

**ELECTRONIC-LEARNING APPLICATION AND ACADEMIC ACHIEVEMENT OF
OFFICE AND INFORMATION MANAGEMENT STUDENTS IN IGNATIUS AJURU
UNIVERSITY OF EDUCATION**

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Abstract

The study determine the impact of e-learning on academic achievement of Office and Information management students in Ignatius Ajuru University of Education. The objectives of the study was to: ascertain the impact of Google Classroom on high quality work of Office and Information Management students; and determine the impact of Whatsapp on proficiency in browsing by Office and Information Management students in Ignatius Ajuru University of Education. Arising from the stated objectives, three research questions and three hypotheses were raised to guide the study. The study was anchored on Roger's (1962) Diffusion of Innovation Theory. The research design for this study was the exploratory survey research design. The population of this study consisted of (360) students (level 100-400) in the Department of Office and Information Management, Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt. A sample size of one hundred and eighty-nine (189) respondents was obtained using the Taro Yamene Formula. Structured questionnaire (EAOIMSAARS) was used as the main instrument for the collection of primary data for this work. A total of 189 copies of the questionnaire distributed, while 130 copies of were retrieved. The primary data collected from the field was be analyzed using simple percentage for answering research questions while Pearson's product moment correlation (PPMC) was used for the test of hypotheses. The following findings were made: the use of Google Classroom increases high quality work of OIM students in Ignatius Ajuru University of Education, Port Harcourt; and the use of Whatsapp significantly improves the proficiency in browsing of OIM students in Ignatius Ajuru University of Education, Port Harcourt. It was therefore recommended among others that management should provide data subscription for lecturers to enable them make regular use of Goggle and whatsapp delivering curriculum contents of Office and Information Management.

Keywords: e- Learning Application, Academic Performance, Goggle Application, WhatSapp

Introduction

The integration of technological awareness and learning in universities is today making significant strides towards use of more interactive e-learning strategies to effectively

enhance overall performance of students and their trained personnel. In many developed economies, several academic institutions make use of extremely interactive e-learning that directly enhances students' performance (Soleymanpour, Khalkhali & Reayatkoonandeh, 2010). In the recent era, technologies have indeed become devices accustomed to get rid of physical obstacles and allow students to learn at anytime and anywhere without having physical interaction with the instructor. Against this background, e-learning therefore improves easy access to effective teaching and learning, and thus enhancing students' academic efficiency.

According to Heeger (2010), e-learning enables numerous university students to take similar programs concurrently. Nowadays, educational systems have grown to enjoy reasonable instructions in addition to their learning. Research findings indicate that e-learning systems permit instruction method geared to improve top quality related to instruction and students' academic achievement. Soleymanpour, Khalkhali and Reayatkoonandeh (2010) further elaborate that those schools that have demonstrated remarkable use of e-learning generally perform quite much better than student counterparts who much rely on use of face-to-face communications and physical interactions with their instructors.

Heeger (2010) report shows that students who generally participate in online or e-learning achieve far better amounts compared to students who examined traditional methods. Due to emergence of advancements in educational technology, e-learning is currently gaining substantial attention in education and for this reason; several educational institutions are now pursuing application of electronic learning programs. As such, e-learning is continuously becoming well-established in a number of both private and public education institutions in the world nowadays. Most of these education institutions have become aware of the impacts related to e-learning on students' academic achievement.

A broad range of learning approaches exists already, for example, e-learning, blended learning, and distance learning which utilize information and communication technology (ICT). The use of ICT can benefit, for example, students in rural areas by having them attend classes as distance learners and motivating them to learn. Regarding this, the potential of e-learning seems very assuring, but because of gaps between developed and developing countries, knowledge transfer is not only difficult but also costly. There is little systematic research into the overall effectiveness of e-learning as a learning medium despite the great interest in it, while there is much more work to be done, a variety of e-learning courses aimed at making sustainable development a reality have been developed and demonstrate how e-learning can reach thousands if not millions of minds and potentially plant the seeds of change.

