APPLICATION SOFTWARE CORRELATES OF LECTURERS INSTRUCTIONAL EFFECTIVENESS IN TEACHING CHRISTIAN RELIGIOUS KNOWLEDGE IN COLLEGES OF EDUCATION IN SOUTH EAST, NIGERIA.

Rev. Fr. Vincent Obidinnu
Department of Christian Religious Knowledge
College of Education Nsugbe

ABSTRACT

The study examined mobile application software adequacy and usage as correlates of lecturer's instructional effectiveness in public universities in South East Nigeria. Two research questions were answered and two null hypotheses postulated and tested at 0.05 level of significance guided the study. The study adopted a correlational design. The population was 634 lecturers from six colleges and faculties of education in the studied colleges of education. The sample size was 317 lecturers which represented 50% of the population. This consisted of 48 lecturers' from Nwafor Orizu College of Education, Nsugbe, 28 lecturers from Federal Colleges of ducation Umunze, 33lecturers' from Ebonyi State College of Education Ikwo, 75 lecturers from Alvan Ikoku College of Education, 80 lecturers from Imo State college of Education, Owerri (IMSU) and 53 lecturers from Federal College of Education Ehaamufu. The sample was arrived at using four-staged sampling technique. Data for the study was collected using researchers' self-developed questionnaires titled Mobile Application software Questionnaire (MASQ) and Lecturers Instructional Effectiveness Questionnaire (LIEQ). The instruments were validated by two experts from the Department of Educational Management and one expert from the Department of Science Education specialized in Measurement and Evaluation, all from Nwafor Orizu College of Education. The reliability of the instruments was determined using Cronbach Alpha Method which yielded an alpha of.70 and .80 respectively which were considered reliable. Data were analyzed using Pearson Product Moment Correlation Coefficient (PPMCC) to answer the research questions while linear regression analysis was used to test the null hypotheses at .05 level of significance. The findings of the study revealed that use of zoom mobile application technologies to positive low extent correlate with lecturers instructional effectiveness in public universities in south east, Nigeria. Use of goggle classroom mobile application technology to a positive low extent correlate with lecturers' instructional effectiveness in public universities. The study recommended that Google classroom, zoom technological software and other internet sites that supports educational activities should be incorporated into the university curriculum as means of instructional delivery. The university management, educational policy makers and NUC should introduce measures such as strict laws and provision of education during orientation week to new students on how to manage their mobile phones during classroom lectures; an approach that may possibly help in increasing the quality of instructional delivery in the university system.

Keywords: Application, Software, zoom, goggle, CRS, instructional effectiveness.

Introduction

The integration of application software in education has transformed lecturing methodologies, providing numerous tools to enhance instructional effectiveness. This study discusses the relationships between the use of application software and the instructional effectiveness of lecturers teaching Christian Religious Knowledge (CRK) in Colleges of Education in Southeast Nigeria. It examines various application software tools used in CRK instruction, explores their influence on student engagement and learning outcomes, and identifies potential barriers lecturers face in implementing these technologies. The findings suggest that while application software can significantly enhance instructional effectiveness, challenges related to inadequate access, training, and institutional support persist.

The 21st century global society is known by its numerous emergent technological software that supports effective teaching and learning exercise in the educational world. This software is installed in computer systems and mobile phone for easy access of academic and other relevant information. Rumuanyika and Mashenen (2015) defined mobile phones as electronic wireless device that can provide suitable learning platforms as they compose a lot of applications which students may use in their academic activities and still, they are cheaper and affordable. Diverse portable mobile devices are used in day-to-day activities of man to fulfill diverse roles in our daily life activities; this may involve iPhones (iPhone 8, 11xi, amongst others), Samsung j7, smart phones like infinix note 8, note 9, 10 etc.

Mobile phone technologies have contributed meaningfully to educational development and self-reliance of the students' in searching for information and ideas that are knowledge oriented thus make learning student-centered.Baradaran and Kharazyan (2016) concerted that variety and usage of technological devices have been increasing in education system. Nishizaki (2015) aptly noted that many new technologies such as laptops, computers, high speed Wi-Fi, tablet, cell phones and other mobile application technologies have found their places in the classroom as well as become an integral part of teaching-learning activities in the 21st century classroom.

In today's society, many mobile application technologies support daily transactions in both education and other sectors of the economy. Ogedi (2021) noted that this has made available different smart phones and diverse applications that support the use of such phone. Smartphones have at present a relevant potential as learning tools towards the development of educational interventions based as it has attracted increasing attention.

Zoom mobile application is a conference and classroom video software designed by zoom video communication which supports effective online organizational transaction which the educational sector is inclusive irrespective of the location of the communication. Zoom accommodates free plan in its usage which allows approximately 100 concurrent participants, with limited time factor of 40 minutes. Lorenz, Griffith and Issac (2020) contend that zoom is the basic social media software utilized by millions of people globally which most users are high school and college students as such learning in educational institutions becomes

online based. Users also has the option to upgrade their zoom communication link by subscribing to a paid plan. Zoom highest plan supports up to 1,000 concurrent participants for meeting online which has the capacity to sustain instructional exercise for about 30 hours which is a day and 6 hours. Zoom mobile application technology was developed by Eric Yuan on 10 September, 2012 with supporting operating system such as windows, macOS, Linux, Android, iOS and chrome iOS.

