MOBILE APPLICATION COMPETENCE AND CLASSROOM COMMUNICATION STRATEGIES AS CORRELATES OF LECTURERS INSTRUCTIONAL EFFECTIVENESS IN PUBLIC UNIVERSITIES IN SOUTH EAST NIGERIA.

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Abstract

The study examined mobile application competence and classroom communication strategies 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 universities. The sample size was 317 lecturers which represented 50% of the population. This consisted of 80 lecturers' from Michael Okpra University of Agriculture, Umudike (MOUAU), 75 lecturers from University of Nigeria, Nsukka (UNN), 53 lecturers' from Alex Ekwueme Federal University Ndufo Alike Ikwo (AE-FUNAI), 28 lecturers from Abia State University, Uturu (ABSU), 48 lecturers from Imo State University, Owerri (IMSU) and 33 lecturers from Ebonyi State University Abakaliki (EBSU). The sample was arrived at using four-staged sampling technique. Data for the study was collected using researchers' self-developed questionnaires titled Mobile Application Competence and Classroom Communication Strategy Questionnaire (MACCCSQ) 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 MOUAU. 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 study revealed that Mobile application competence has a positive moderate extent correlate with lecturers instructional effectiveness in public universities in south east, Nigeria. Effective classroom communication strategy in managing learning to a positive low extent correlate with lecturers instructional effectiveness in public universities in south east, Nigeria. The study recommended amongst others that, Lecturers' competence strategy in using mobile application technologies significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria. Effective classroom communication strategy in managing learning significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria.

Keywords: *Managing, learning, instructional effectiveness, curriculum assimilation, classroom control and instructional planning.*

Introduction

Notably, the dynamism of the universe is all about technological reflection. For us to understand the 21st century trends, an insight on all mobile devices becomes imperative. Mobile apps could be defined as an internet application that run on smart phones and other mobile devices which permit the user to source information conveniently. Mobile apps devices may include portable game console, laptop, personal media, players, personal digital assistants, phones, blogs, internet facilities, chrome and Google amongst other. Gadhavi and Shah (2010) defined mobile application as a computer program designed to perform specific

functions directed at the end user on the move or other application programmes. Aanu and Adeola (2017) defined mobile application technology as a type of application software designed to run on a mobile device such as a smartphone or tablet computer. This entails that mobile application technologies are phone software programmer installable and downloadable in mobile devices for sourcing online information and other helpful activities to the user. Application platform interface therefore played an essential role in developing diverse software and operating systems for mobile phones and computer devices.

Notably, technologies have taken over all aspects of human activities, especially mobile phone technology and its application. This makes the demand and need for this technological gadgets/software to be on the increase which effect leads to sporadic development intellectually and economically through convenient search for academic resourceful information needed by the clients. Ogedi (2021) noted that the importance and usefulness of emergent technologies (mobile application technologies) cannot be ignored in every sector of the economy with special emphasis on the education sector. It was on this backdrop that 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. There is therefore need for educationalist and other stakeholders in the education system to engraft technological facilities in delivery of instruction in the school system.

Competence in using mobile application technology for instructional activities grew strongly during Covid and post covid era. Ogedi (2021) noted that mobile application technologies have led to technological advancement globally in providing enabling environment that enhance quality teaching-learning activities outside the classroom learning which in turn has led to more opportunities for skill development. Saliently, mobile apps technology for teaching and learning in 21st century education, many aspects to communication towards accessing academic and self-helping information includes internet, blogs, webs and other applications. Chen and deNoyelles (2013) averred that mobile technologies are transforming college students academic lives, including what and how they learn within and outside the classroom.

Classroom communication involves lecturer to learner, learner to lecturer and learner to learner means of sharing ideas and enhancing actual learning exercise. Esobhawan (2016) defined effective classroom communication as the basis for stable emotional interpersonal interaction and basic tools for human relations in the classroom. This entails that effective classroom communication stirs the quality relationship between the lecturers' and the learners as well provide a good channel for achieving instructional objectives and receive instructional feedback from the learners.

Communicating in the classroom thus can take diverse forms ranging from spoken words, signs and symbols as whistling, hissing, tapping, eye contact, gesticulation, facial expression amongst other used for informating the learner during instructional activities. Nwosu (2011) opined that classroom communication targets essentially at the leaners from which feedback is expected, its cyclical nature ultimately ensures benefits and attainment of objectives by all participants. To Evans-Obinna (2016), effective classroom communication determines the extent to which knowledge is transferred. Effective classroom communication is the criteria for effective and functional instructional delivery. All activities of the lecturer/teacher while in the classroom should gear towards making the learners to clearly understand the content and purpose of such instruction; thus, the lecturers/teachers should ensure that effective communication strategies or techniques are applied while delivering instructional activities.