According to case studies, there are already a number of e-learning programs offered in developing countries. These programs are developed by various national and international initiatives. The growth of e-learning programs according to Lockwood & Gooley, (2002) is driven by the need for and potential of providing education in less expensive ways, increased access to information, effective learning and greater flexibility.

Research Hypotheses

Ho₁: There is no significant relationship between the use of Google Classroom and high quality work of Office and Information Management students in Ignatius Ajuru University of Education, Port Harcourt.

Ho₂: There is no significant relationship between use of Whatsapp and proficiency in browsing by Office and Information Management students in Ignatius Ajuru University of Education, Port Harcourt.

Google Classroom

Osman (2017) noted that the Google classroom application depends on Google documents and cloud storage and Gmail mail service in order to accomplish the required functions, research and follow-up with students, on the other hand the service also provides tools for teachers to publish the assignments, home works, questionnaires and tests for students and get answers to them in real time. The use of Google classroom services reduce the use of paper products and convert part of the education process to full electronic process. The Google Drive service attached to Google Classroom makes it possible for teachers and educational institutions to create a folder for each new assignment students are asked to do, also it makes accessing the data available via the Drive to all the files such as documents, data sheets, PowerPoint, videos, and additional readings.

The twenty-first century science classroom consists laptops, personal digital assistants, and digital measuring devices. With the inclusion of this technology, there is often an assumption that these devices will automatically bring about revolutionary changes in teaching and learning processes. Specifically, it is assumed that the presence of technology will transform teacher- centered instruction to student centered instruction. Google Classroom has also invaded the field of education and is being regarded as a tool having immense educational possibilities. Google Classroom is a free web service by Google for schools that aims to simplify creating, distributing and grading assignments in a paper less way. The primary purpose Google Classroom is to streamline the process of sharing files between teacher and students. It was introduced as a feature of G-Suite for education, formerly Google apps for education, on May 6, 2014 followed by its public release on August 12, 2014. In June 2015, Google announced a classroom API and a share button for websites, allowing school administrators and developers to further engage with Google Classroom. In March 2017, Google opened classroom to allow any personal Google users to join classes without the requirement of having a G-Suite for Education account, and in April, it became possible for any personal Google user to create and teach a class. Google Classroom is one technology designed to enhance the learning experience. Google Classroom is an education application suite offering productivity tools such as email, document and storage for students and teachers. The tools offer opportunities for collaboration in real time and the ability to work remotely, among many other features (Google Classroom, 2024).

Iliyasu et al. (2020) identified the following benefits of using Google Classroom in teaching and learning of Office and Information Management courses include:

- i. Allows lecturers post lecture notes, create assignments, make announcements, set due dates for assignments.
- ii. Lecturers can create different groups in one classroom, then give each group a different assignment, thus making the class to be active and interesting.
- iii. Lecturers can easily identify students that miss class assignments and students that submit their assignments late
- iv. It is flexible, enabling lecturers to extend due dates so that all students can submit their assignments, similarly it allows lecturers to update or review students' grades.

- v. Previous posts made by lecturers can be reused and then posted to the same group or to a different group.
- vi. Lecturers can also be added in the classroom, they can as well grade students' assignments.

WhatsApp

The Whatsapp Instant Messaging Application was created by Brian Anton and Jan Koom with the aid of an 8 million dollar investment by Major Sequoia, one of Silicon Valley's most fashionable investors' holding companies, the pair launched WhatsApp in 2009 (Chokri, 2015). The name of the application WhatsApp was coined from the English phrase "What's up?" meaning "What's new?" is an instantaneous messaging application for smartphones. Whatsapp as a Social media enables users to share text messages, videos, images, and audio messages via Internet connection. WhatsApp is superior to SMS messaging, which can be very costly when used in foreign countries due to roaming charges; WhatsApp, in contrast, relies on the active Wi-Fi network.