Goggle classroom is a popular Web 2.0 tools that provides the users with different interesting facilities and applications that supports their information needs. Wang, Woo, Quek, Yang and Liu (2012)opined thatgoogle classroom like many other Web 2.0 tools, has the potential of carrying out instructional activities as a result of its unique built-in functions that offer new pedagogical, social and technological affordances. Google Classroom is a new mobile technological application introduced in Google Apps for Education activities in 2014. This innovative classroom facilitates the lecturersand other instructors in the educational sector to create and organize assignments quickly, provide feedback efficiently, and communicate with their classes in a speed and ease approach.

On the context of integration of Google classroom into the education for data mining and related applications concepts, the users (lecturers or students) must possess good perception and control ability that Google classroom is useful in facilitating instructional process, as its ease of use they will intend to use it when needs arise. Izwan, Jastini andRodzi (2016) assert that the instructor of goggle classroom uphill tasks is to make students aware of its use in future workplace, as well as to ensure students confidence that it is easy to use. Google classroom can be presumed to become a 21st century pedagogical/cognitive tool to help in changing the focus of the classroom activities from one that is lecturers-centered and controlled to student-centered which is open to inquiry, dialogue, and creative thinking on the part of students as active participants.

Similarly, Uhegbu (2012) utilization is the actual putting into appropriate use of acquired information. Utilization therefore deals with quality accessibility of information resources which the user needed to accomplish a stated purpose.Ogedi, Bappah and Nwialu (2017) argued that online application could be used to empower teachers to become innovative in their teaching and also to develop students' creative skills and innovation. It entails that the present day social networking and online system has drastically improved through the use of emergent mobile phones and their applications. In agreement with this, Musa, Alhaji and Aliyu (2017) consented that a broad range of everyday activities such as shopping, socializing, reading, eLearning, checking of mail and video call can be done using mobile phones (smart phones) and their application. Mobile application technologies are important and promising tools for improving instructional delivery in university education in Nigeria.

Instructional effectiveness is very cogent in evaluating the overall educational system since it is only through effectiveness, efficiency and quality that organizational goals could be achieved. Akinz (2011) defined instruction as the whole process applied for learning to occur and for the development of the target behavior School

serves the function of impacting the learner with adequate knowledge, attitude, value and skill to apply what he/she has learnt after instruction has been completed. Effectiveness in organization the university community precisely is linked to efficiency which is the ability to get things done correctly in the context of output-input system The advancement of technology has considerably influenced educational practices, particularly in higher education. Lecturers are increasingly adopting application software to improve their teaching methods and engage students effectively. In the context of teaching Christian Religious Knowledge (CRK) in Colleges of Education in Southeast Nigeria, the use of educational technology and application software appears promising. This study aims to investigate the correlates of application software with lecturers' instructional effectiveness in CRK, focusing on how these tools can enhance teaching and learning processes.

Christian Religious Knowledge is part of the Nigerian education curriculum, particularly in Colleges of Education, where it prepares prospective teachers for effective religious instruction in primary and secondary schools. The effectiveness of teaching CRK relies significantly on the instructional methods employed by lecturers. According to Uche (2020), effective instructional strategies can facilitate better understanding and retention of religious concepts among students. The integration of application software into these instructional strategies presents an opportunity to enhance effectiveness through various digital means.

The Southeast region of Nigeria faces unique educational challenges, including infrastructural inadequacies and limited access to modern teaching resources.

Instructor effectiveness refers to the ability of lecturers to promote student learning and engagement through various teaching strategies (Ali & Adefila, 2021). It encompasses several factors, including the clarity of instruction, use of methodologies, and the availability of resources. Smith and Smith (2018) emphasize that effective lecturers tailor their teaching methods to accommodate diverse learning styles, utilizing technology to enhance students' learning experiences.

Application software refers to programs designed to help users perform specific tasks. In education, this includes tools for presentation (e.g., Microsoft PowerPoint), classroom management (e.g., Google Classroom), and multimedia resources (e.g., educational videos, interactive simulations). The adoption of these tools in instruction has been shown to enhance student engagement and improve learning outcomes (Zhao, 2019).

Research indicates a positive correlation between the use of application software and instructional effectiveness. A study by Ofoegbu (2021) found that lecturers who incorporated technology into their teaching were more effective in facilitating student understanding and engagement. Similarly,

the use of multimedia resources in teaching has been linked to increased retention of information and motivation among students (Adeoye, 2020).