Sprawlingly, making the instruction relevant and interesting to the learner in order to develop interest of the learner; acknowledge the gap existing between his/her knowledge and exposure and that of the learner; skillful communication and interference in handling instructional content; ensure that content, concepts, ideas unfamiliar to the learner are clearly explained; ensure clear and unambiguous instruction, avoiding vagueness of speech as well as been fair to all learner remain factors that can facilitate and improve effective classroom communication. Eya in Ogedi (2021) asserts that effective classroom communication deals with teachers teaching and the students activities of listing and responding to the teachers' lesson. This implies that once the instructor (lecturers') communicates effectively and efficiently to the learners while delivering instruction using any technological measure, effective instructional feedback is ascertained by the learners'.

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. Ayeni (2014) defined instructional effectiveness as a process of facilitating students' learning using appropriate management and instructional strategies by the teacher to manage the interrelatedness among students' interest, the content for learning and means of material that the teacher intends to use in teaching and learning. 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 process with a limited resources and limited time. In education sector, efficiency depicts effective teaching /instructional delivery which cannot take place without effective lecturer/ educational workforce. It therefore implies getting an instructional exercise done accurately with little or less resources unlike effectiveness that takes more time and more resources to get an instructional exercise done.

Statement of the Problem

The present-day educational system is faced with divergent mobile application technological issues that required sustainable strategies for enhancing effective instructional delivery amongst lecturers. This has made classroom communication strategy a major means of classroom information mechanism for effective delivery of instruction using technological software. The ideal situation for technological competence amongst lecturers and classroom communication strategy as well as effectiveness of an instruction by lecturers incorporates managing learning for instructional effectiveness, lecturers' positive attitude towards the adoption of different management strategies in the instructional exercise, good classroom control, quality instructional planning and curriculum assimilation, effective instructional control, organization and implementation of all which remains essential factors in education system.

Currently in the education system, efforts have been made by the university management to provide lecturers with adequate orientation that will ensure that wide range strategies that support conducive environment for learning is being encouraged and adopted. Instructional activities in the classroom amongst lecturers are perceived to be in a low standard thus most lecturers lack the required and adequate skills and strategies to manage learning situations, poor control of the classroom activities, sustaining curriculum assimilation by the lecturers' poor inclusion of management ethics in classroom activities. However, it seems that most lecturers in the university education lack the capacity, skills and competence in managing learning activities which have remained a serious problem in the use of managing learning strategies for ensuring effective delivery of instruction amongst lecturers. The problem of instructional ineffectiveness and management of learning caused by lack of orientation, seminars, workshops and professional development amongst lecturers on management of learning are on a high side, thereby resulting to poor instructional achievement. The problem of this study put in question form is; how do mobile application competence and classroom communication strategies correlates 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 competence and classroom communication strategies correlate with lecturers' instructional effectiveness in public universities in South East, Nigeria. Specifically, the study seeks to:

6. Determine the extent to which lectures' mobile application competence strategy relate to lecturers instructional effectiveness.
7. Determine the extent to which effective classroom communication strategy relate to lecturers instructional effectiveness.

Research Questions

The following research questions guided the study:

6. To what extent does lecturers' mobile application competence strategy relate to lecturers instructional effectiveness?
7. To what extent does effective classroom communication strategy relate to lecturers instructional effectiveness?

Hypotheses

The following null hypotheses were formulated and were tested at .05 level of significance.

$H0_1$: There is no significant relationship between lecturers' mobile application competence strategy and lecturers instructional effectiveness.
$H0_2$: There is no significant relationship between effective classroom communication strategy and 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). 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%.

RESEARCH QUESTION ONE:
To what extent does lecturers' mobile application competence strategy relate to lecturers instructional effectiveness?

Table 1: Correlation Matrix of Lecturers' Mobile Application Competence Strategy and Lecturers Instructional Effectiveness.

		MACS	LIE
MACS	Pearson Correlation	1	.404**
	Sig. (2-tailed)		.000
	N	259	259
LIE	Pearson Correlation	.404**	1
	Sig. (2-tailed)	.000	
	R^2	.163	
	N	259	259

**. Correlation is significant at the 0.05 level (2-tailed).
a. Predictors: (Constant), MACS
b. Dependent Variable: LIE

Data on table 1 indicated a correlation coefficient (r) of .404 which is a positive correlation and is within the coefficient limit of +/-0.40 to 0.69 as Moderate/Medium Extent relationship. This indicates that lecturers' competence strategy in utilizing mobile application technologies to a positive moderate extent relates with lecturers instructional effectiveness in public universities in south east Nigeria. The coefficient determination (R^2) .163 indicates that 16.3% of the variance observed in competence level using mobile apps technology is explained by the variation in lecturers instructional effectiveness. It implies that lecturers' competence in utilizing mobile application technologies to a positive moderate extent correlate with lecturers instructional effectiveness in public universities in south east, Nigeria.
A corresponding hypothesis formulated to further address the research question is:

HYPOTHESIS ONE:
There is no significant relationship between lecturers' mobile application competence strategy and lecturers instructional effectiveness

Table 2: Regression Analysis of Relationship Between Lecturers' Mobile Application Competence Strategy and Lecturers Instructional Effectiveness

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	31.301	1	31.301	50.058	.000[a]
	Residual	160.699	258	.625		
	Total	192.000	259			

a. Predictors: (Constant), MACS
b. Dependent Variable: LIE

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

Data on table 2 revealed that F-calculated value of 50.058 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 lecturers' competence strategy in using mobile application technologies and lecturers instructional effectiveness was rejected. This mean that lecturers' competence strategy in using mobile application technologies significantly relate with lecturers instructional effectiveness in public universities in South East, Nigeria.