A special feature of Whatsapp as a social media platform is the option to create group and to communicate within its boundaries. The person who created the group becomes the group administrator which enables him to add, erase and control membership. In the case of group chat, Aside from this, all of the participants in the group enjoy equal rights. The software makes it possible for members to receive a notification for each message sent or, alternatively, to mute the in-coming alerts for the duration of 8 hours, a day, or a whole week.

WhatsApp messenger is cross-platform instant messaging service for smart phones; it is a freeware service (Metz in Centikaya, 2017). It allows student users to send text messages, phone contacts, videos, images, GIF, documents, audio files, voice notes and user location by using standard cellular mobile numbers through internet. Information all are end-to-end encrypted. It also include a feature known as status, that permits users to upload photos and videos to a twenty four-hours-lifetime feed that, by default, are visible to all contacts, almost like Facebook, Instagram and Snapchat. Today WhatsApp messenger is becomes a very standard and famous instant messaging app for smart phones that used by millions of students in Nigerian educational system particularly the heat of Covid-19. Today, there are many whatsapp-based interactive chat forums across universities in Nigeria today and Ignatius Ajuru University of Education, Port Harcourt is not an exemption.

The use of WhatsApp as a Social media application enhances online collaboration and cooperation between online students connected from school or home in a blended mobile lecture and has the following educational value (Chokri, 2015):

- i. "WhatsApp is a free application that is easy to use."
- ii. "Groups connected to WhatsApp instant massaging can share learning objects easily through comments, texting and messaging. Discussions are related to the course content taught 100% in-class."
- iii. "WhatsApp provides students with the ability to create a class publication and thereby publish their work in the group."
- iv. "Information and knowledge are easily constructed and shared through WhatsApp instant messaging."

v. Academic Achievement of Students

- vi. Tuckman in Chibuzor et al. (2017) defined academic achievement as a demonstration of a student's understanding, concepts, abilities, ideas and knowledge in the teaching and learning process. In their view, Johnson and George (2014) maintained that the term student academic achievement refers to the extent to which a student achieves set educational goals and meets expected educational performance targets such as understanding of subjects, examination scores, CGPA, and even student's participation in the teaching and learning process. The academic achievement is defined by Khan (2021) as the numerical scores of the student's knowledge, which represent the degree of adaptation of the student to the school and to the educational system. Irfan and Shabana (2012) used GPA to measure student academic achievement because they main focus in on the student performance for the particular semester. Some other researchers used test results or previous year result since they are studying achievement for the specific subject or year.
- vii. Novo and Calixto (2019) defined academic achievement as getting a school mark that allows a student to go on or to fail. They added that academic achievement is the achievement that students have at school through quantitative and qualitative evaluations. Educational attainment has been more frequently used in high school and first-degree environments and could not be measured only by the academic achievement obtained at various subjects and its marks, because it is a wider concept when compared with academic achievement. Educational attainment embraces academic and cognitive qualifications but also personal, interpersonal and institutional variables that are involved on the process of progressing through schooling levels (Tavares, 2016). In his own view, Lonsdale (2013) sees student academic achievement as a combination of evaluation scores and the extent to which students participate and show signs of having learnt reasonably from the teaching and learning process. Academic achievement is often linked with successful student's individual capacities and abilities.

E-learning Applications and Students' Academic Achievement

A study done by Keshavarz et al. (2013) revealed that e-learning has a positive impact on academic achievements of students in at the e-learning center in Khaje Nasir Toosi University. Mahmoodi et al. (2015) found that the use of e-learning in physiology teaching-learning process improves students learning and creativity. The implication of these findings is that the use of e-learning application like zoom makes learning very interesting for students in Secretarial Studies. Learning via zoom makes secretarial studies students to feel as digital citizens and this makes it possible for them to contribute meaningfully in the teaching and learning process. Thus, learning via zoom gives secretarial studies students the leverage of asking and answering questions in the teaching and learning process. Another study done by Zare et al. (2015), found that the use of online media such as zoom application enhances students' academic achievement. Although the students were not in the Department of Secretarial Studies, the finding of this study points to the fact that the zoom learning is capable of enhancing secretarial studies students' academic achievement. In a study conducted by Salavati (2016) revealed that the use of Google Classroom enhances students' academic achievement of students. Several studies (Mafa, 2018; Fahrurrozi and Hasanah, 2019) found out that Google classroom is fascinating in educating