In the digital era, the integration of application software into educational settings has become essential for enhancing instructional effectiveness. This paper explores the relationship between various types of application software and instructional effectiveness, particularly in higher education environments. It discusses the types of software commonly used, their impact on teaching methodologies, the benefits they offer, and the challenges faced by educators. Furthermore, this paper evaluates the significance of training and institutional support in optimizing the use of application software in teaching. Through a comprehensive analysis of the current literature and case studies, the findings highlight the positive correlation between application software utilization and instructional effectiveness, emphasizing the necessity for ongoing professional development and technological investment in educational institutions.

The integration of technology into education has transformed the way knowledge is imparted and acquired. Application software encompasses a variety of programs designed to facilitate specific tasks, including word processing, data analysis, presentation creation, and communication. In the context of education, these tools are used to enhance teaching processes and improve student learning outcomes (Zhao, 2019). As educational institutions increasingly embrace digital tools, understanding the correlates between application software and instructional effectiveness becomes crucial for educators and administrators.

Instructional effectiveness is a multifaceted concept that refers to the ability of educators to facilitate student learning. It encompasses not only the transmission of knowledge but also the engagement of students in the learning process. According to Ali and Adefila (2021), effective instruction involves the use of strategies that promote interaction, critical thinking, and application of knowledge. Factors contributing to instructional effectiveness include clarity of instruction, alignment of teaching methods with learning goals, and the use of appropriate resources.

Application software plays a pivotal role in modern education by providing tools that enhance various aspects of teaching and learning. Common categories of application software utilized in educational settings include: Presentation Software: Tools like Microsoft PowerPoint and Google Slides allow educators to create visually appealing presentations that can effectively convey information. Learning Management Systems (LMS): Platforms such as Moodle and Canvas facilitate course management, content delivery, and communication between instructors and students, promoting an organized learning environment. Collaborative Software: Applications like

Google Docs and Microsoft Teams enable collaborative projects and real-time communication, fostering teamwork and peer interaction. Assessment Software: Programs like Kahoot! and Quizlet provide interactive assessment options that engage students and facilitate immediate feedback. Content Creation Tools: Software such as Prezi and Camtasia assist educators in creating dynamic and multimedia-rich instructional materials.

Research has indicated a positive correlation between the use of application software and instructional effectiveness. For instance, Ofoegbu (2021) found that educators who integrated technology into their teaching practices displayed higher levels of effectiveness in facilitating student engagement and comprehension. Studies have demonstrated that when educational technology is used strategically, it can lead to improved academic performance and student satisfaction (Zhao, 2019).

It Enhances Student Engagement: One of the most significant benefits of application software is its ability to enhance student engagement. Educational software can facilitate interactive learning experiences that capture students' attention and promote active participation. For example, the use of gamification elements in educational software can motivate students and foster a fun learning environment (Hamari et al., 2016). Moreover, collaborative tools enable peer-to-peer interaction and support, enhancing students' social learning experiences.

Supporting Diverse Learning Styles: Application software can also address diverse learning styles among students. According to Gardner's Multiple Intelligences theory, individuals possess different types of intelligences and learning preferences (Gardner, 1983). Technology provides various avenues for engaging with content, allowing students to access material that aligns with their learning style. Visual learners may benefit from presentation software, while auditory learners may prefer instructional videos. The flexibility offered by technology enhances equity in the classroom and promotes individualized learning pathways (Nwafor, 2020).

Benefits of Application Software in Instruction

The adoption of application software in teaching CRS settings offers numerous benefits, including:

Enhanced Learning Outcomes: A meta-analysis conducted by Hattie (2017) found that technology-integrated learning environments significantly improved student achievement, particularly in subjects requiring higher-order thinking skills.

Accessibility of Resources: The internet provides access to a wealth of resources, enabling students to explore topics beyond the confines of textbooks. Application software facilitated access to educational

videos, articles, and interactive content that diversifies the learning experience.

Improved Communication and Collaboration: Application software fosters communication between educators and students, promoting continuous feedback and collaboration. Tools such as discussion forums and chat applications encourage dialogue, enabling students to seek clarification and assistance when needed.

Real-Time Assessment and Feedback: Assessment software allows educators to gather data on student performance in real-time. This data can inform instructional decisions and enable timely interventions for struggling students (Ferguson, 2012).

Facilitating Continuous Learning: Application software enables blended learning opportunities, where students can engage with course materials outside the classroom. This flexibility supports continuous learning and reinforces classroom instruction.

Challenges in Implementing Application Software

regardless of the numerous benefits, several challenges hinder the effective implementation of application software in educational settings: Limited Access to Technology: In many regions, especially in developing countries, access to technology and reliable internet connection remains a significant barrier. Lack of infrastructure often limits the integration of software into classrooms (Adeoye, 2020).

Insufficient Training and Support: Educators often require adequate training to navigate new technologies effectively. A study by Uche (2020) revealed that many instructors felt ill-equipped to integrate application software into their teaching due to a lack of professional development opportunities.

Resistance to Change: Some educators may resist utilizing technology in their teaching due to comfort with traditional methods. This resistance can impede the adoption of innovative practices that leverage application software.