RESEARCH QUESTION TWO:
To what extent does effective classroom communication strategy relate to lecturers instructional effectiveness?

		MALE	LIE
CCS	Pearson Correlation	1	.336**
	Sig. (2-tailed)		.000
	N	259	259
LIE	Pearson Correlation	.336**	1
	Sig. (2-tailed)	.000	
	R^2	.113	
	N	259	259

ant at the 0.05 level (2-tailed). CCS= Classroom Communication Strategy and LIE= Lecturers Instructional Effectiveness

Table 3: Correlation Matrix of classroom communication strategy and Instructional Effectiveness
Data on table 3 indicated a correlation coefficient (r) of .336 which is a positive correlation and is within the coefficient limit of+/-0.00 to 0.33 indicating no correlation/ weak/low extent relationship. This indicates that effective communication in managing learning strategy to a positive low extent relates with lecturers instructional effectiveness in public universities in south east, Nigeria. The coefficient determination (R^2) .113 indicates that 11.3% of the variance observed as observed in effective classroom communication strategy is explained in the variation in lecturers instructional effectiveness. It implies that effective classroom communication in managing learning strategy has a positive weak relationship with lecturers instructional effectiveness in public universities in south east, Nigeria.
A corresponding hypothesis formulated to further address the research question is:

HYPOTHESIS TWO:
There is no significant relationship between classroom communication strategy and lecturers instructional effectiveness.

Table 4: Regression Analysis of Relationship Between Classroom Communication Strategy and Lecturers Instructional Effectiveness

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	21.405	1	21.405	32.678	.000[a]
	Residual	168.347	258	.655		
	Total	189.752	259			

a. Predictors: (Constant), CCS
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 32.678 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 effective classroom communication strategy in managing learning and lecturers instructional effectiveness in public universities in South East, Nigeria was rejected. This mean that effective classroom communication strategy in managing learning significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria.

Findings of the Study

6. Mobile application competence has a positive moderate extent correlate with lecturers instructional effectiveness in public universities in south east, Nigeria.
7. Effective classroom communication strategy in managing learning to a positive low extent correlate with lecturers instructional effectiveness in public universities in south east, Nigeria.

Discussion of the findings

Table 1: Extent of lecturers' mobile apps competence strategy and lecturers instructional effectiveness

Data on table 1 and 2 indicated a correlation coefficient (r) of .404 and F-calculated value of 50.058 at 0.05 level of significance which is a positive correlation and is within the coefficient limit of +/-0.40 to 0.69 as Moderate/Medium Extent relationship. This indicates that lecturers' competence strategy in utilizing mobile application technologies to a positive moderate extent relates with lecturers instructional effectiveness in public universities in south east, Nigeria. The coefficient determination (R^2) .163 indicates that 16.3% of the variance observed in the mobile apps competence is explained by the variation in instructional effectiveness. Since the P-value of .000[a] is less than the alpha value at 0.05; thus, null hypothesis which states that there is no significant relationship between lecturers' competence strategy in using mobile application technologies and lecturers instructional effectiveness was rejected. This mean that lecturers' competence in using mobile application technologies significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria.

Extent of effective classroom communication strategy relate to lecturers instructional effectiveness

Data on table 2 and 3 indicated a correlation coefficient (r) of .336 and F-calculated value of 34.667 at 0.05 level of significance which is a positive correlation and is within the coefficient limit of+/-0.00 to 0.33 indicating no correlation/ weak/low extent relationship. This indicates that effective communication strategy to a positive low extent relates with lecturers instructional effectiveness in public universities in south east, Nigeria. The coefficient determination (R^2) .113 indicates that 11.3% of the variance observed in the effective classroom communication strategy is explained by the variation in lecturers instructional effectiveness. It implies that effective classroom communication strategy to a positive weak/low 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; thus, null hypothesis which states that there is no significant relationship between effective classroom communication strategy and lecturers instructional effectiveness in public universities in south east, Nigeria was rejected. This mean that use of facebook application technologies significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria. Agreeing to this fact, Nwosu (2011) contend that classroom communication targets essentially at the learners from which a feedback is expected, its cyclical nature ultimately ensure benefits and attainment of objectives by all participants. Similarly, Eya (2008) asserts that effective classroom communication deals with teachers teaching and the students activities of listing and responding to the teachers' lesson.

Recommendations

1. Lecturers' competence strategy in using mobile application technologies significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria.
2. Effective classroom communication strategy in managing learning significantly relate with lecturers instructional effectiveness in public universities in south east, Nigeria.

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