and learning, students' taught indicated satisfaction towards the learning activities in Google classroom. As future office professionals, secretarial studies students get excited when they learn with Google classroom. It gives them the opportunity of sharing educational videos, still pictures, and other academic contents. This helps to increase their knowledge in all ramifications.

Furthermore, Geertsema (2014) conducted a study to determine the requirements for the development of learning that is exciting, active, autonomous and effective. The results of the study show that integrated learning design based on Google classroom is needed to improve student digital literacy. Office and information Management students in Ignatius Ajuru University of Education stand more chances of improving their digital knowledge which is very necessary in the world of today and the future. By getting used to the e-learning options and tools available on Google Classroom, secretarial studies students acquire a lot of functional skills and competencies as benefits of the academic process.

A study done by Chibuzor et al. (2017) revealed that educational Whatsapp enhances the academic performance of students. With its many features, Whatsapp is one of the few social media platforms that were innovatively used in Ignatius Ajuru University of Education as virtual learning platform. Through the collaboration of course representatives, lecturers in the Department of Office and information Management were able to create and use encrypted whatsapp group platforms through which academic contents were administered to students. One of the many benefits of whatsapp learning platform is that it gives secretarial studies students the opportunity of asking questions, responding to questions, accessing and replaying educational videos and other contents shared from the comfort of their homes.

The use of whatsapp as an e-learning platform in the Department of Office and information Management in IAUE was a function of the Covid-19 lockdown. When it became difficult for students and lecturers to meet physically, whatsapp was one of the first e-learning options that lecturers and students of IAUE leveraged on. In spite of its capacity to constitute distractions to learning, the use of Whatsapp as an e-learning platform has evidently enhanced the academic achievement of students (Chokri, 2015).

Theoretical Review

Diffusion of Innovation Theory - Roger's (1962)

This work was anchored on Roger's (1962) Diffusion of Innovation Theory. The Theory explains and predicts how innovation such as the use of emerging technologies in education filters into a system and the effects of such innovations on the overall functionality and performance of the system. The Diffusion of Innovation Theory is based on the following assumptions:

- i) Institutions and individuals will naturally differ in terms of the time and how they adopt new technologies and new practices.
- ii) The use of technology enhances systemic communication and those who embrace it early, outperform their counterparts who fail to embrace innovations early enough (Rogers in Oviat & McDougal, 2014).

This theory was justifiably adopted as the theoretical foundation of this study considering its relationship with the adoption of e-learning applications in many tertiary institutions in recent times. The theory predicts that the adoption of technological innovations like e-learning will enhance educational communication and improve the

performance of participants. Within the context of Ignatius Ajuru University of Education, Port Harcourt, the implication of this theory is that, the use of e-learning applications like Google Classroom, Whatsapp, and Zoom will enhance the academic achievement of students in general and those in secretarial studie in particular.

Research Design

The study adopted the explanatory cross sectional survey research design.

Research Population

The population of this study comprised of three hundred and sixty (360) students (level 100-400) in the Department of Office and Information Management, Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt.

Sample Size/Sampling Technique

A sample size of one hundred and eighty-nine (189) respondents was obtained using the Taro Yamene Formula.

Instrumentation

Primary data was obtained using a questionnaire designed by the researcher.

Administration of Instrument

A total of one hundred and sixty-two (189) copies of the questionnaire distributed, a total of one hundred and thirty (130) copies of the questionnaire were retrieved.