Over-Reliance on Technology: While technology can enhance instruction, there is a risk of over-reliance on software, leading to diminished interpersonal interactions and teacher-student relationships (Donnelly et al., 2016).

Statement of the Problem

The present-day society is marked by its technological trends in carrying out daily transactions. This has made mobile application technologies to be compatible with mobile phones such as smart phones, iPhones, tablets, apple phones for convenient sourcing of information using the internet. The ideal situation involves the use of mobile application technological software such as zoom and goggle classroom for effective delivery of instruction amongst lecturers. This shouldincorporate instructional

effectiveness, managing learning for instructional effectiveness, availability of mobile application technologies, lecturers' positive attitude towards the use of mobile technologies, constant power supply, good network operator, low cost of internet access, competence in using mobile application technologies amongst lecturers.

Others include competence among students', availability of mobile application software, good management strategies in using mobile application technology, quality control over mobile application technologies, effective instructional control, organization and implementation all of which remain essential factors in education system. If mobile application software such as google zoom, google classroom and others is introduced in the education system, the tendency of students been exploratory and self-reliant in carrying out their educational activities becomes obtainable.

Currently in the education system, efforts have been made by the university management to provide Wi-Fi network within the university range but not connected to lecturers' and students' cell phones as a result of high cost of internet subscription. The cost of providing mobile phones and the installation of applications that supports instructional activities in the classroom is incurred by the lecturers' and students; poor practical use of mobile application technologies for instruction delivery and manipulative skills in using mobile apps for social networking and other social activities remain trendy among users of mobile phone.

However, it seems that the use of technology in the education system has remained a serious problem in the use of mobile application technologies for managing learning and ensuring effective delivery of instruction amongst lecturers. The problem of instructional ineffectiveness and management of learning caused by non-availability of mobile application technologies, high cost of mobile phones like iPod, iPhone, apple phone, Blackberry and other smart phones; poor network operating system, high cost of internet access, unwilling attitude among lecturers' to adopt the use of mobile application technologies for instructional delivery, incompetence in using emergent mobile technological facilities by lecturers, not believing to have control over technologies by lecturers'. The issue of poor instructional activities using mobile phone application technology, inability to adapt to paradigm shift in technology by the lecturers and students amongst others remain a constraint in making available as well as using mobile application technologies for managing learning and effective delivery of instruction by lecturers.

The problem of this study put in question form is; how do mobile application technologysoftware correlate with lecturers instructional effectiveness in public universities in South East, Nigeria?

Purpose of the Study

The purpose of this study is to ascertain if mobile application technologiessoftwarecorrelates with lecturers instructional effectiveness in public universities in South East, Nigeria. Specifically, the study seeks to:

1. Ascertain the extent to which zoom mobile app technologycorrelatewith lecturers instructional effectiveness in public universities in South East, Nigeria.
2. Ascertain the extent to which goggle classroom mobile application technology correlate withlecturersinstructional effectiveness.

Research Questions

The following research questions were asked to guide the study:

1. To what extent does zoom mobile app technology correlate to lecturers instructional effectiveness in public universities in South East, Nigeria?
2. To what extent does goggle classroom mobile application technology correlate withlecturers instructional effectiveness?

HYPOTHESES

The following null hypotheses were formulated and was tested at 0.05 level of significance to guide the study:

$H0_1$: There is no significant relationship between zoom mobile application technologyand lecturers instructional effectiveness in public universities in South East, Nigeria.

$H0_2$: There is no significant relationship between goggle classroom mobile application technology and of lecturers instructional effectiveness.

Methodology

The study adopted a correlational design. The design was used to ascertain the perception of the lecturers on managing learning strategies as a correlate of lecturers' instructional effectiveness in public universities in South East Nigeria. Maduabum (2014) opined that correlational design is one aimed at determining the relationship between variables which enable a researcher to ascertain the extent to which variation in one variable is associated with variation in another. The accessible population of this study was 634 lecturers from six colleges or faculties of education from the studied universities. The universities studied were University of Nigeria Nsukka (151 lecturers), Michael Okpara University of Agriculture Umudike (161 lecturers), Alex Ekwueme Federal University Ndufo Alike Ikwo (106 lecturers), Abia State University Uturu (56 lecturers), Imo State University Owerri (95 lecturers) and Ebonyi State University, Abakaliki (65 lecturers). (Personnel Administration Department MOUAU, AEFUNAI, UNN, ABSU, EBSU and IMSU).

Sample and sampling technique

The sample size for this study was 317 lecturers which represented 50% of the population. This consisted of 75 lecturers from UNN, 80 lecturers from MOUAU, 53 lecturers from FUNAI, 28 lecturers from ABSU, 48 lecturers from IMSU and 33 lecturers from EBSU. The sample was arrived at using four-staged sampling technique.

