS AND DISCUSSION

The analysis and conclusions based on the collected data are presented in this chapter. The data presented provide a summary of the essential characteristics of the study's respondents. To guarantee that the necessary information was accurately gathered and measured, the questionnaire was sent to the respondents.150 of the 205 printed copies of the electronic questionnaire were correctly filled out and returned, for a return rate of 73.2 percent. For the analysis in this study, this was used differently.

3.1. Demographic Characteristics of the Participants

The distribution of students on gender was analyzed. The students' gender was described using percentage as shown in Table 1.

Table 1. Demographic Data Based on Faculty of Lecturers

Faculty of Instruction	Frequency	Percent	Cumulative Percent
Education	93	62.0	62.0
Science	57	38.0	100.0
Total	150	100.0	

As indicated in table 1, 93 (62.0%) of the entire population were from the faculty of Education while the remaining of 57(38.0%) were from the faculty of science.
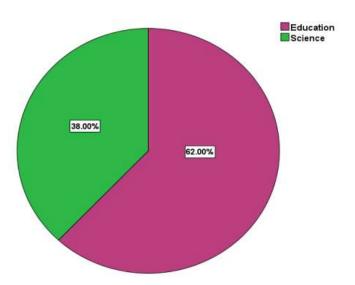

Figure 1. Chart on Respondents' Faculty

As shown in figure 1, most of the respondents are education lecturers.

3.2. Hypothesis One

There is no significant relationship between science and education lecturers' perceived use of Google Classroom for instruction at the university of Ilorin, Ilorin.

To ascertain the significant relationship between science and education lecturers' perceived use of Google Classroom for instruction at the university of Ilorin, Ilorin, regression analysis was employed.

Table 2. Model Summary on Regression of the Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.050[a]	.003	-.004	.34954

a. Predictors: (Constant), Faculty of Instruction
b. Dependent Variable: Perceived Usefulness

From the results in table 2, the adjusted R square (.003) has a poor fit. This revealed that the constructed multiple regression model of the independent variable of faculty of instruction accounts for just a 3% variance in the dependent variable (Perceived Use). The results of the analysis of variance (ANOVA) for the model are shown in table 3.

Table 3. ANOVA on the Independent Variables of Perceived Use

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Education	.046	1	.046	.374	.542[b]
1	Science	18.082	148	.122		
	Total	18.128	149			

a. Dependent Variable: Perceived Usefulness
b. Predictors: (Constant), Faculty of Instruction

The result of the analysis of variance (ANOVA) on the independent variable of Perceived Use was reviewed and presented in table 10. The result showed that $F_{(1, 148)} = 0.374$, $p>0.05$. This indicated no statistically significant relationship since the p-value is greater than 0.05. The result is shown in table 4.

Table 4. Coefficient of Independent Variables on Perceived Use

Model		Unstandarized Coefficients		Standardized Coefficient	t	Sig.
		B	Std. Error	Beta		
	(Constant)	3.189	.086		37.074	.000
1	Faculty of Instruction	-.036	.059	-.050	-.612	.542

a. Dependent Variable: Perceived Usefulness

The standardized coefficient in table 11 revealed that the independent variable of faculty of instruction of lecturers has a low influence on the perceived use of Google Classroom for education because the Beta (B=-0.05, 0.54) shows no statistical relationship value was more significant than 0.05 alpha value.
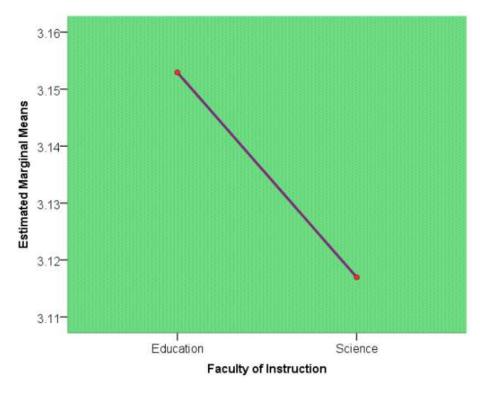
Figure 2. Chart on Influence of Faculty of Instruction on Perceived Use

The estimated marginal means of the influence of the Faculty of Instruction on the Perceived Use of GC for instruction is shown in figure 2. It indicated that the mean values of science and education lecturers show little difference. This said, lecturers' faculty had no significant influence on their perceived use of GC for instruction.

The result of this study established that lecturers' faculty did not influence their perception towards the use of google classrooms for instruction (Roehl et al., 2013). Based on quick research, the researcher found out that no significant comprehensive studies have been conducted on a lecturer-lecturer relationship. The focus in the past has been on lecturer-student. The most instructional process has been targeted toward students from lecturers (Akdeniz, 2016; Samarasekera, et al., 2018). And even when lecturers go under instruction, they become students themselves. The only consideration may be given to science and education lecturers to see if using google classroom for teaching is subject-specialized or not. A firm belief of principals of lecturers' lack of technical training and competency, which was preventing the schools from technology integration (Machado & Chung, 2015).

With the recent technological adaptation in education, google classroom can be adopted and adapted to teach any subject, including those involving practicals, since videos, links, and documents, we can share slides between lecturers and students (O'Callaghan, et al., 2017; Saini & Al-Mamri, 2019; Westberry, et al., 2015). Some education lecturers have argued that the importance of physical classrooms cannot be overstated and that google classrooms cannot take its place. Although proper, new ways of instruction are constantly being presented. At the same time, science lecturers have argued that classes must be physical for laboratory-based subjects. With these arguments, a relationship can be seen between science and education lecturers' agreement on the usefulness of google classroom for instruction, but it is not enough to cover all aspects of teaching (Izenstark & Leahy, 2015).

5. CONCLUSION

Based on research and findings, we can conclude that Google Classroom is very useful when applied to the instructional process. There is a significant positive relationship between science and education lecturers in using Google classroom for instructional activities.

The recommendations based on the research are Google Classroom also has to constantly upgrade to suit user needs so as not to be replaced with newer, better, faster, more efficient alternatives, and the institution needs to put extra efforts into electricity supply, faster internet connectivity, reliable Wi-Fi/ cheaper data rates and access to smart upgraded digital tools. These digital tools should be customized to prevent students from getting distracted from attempting to access social media or playing games during class.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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