Method of Data Analysis

The primary data collected from the field was be analyzed using simple percentage for answering research questions while Pearson's product moment correlation (PPMC) was used for the test of hypotheses. The Pearson's product moment correlation formula is stated thus:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

\Where:

X = Questionnaire response from Ignatius Ajuru University of Education

Y= Questionnaire response from Rivers State University

n= Number of respondents

Σ= Summation

Decision Rule: If the calculated r value is greater than the critical r value, the null hypotheses will be rejected, if otherwise, it will be accepted.

Ho₁: There is no significant relationship between the use of Google Classroom and high quality work of Office and Information Management students in Ignatius Ajuru University of Education, Port Harcourt.

Correlation between Google Classroom and High Quality Work of OIM Students

S/N	X	Y	XY	X ²	Y ²
1	25	12	300	625	144
2	15	10	150	225	100
3	16	13	208	256	169
4	18	11	198	324	121
5	30	15	450	900	225
6	20	10	200	200	100
7	21	8	168	441	64
8	9	7	63	81	49
9	25	20	500	625	400
10	18	19	342	324	361
11	17	11	187	289	121
12	6	4	24	36	16
13	26	30	780	676	900
14	14	12	168	196	144
15	11	10	110	121	100
16	8	9	72	64	81
Σx=279		ΣY=201	ΣXY=3920	ΣX²=5383	ΣY²=3095

Source: Field Survey, 2024.

$$r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{[n\sum X^2 - (\sum X)^2][n\sum Y^2 - (\sum Y)^2]}} = \frac{16 \times 3920 - 279 \times 201}{\sqrt{[16 \times 5383 - 279^2](16 \times 3095 - 201^2)}}$$

$$r = \frac{62720 - 56079}{\sqrt{8287 \times 9119}} = \frac{6641}{8693.05} = 0.764$$

$\therefore r = 0.764$

Decision: Since the calculated r^2 value 0.764 is greater than the critical r^2 value 0.426 at 0.05 level of significance and n (16), the null hypothesis which stated that there is no significant relationship between the use of Google Classroom and high quality work of OIM students in Ignatius Ajuru University of Education, Port Harcourt was rejected and the alternate accepted. This implies that there is a significant positive relationship between the use of Google Classroom and high quality work of OIM students in Ignatius Ajuru University of Education, Port Harcourt.

H₀₁: There is no significant relationship between use of Whatsapp and proficiency in browsing by Office and Information Management students in Ignatius Ajuru University of Education, Port Harcourt.

Correlation between Whatsapp and Proficiency in Browsing of OIM Students

S/N	X	Y	XY	X ²	Y ²
1	28	13	364	784	169
2	21	11	231	441	121
3	22	7	154	484	49
4	12	6	72	144	36
5	29	22	638	841	484
6	25	18	450	625	324
7	9	24	216	81	576
8	12	19	228	144	361
9	10	18	180	100	324
10	8	20	160	64	400
11	40	21	840	1,600	441
12	11	15	165	121	225
13	6	4	24	36	16
14	13	10	130	169	100
15	18	19	342	324	361
16	25	28	700	625	784
	ΣX = 289	ΣY = 255	ΣXY = 4894	ΣX² = 6583	ΣY² = 4771

Source: Field Survey, 2024.

$$r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{[n\sum X^2 - (\sum X)^2][n\sum Y^2 - (\sum Y)^2]}} = \frac{16 \times 4894 - 289 \times 255}{\sqrt{(16 \times 6583 - 289^2)(16 \times 4771 - 255^2)}}$$

$$r = \frac{78304 - 73695}{\sqrt{21807 \times 11311}} = \frac{4609}{\sqrt{246658977}} = \frac{4609}{1.38}$$

$$\therefore r = 0.463$$

Decision: Since the calculated r^2 value 0.463 is less than the critical r^2 value 0.426 at 0.05 level of significance and n (16), the null hypothesis which stated that there is no significant relationship between use of Whatsapp and proficiency in browsing of OIM students in Ignatius Ajuru University of Education, Port Harcourt. This implies that there is a significant positive relationship between use of Whatsapp and proficiency in browsing of OIM students in Ignatius Ajuru University of Education, Port Harcourt.