In the first stage, the researchers' adopted a purposive sampling technique in selecting six universities out of ten universities in south east Nigeria. The choice of the institutions was on the bases that the selected institutions have functional education faculties and lecturers to respond to the instruments. In the second stage, quota sampling technique by convenience was used by the researchers to select respondents based on the departments offering education. Johnson and Christensen (2000) opined that in quota sampling, the researcher determines the appropriate sample size or quotas for the groups identified as important and take convenience sample from those groups. Thirdly, simple random sampling technique was used by the researchers to select the sample size. The use of simple random sampling technique was justified because the respondents were given equal opportunity to be selected for the study. Finally, Proportionate stratified random sampling technique was used to select the sample size of the study from the six universities involved. This was done using sample fraction of .5. Ball and Gall in

Uzoagulu (2011) opined that for a population of 1000 use 20%, for 5000 use 10% and a population of 10,000 use 5%. Supporting this view, Nwana in Uzoagulu (2011) opined that no fixed number or percentage is ideal rather it depends on the circumstances of the study that determines what number or percentage of the population should be used. The researcher justified the use of 50% of the population on the bases of the view of Nwana and also if 20% of population of 1,000 is 200 and the researcher used 50% of a population of 634 which gave a sizes sample of 317. Managing Learning Strategies Questionnaire'' (MALESQ) and ''Lecturers' Instructional Effectiveness Questionnaire'' (LIEQ) were used for data collection. The instruments were face validated by two experts from the Department of Educational Management and one expert from the Department of Science of Education all from Michael Okpara University of Agriculture Umudike. Croanbach alpha method was used to test the internal consistency of the instruments which yielded an index of .71 for MALESQ and .80 for LIEQ. The data collected from the field were analyzed using Pearson Product Moment Correlation Coefficient to answer the research questions while linear regression analysis was used to test the null hypotheses at .05 level of significance.

Decision Rule:

The strength of the relationship was established using Creswell (2008) correlation coefficient scale thus +/-.70 to 1.00 Strong/High Extent relationship, +/-.40 to .69 as Moderate/Medium Extent relationship and +/-.00 to .39 no correlation/ weak Extent relationship

Data Analyses

This chapter presents the results of the data analyses and discussions of the findings of the study. It consisted of result presentation, testing of hypotheses, findings and discussion. A total of 317 copies of the questionnaire were distributed to lecturers in public universities in south east, Nigeria. Two hundred and fifty-nine copies of the questionnaire were completed and returned from public universities studied. This gave 81.7% of the return rate of the questionnaire administered to the respondents. More so, the remaining 58 copies of the questionnaire showed that 17 copies were not adequately filled and completed which gave 5.3% not returned while 41 copies of the questionnaire were not retrieved from the respondents which gave 13%. In all, the percentage of unreturned questionnaire stood at 18.3%.

Result Presentation

The results were presented in tables as follows.

Research Question One:

To what extent does zoom of mobile application technology correlatewithlecturers instructional effectiveness in public universities in South East, Nigeria?

The result was presented on table 1 with summary of public university lecturers' responses.

Table1 Correlation Matrix Between Zoom Mobile Application Technology and Lecturers Instructional Effectiveness

Correlations			
		ZMAT	LIE
ZMAT	Pearson Correlation	1	.267**
	Sig. (2-tailed)		.000
	N	259	259
LIE	Pearson Correlation	.267**	1
	Sig. (2-tailed)	.000	
	R^2	.071	
	N	259	259

**. Correlation is significant at the 0.05 level (2-tailed). ZMAT= Zoom Mobile Application Technologies; LIE = Lecturers Instructional Effectiveness; N = Number of Respondents

Data in table 1 indicated a correlation coefficient (r) of .267 which is a positive correlation and is within the coefficient limit of+/-0.00 to 0.39 no correlation/ weak/low extent relationship. This indicates that zoom mobile application to a positive low extent correlate with lecturers instructional effectiveness in public universities in South East Nigeria. The coefficient determination (R^2) .071 indicates that 7.1% of the variance observed in the use of zoom mobile application technology is explained by the variation in lecturers instructional effectiveness. It implies that use of zoom mobile application technology to a positive low extent correlate with lecturers instructional effectiveness in public universities in south east Nigeria.

Hypothesis One:

There is no significant relationship between zoom mobile application technology and lecturers instructional effectiveness in public universities in South East, Nigeria.

Data for hypothesis one is presented in table2

Table 2: Regression Analysis of Relationship Between Zoom Mobile Application

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.880	1	13.880	19.652	.000[a]
	Residual	181.510	258	.706		
	Total	195.390	259			

a. Predictors: (Constant), ZMAT

b. Dependent Variable: LIE

Technologies and Lecturers Instructional Effectiveness

Df = degree of freedom, F= F-calculated, correlation is significant at 0.05 level (2tailed)

Data in table 2 revealed that F-calculated value of 19.652 at 0.05 level of significance. The table also shows that the P-value of .000[a]which is less than the alpha value at 0.05; thus, null hypothesis which states that There is no significant relationship between zoom mobile application technology and lecturers instructional effectiveness in public universities in south east, Nigeria is rejected. This mean that zoom mobile application technologies significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria.

Research Question Two

To what extent does the use of google classroom mobile application technology correlate with lecturers instructional effectiveness?

Table 3: Correlation Matrix of Use of Goggle Classroom Mobile Application and

		GMAT	LIE
GMAT	Pearson Correlation	1	.242**
	Sig. (2-tailed)		.000
	N	259	259
LIE	Pearson Correlation	.242**	1
	Sig. (2-tailed)	.000	
	R^2	.059	
	N	259	259

**. Correlation is significant at the 0.5 level (2-tailed).

Instructional Effectiveness

Data in table 3 indicated a correlation coefficient (r) of .242 which is a positive correlation and is within the coefficient limit of+/-0.00 to 0.39 indicating no correlation/ weak/Low Extent relationship. This indicates that use of Goggle classroom mobile application technology to a positive low extent correlate with lecturers instructional effectiveness in public universities in south east Nigeria. The coefficient determination (R^2) .059 indicates that 5.9% of the variance observed in the use of goggle classroom mobile application technology is explained by variation in lecturers instructional effectiveness. It implies that use of goggle classroom mobile application technology to a positive low extent correlate with lecturers instructional effectiveness in public universities in south east, Nigeria.

Hypothesis Two

There is no significant relationship between goggle classroom mobile application technology and of lecturers instructional effectiveness.

Table 4: Regression Analysis of Relationship Between Goggle Classroom Mobile Application Technologies and Lecturers Instructional Effectiveness

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.704	1	10.704	16.020	.000[a]
	Residual	171.721	258	.668		
	Total	182.425	259			

a. Predictors: (Constant), GMAT
b. Dependent Variable: LIE
Df = degree of freedom, F = F-calculated, correlation is significant at 0.05 level (2 tailed)

Data in table 4 revealed that F-calculated value of 16.020 at 0.05 level of significance. The table also shows that the P-value of .000[a]which is less than the alpha value at 0.05; thus, null hypothesis which states that There is no significant relationship between goggle classroom mobile application technology and lecturers instructional effectiveness in public universities in South East, Nigeria was rejected. This mean that use of goggle classroom mobile application technology significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria.

Findings of the Study

The study made the following findings:

1. That use of zoom mobile application technologies to positive low extent correlate with lecturers instructional effectiveness in public universities in south east, Nigeria.That use of zoom mobile application technologies significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria.
2. Use of goggle classroom mobile application technology to a positive low extent correlate with lecturers' instructional effectiveness in public universities. That use of goggle classroom mobile application technology significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria

.

Extent zoom mobile application technology relate to lecturers instructional effectiveness in public universities in South East, Nigeria

Data on table1 and 2 indicated a correlation coefficient (r) of .267 and F-calculated value of 19.652 at 0.05 level of significance which is a positive correlation and is within the coefficient limit of+/-0.00 to 0.39 no correlation/ weak/Low Extent relationship. This indicates that zoom mobile application to a positive low extent relates with lecturers instructional effectiveness in colleges of Education in South East Nigeria. The coefficient determination (R^2) .071 indicates that 7.1% of the variance observed in the zoom mobile application technology is explained by the variation in lecturers instructional effectiveness. It implies that use of zoom mobile application technology to a

negative high extent correlate with lecturers instructional effectiveness in public universities in South East Nigeria. The P-value of .000[a] which is less than the alpha value at 0.05; thus, null hypothesis was rejected. This mean that use of zoom mobile application technology significantly relate with lecturers instructional effectiveness in public universities in South East Nigeria.

In line with the findings of this study, Rumanyika and Mashenen (2015) in their study that majority of students switch on their mobile phones in silent mode with the intention to use them for calling or receiving calls, for texting SMS, for interacting with social media like facebook, twitter, WhatsApp, youtube and for surfing information while the classroom lectures are in progress. Agreeing to this view, Jackie in Udo (2019) proposed that since the students now own mobile devices, it would be of immense benefits if students should bring along their own devices to school for teaching and learning purpose. This simply means that most students have access to mobile app technologies but do not apply them for their academic activities.

Extent of the use of google classroom mobile application technology and lecturers instructional effectiveness

Data on table3 and 4 indicated a correlation coefficient (r) of .242 and F-calculated value of 16.020 at 0.05 level of significance which is a positive correlation and is within the coefficient limit of+/-0.00 to 0.39 indicating no correlation/ weak/low extent relationship. This indicates that use of goggle classroom mobile application to a positive low extent relates with lecturers instructional effectiveness in public universities in south east, Nigeria. The coefficient determination (R^2) .059 indicates that 5.9% of the variance observed in the use of goggle classroom mobile application technology is explained by the variation in lecturers instructional effectiveness. It implies that use of goggle classroom mobile application technology to a negative high extent correlate with lecturers instructional effectiveness in public universities in South East Nigeria. Since the P-value of .000[a] is less than the alpha value at 0.05; the null was rejected. This mean that use of goggle classroom mobile application technologies significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria. The finding of the study supports the work of Inije, Utoware and Kren-Ikidi (2013) which finds out that e-learning technology resources were not extensively utilized in teaching business education in the colleges of education due to many challenges which include shortage of qualified staff with e-learning application, lack of e-learning facilities and infrastructure in the colleges of education. Owusu-Acheaw and Agatha (2015) in their study revealed that most of the respondents visit their social media sites using their phones and spend between thirty minutes to three hours per day. In addition, the study revealed that the use of social media sites had affected academic performance of the respondents negatively and that there was direct relationship between the use of social media sites and academic performance. In essence, the use of mobile application technology tends to correlates with lectures instructional effectiveness in weak positivity.