Discussion of Findings

The analysis of research question one and the test of hypothesis one revealed that the use of Google Classroom increases high quality work of OIM students in Ignatius Ajuru University of Education, Port Harcourt. This finding collaborates with the findings of Salavati (2016) that the use of Google Classroom enhances students' academic achievement of students. Several studies (Mafa, 2018; Fahrurrozi and Hasanah, 2019) found out that Google classroom is fascinating in educating and learning, students' taught indicated satisfaction towards the learning activities in Google classroom. As future office professionals, Office and Information Management (OIM) students get excited when they

learn with Google classroom. It gives them the opportunity of sharing educational videos, still pictures, and other academic contents. This helps to increase their knowledge in all ramifications. Furthermore, Geertsema (2014) conducted a study to determine the requirements for the development of learning that is exciting, active, autonomous and effective. The results of the study show that integrated learning design based on Google classroom is needed to improve student digital literacy. OIM students in Ignatius Ajuru University of Education stand more chances of improving their digital knowledge which is very necessary in the world of today and the future. By getting used to the e-learning options and tools available on Google Classroom, OIM students acquire a lot of functional skills and competencies as benefits of the academic process.

Lastly, the analysis of research question two and test of hypothesis two revealed that the use of Whatsapp significantly improves proficiency in browsing of OIM students in Ignatius Ajuru University of Education, Port Harcourt. This is in consonance with Chibuzor et al. (2017) that educational Whatsapp enhances the academic performance of students. With its many features, Whatsapp is one of the few social media platforms that were innovatively used in Ignatius Ajuru University of Education as virtual learning platform. Through the collaboration of course representatives, lecturers in the Department of Office and Information Management were able to create and use encrypted whatsapp group platforms through which academic contents were administered to students. One of the many benefits of whatsapp learning platform is that it gives OIM students the opportunity of asking questions, responding to questions, accessing and replaying educational videos and other contents shared from the comfort of their homes.

The use of whatsapp as an e-learning platform in the Department of Office and Information Management in IAUE was a function of the Covid-19 lockdown. When it became difficult for students and lecturers to meet physically, whatsapp was one of the first e-learning options that lecturers and students of IAUE leveraged on. In spite of its capacity to constitute distractions to learning, the use of Whatsapp as an e-learning platform has evidently enhanced the academic achievement of students (Chokri, 2015).

Conclusions

Based on the analysis of data and discussion of findings, the study concluded that e-learning applications are instrumental to academic achievement of OIM students in Ignatius Ajuru University of Education, Port Harcourt. The study also concluded that easy-to-use e-learning applications such as Google Classroom, and Whatsapp enhances the academic achievement of OIM students in Ignatius Ajuru University of Education, Port Harcourt. Generally, the study concluded that e-learning applications enhances the academic achievement of students in the Department of Office and Information Management, Ignatius Ajuru University of Education, Port Harcourt.

Recommendations

Based on the findings and conclusions, the following recommendations were made:

1. Management should provide data subscription for lecturers to enable them make regular use of Zoom delivering curriculum contents of Office and Information Management (OIM). This will encourage OIM students to participate actively in the teaching and learning process irrespective of their location.

2. Hands-on computer training should be provided for both lecturers and students in the Department of Office and Information Management in order to adequately equip them with the digital skills and mindset needed in making regular use of Google Classroom which will enhance the digital knowledge of the students.
3. Lecturers and students in the Department of Office and Information Management in Ignatius Ajuru University of Education, Port Harcourt should continue creating and using Whatsapp academic group chats for teaching and learning. OIM students should also establish Whatsapp reading room where they share academic contents.

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