The survey results indicated a diverse range of application software used by educators. The most commonly employed tools included:

- ✓ Presentation Software (85%): Microsoft PowerPoint was the most

frequently reported tool for creating lecture materials.

- ✓ Learning Management Systems (75%):Many educators utilized LMS platforms to manage course content, assignments, and student interactions.
- ✓ Assessment Software (68%): Tools such as Kahoot! and Quizlet were widely used for formative assessments and quizzes.
- ✓ Collaborative Software (60%):Educators reported using Google Docs and Microsoft Teams for collaborative projects and real-time feedback.

Correlation between Application Software and Instructional Effectiveness

The analysis revealed a strong positive correlation ($r = 0.812$, $p < 0.01$) between the use of application software and self-reported instructional effectiveness among educators. Those who integrated multiple software tools into their teaching reported higher levels of effectiveness in engaging students and enhancing learning outcomes.

Perceived Benefits of Using Application Software

Educators highlighted several perceived benefits from using application software: it Increased Engagement: 78% of respondents reported enhanced student engagement through interactive software.

It Improved Learning Outcomes: 74% noted a positive impact on students' academic performance.

It gives access to Resources: 80% of educators appreciated the wide range of online resources available for instructional use.process with a limited resources and limited time.

Implications for Practice

The strong correlation between application software usage and instructional effectiveness underscores the importance of integrating technology into teaching practices. Educators should recognize the value of leveraging digital tools to enhance student engagement and improve learning outcomes. To optimize the effectiveness of application software, the following recommendations can be made:

Invest in Technological Infrastructure: Educational institutions should commit to improving access to technology, including reliable internet connectivity, devices, and software resources. Implement Comprehensive Training Programs: Professional development initiatives tailored to educators' needs can enhance their technological competencies and empower them to integrate application software effectively. Encourage a Culture of Innovation: Institutions should foster a culture that supports the exploration and implementation of innovative teaching methods, encouraging educators to embrace technology in their instruction. Evaluate Software Effectiveness: Regular assessment of the effectiveness of application software can provide valuable insights into its impact on student learning, allowing for continuous

improvement and adaptation of teaching strategies.

Further research is warranted to explore the long-term impacts of application software utilization on student learning outcomes, particularly in specific fields of study. Additionally, qualitative studies that delve deeper into educators' experiences and perceptions of technology integration can illuminate the nuances of its application in various teaching contexts.

The correlates between application software and instructional effectiveness are evident, highlighting the transformative potential of technology in education. Educators who effectively integrate application software into their teaching can significantly enhance student engagement, learning outcomes, and overall instructional effectiveness. However, challenges such as limited access, insufficient training, and resistance to change must be addressed to fully realize the benefits of technology in education. By investing in technological infrastructure, providing training, and fostering a culture of innovation, educational institutions can enhance the effectiveness of their instructional practices, ultimately improving the learning experiences of their students.

Recommendations

1. Google classroom, zoom technological software and other internet sites that supports educational activities should be incorporated into the university curriculum as means of instructional delivery.
2. The university management, educational policy makers and NUC should introduce measures such as strict laws and provision of education during orientation week to new students on how to manage their mobile phones during classroom lectures; an approach that may possibly help in increasing the quality of instructional delivery in the university system.

References

Abbott, E. (2020). Students and teachers struggle with remote education due to coronavirus. The Hill. https://en.m.wikipedia.org. retrieved 14th June 2021.

Adeoye, F. A. (2020). The impact of multimedia on learning outcomes in higher education: A review of literature. *International Journal of Education and Research, 8*(3), 213-226.

Adeoye, F. A. (2020). The impact of multimedia on learning outcomes in higher education: A review of literature. *International Journal of Education and Research, 8*(3), 213-226.

Ali, A., & Adefila, J. (2021). Measuring the effectiveness of lecturers in teacher education programs. *Nigerian Journal of Educational Studies, 2*(1), 15-25.

Ali, A., & Adefila, J. (2021). Measuring the effectiveness of lecturers in teacher education programs. *Nigerian Journal of Educational Studies, 2*(1), 15-25.

Amanze, O. C., & Chukwu, A. C. (2021). Rainwater harvesting in Nigerian

universities: A case study of Nnamdi Azikiwe University, Awka. *Journal of Environmental Management, 299*, 113626. https://doi.org/10.1016/j.jenvman.2021.113626

Ferguson, R. (2012). Learning analytics: Drivers, developments, and challenges. *International Journal of Technology Enhanced Learning, 4*(5), 304-313.

Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*. Basic Books.

Hamari, J., Koivisto, J., & Sarsa, H. (2016). Does gamification work?–A literature review of empirical studies on gamification. In 2016 49th Hawaii international conference on system sciences (pp. 3025-3034). IEEEXplore.

Hattie, J. (2017). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. Routledge.

Inije, G. O., Utoware, J. D. A., & Kren-Ikidi, P. C. (2013). Utilization of e-Learning technologies in business education instructional delivery in colleges of education in Delta State Nigeria. *International Journal of Education and Research, 1 (10), 114.*

Izwan N. M. S., Jastini, M. J. &Rodzi, S. S. M. (2016). The Application of Google Classroom as a Tool for Teaching and Learning. *Journal ofTelecommunication, Electronic and Computer Engineering, 8(10).1-7.*

Lorenz, T. Griffith, E. & Issac, M. (2020). We live in zoom now. The New York Times.https://en.m.wikipedia.org. retrieved 14th June 2021.

Musa, K. S., Alhaji, I. B., & Aliyu, M. K. (2017). Comparative analysis of two input method of mobile phones: a tool for evaluation of information and communication technology (ICT) test entry gadgets for educational development beyond 2020. *Journal of Nigerian Association of Teachers of Technology, 12 (1), 49-55.*

Nwafor, G. (2020). Digital tools in teaching religious education: The case of Christian Religious Knowledge. *Educational Research International, 9*(2), 71-83. https://doi.org/10.1007/s10661-022-10251-6

Nwafor, G. (2020). Digital tools in teaching religious education: The case of Christian Religious Knowledge. *Educational Research International, 9*(2), 71-83.

Ofoegbu, O. E. (2021). Technology and teaching effectiveness: A study of education lecturers in Nigeria. *Journal of Technology and Teacher Education, 29*(4), 19-25. https://doi.org/10.1177/01430343211012345

Ofoegbu, O. E. (2021). Technology and teaching effectiveness: A study of education lecturers in Nigeria. *Journal of Technology and Teacher Education, 29*(4), 19-25.

Ogedi, P. O. (2021). Mobile application technologies and managing learning strategies as correlates of lecturers instructional effectiveness in public universities in south east Nigeria. *Unpublished Ph.D. Dissertation submitted to the School of*

Postgraduate Studies, Michael Okpara University of Agriculture, Umudike Nigeria.

Ogedi, P. O., Bappah, S. A., &Nwialu, C. E. (2017). Impact of innovative and creative education at basic education level towards economic development in a developing economy: a salient issue in TVET. *Journal of Nigerian Association of Teachers of Technology, 12 (2), 35-42.*

Ogedi, P. O., Kenkwo, E. &Ekeoma, P. E. (2017). Effective management towards maintenance of available and utilization of information and communication technology tools for quality instructional delivery in public university in south east Nigeria. *Journal of Resourcefulness and Distinction, 14 (1), 125-136.*

Owusu-Acheaw, M., & Agatha, G. L. (2015). Use of social media and its impact on academic performance of tertiary institution students: a study of students of Koforridua Polytechnic, Ghana. *Journal of Education and Practice, 6 (6), 94-101.*

Rumanyika, J. D. &Mashenene, R. G. (2015). Mobile phone technology adoption and classroom management in higher learning institutions in Tanzania: challenges and implication. *International Journal of Information technology and Business Management, 36 (1), 34-51.*

Smith, J. K., & Smith, L. M. (2018). Effective teaching methods for higher education: A comprehensive review. *International Journal of Teaching and Learning in Higher Education, 30*(1), 15-30.

Uche, A. (2020). Assessment of instructional strategies in teaching Christian Religious Knowledge in Nigerian colleges of education. *Journal of Christian Education, 23*(4), 25-40.

Uche, A. (2020). Assessment of instructional strategies in teaching Christian Religious Knowledge in Nigerian colleges of education. *Journal of Christian Education, 23*(4), 25-40.

Udo, M. C. E. (2019). ICT-Pedagogy integration. In U. P. N., Amadi (Ed.). Curriculum making in the 21st century: Trends, issues and challenges. Abuja: Cape Publishers Int'l Ltd.

Uzoagulu, A. E. (2011). *Practical guide to writing research project reports in tertiary institutions.* Enugu: Cheston Ltd.

Wang, Q., H. L. Woo, H.L., Quek, C. L., Yang, Y. & Liu, M. (2012). Using the Facebook group as a learning management system: An exploratory study. *Journal of Education Technology, 2012, 43(3): 428–438.*

Zhao, Y. (2019). The role of technology in evidence-based academic practices: The New Teaching Paradigm. *Educational Technology Research and Development, 67*(3), 113-126.

Zhao, Y. (2019). The role of technology in evidence-based academic practices: The New Teaching Paradigm. *Educational Technology Research and Development, 67*(3), 113-126.