

Awareness And Use Of Blended Instructional Models Among Lecturers In Federal And State Universities In South East Nigeria

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Abstract

The study sought to investigate the awareness and use of blended instructional models by federal and state university lecturers in South – East Nigeria. Two research questions guided the study while two null hypotheses were tested at 0.05 level of significance. A descriptive survey research design was adopted for the study. The population comprised 1216 lecturers in the Faculty of Education across eight federal and state universities in South – East Nigeria. The sample drawn from the population for the study was 275. The statistical tool used to arrive at the sample size was Taro – Yamane. The sample was drawn using stratified proportionate simple random sampling techniques and simple percentage. The instruments for data collection was a structured questionnaire titled 'Awareness of Blended Instructional Model Questionnaire' (ABIMQ) and 'Use of Blended Instructional Model Questionnaire' (UBIMQ). They were structured based on a 5 – point Likert scale with the response options of Very Aware (VA), Aware (A), Somewhat Aware (SA), Not Aware (NA), and Not at all Aware (NAA) as well as Always (A), Often, (O), Sometimes (S), Rarely (R) and Never (N). The instruments contained 44 items. The instruments were validated by three experts from Nnamdi Azikiwe University, Awka. The reliability of the instruments were established using Cronbach Alpha to test for internal consistency of the items which yielded reliability indices of 73 and 72 respectively. The obtained data were analyzed using mean and standard deviation for the research questions while independent sample t-test statistical analysis was used in testing the hypotheses at a 0.05 level of significance. Findings from the study revealed that federal and state lecturers were more aware and frequently use the station rotation model and flipped classroom model compared to the flex model and lab rotation model. Gender and school type did not significantly influence the level of awareness and usage of models. The study recommended among others that federal and state lecturers should make efforts to develop awareness of different instructional models through training and retraining workshops by the government to ensure their use in teaching and learning in public universities.

Keywords: Awareness, Use, Blended instructional models, Federal, State, University education

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I. Introduction

The comprehensive development of any nation heavily relies on education, which serves as a conduit for achieving sustainable national advancement through technological and scientific progress. Sustainable development can only be realized when citizens possess innovation, creativity, and the skills necessary to apply novel educational concepts. As a result, the National Policy on Information and Communications Technology (ICT) advocates for education that is universally accessible, empowering, and inclusive (Federal Ministry of Education, 2019). This type of education should lead to genuine national development. Education remains the cornerstone of numerous developed economies. As Olugbemi (2019) points out, education is the process of facilitating learning and acquiring knowledge, skills, values, beliefs, and habits. Due to its potential to advance human civilization, education has evolved into a transformative tool that facilitates the acquisition of pertinent knowledge for adapting to a dynamic society.

Education takes various forms, including formal, non-formal, informal, distance, and experiential methods. Formal education is the conventional education provided in schools, colleges, and universities (Kapur, 2019). University education, in particular, is more specialized and in-depth, serving as the foundation for the knowledge economy and human capital development. It plays a pivotal role in stimulating growth, reducing poverty, and enhancing shared prosperity. A well-organized, strategically focused, diversified, and coordinated university education system is essential for producing the high-caliber graduates necessary to foster the sustainable economy a nation aspires to achieve. University degrees often serve as stepping stones to more advanced and industrial employment opportunities. Consequently, numerous young individuals aspire to attain a university education.

Despite the considerable advantages of university education, research indicates a significant decline in educational quality across Nigerian universities (Ogunode, Abubakar, and Ali, 2020). Despite having over 170 established universities and a population exceeding 200 million, the National Universities Commission (NUC, 2019) has acknowledged Nigeria's ongoing struggle to meet the educational needs of its population. Given the large number of students enrolled in universities annually, scholars argue that the lecturer-to-student ratio for in-person classes falls short of international teaching and learning standards (Bobon and Gabriel, 2021). For instance, Ogunode, Abubakar, and Ali (2020) reveal that at Harvard University, the lecturer-to-student ratio stands at 1:4, while at the Massachusetts Institute of Technology, its 1:9, and at the University of Cambridge, its 1:3.

In contrast, the equivalent ratios in Nigerian universities are significantly higher, particularly in federal and state-owned institutions. For instance, at Lagos State University, the ratio is 1:144, and at the University of Abuja, it's 1:122 (Ogunode, Abubakar, and Ali, 2020). A study on Nnamdi Azikiwe University, Awka, indicates that many lecturers handle an excessive number of students, far exceeding international standards (Eleweke et al., 2020). According to Eleweke et al. (2020), the National Universities Commission (NUC) of Nigeria set a lecturer-to-student ratio of 1:10 to 1:30 for all academic disciplines. Unfortunately, this guideline is not adhered to in federal and state universities due to inadequate human and material resources. These universities are expected to receive public funding from state and national governments. The inability to adhere to international teaching and learning standards has lasting consequences for the quality of education delivery in the country, especially in the absence of digital technology integration.

Primarily, the most significant challenge to the quality of teaching and learning in Nigerian universities stems from the inadequate integration of digital technologies in the dissemination and accessibility of learning materials/resources (Olibie and Ezenwanne, 2013). Digital technologies encompass electronic devices, computers, and software used for processing, storing, and transmitting information. The incorporation and use of digital technologies in education have been recognized as transformative tools and essential facilitators of instructional success (Henderson, Selwyn, and Aston, 2017). For example, digital technologies have been shown to enhance equitable access to higher education and promote efficiency in delivering and personalizing teaching processes (Henderson, Selwyn, and Aston, 2017). However, the sluggish adoption of digital technologies in Nigerian universities has led to subpar content delivery and disruptions in the learning process. For instance, in 2020, Nigerian universities, particularly public institutions, lost an entire academic year due to COVID-19-induced lockdowns, as they were unable to transition to online teaching and learning.

In contrast, other countries that had already integrated digital technologies into their educational systems prior to the 2020 COVID-19 lockdowns managed to seamlessly transition to online teaching and learning (Mhlanga and Moloi, 2021). For example, in South Africa, higher education institutions continued core activities remotely through Learning Management Systems (LMSs). Australian universities significantly embraced digital technologies for delivering undergraduate and graduate programs (Tyan, Ryan, and Lamont; Mill, 2015). Similarly, American universities adopted blended instruction to enhance learning quality and content delivery (Emily and Charles, 2018). It is evident that for effective teaching and learning in Nigerian universities, lecturers must be well-versed in blended instructional models and incorporate them into their teaching processes to address issues inherent in traditional face-to-face instruction.

Blended instructional models entail teaching methods that combine traditional in-person instruction with computer-mediated approaches. This approach allows for a mix of classroom teaching and at-home learning using various technologies such as video conferencing, Zoom, WhatsApp, Google Classroom, audio conferencing, and others. These online communication tools facilitate information dissemination between lecturers and students, as well as among students themselves when employing blended instructional models. Depending on the chosen instructional model, students and lecturers can engage in independent study, small group study, and whole-class instruction (Miscellaneous, 2021). The extent of organization and participation depends on the specific model selected. Various blended instructional models are available for lecturers to employ in educational delivery.

According to Graham, Borup, Short, and Archambault (2019), blended instructional models encompass structures and patterns that organize online and face-to-face learning activities in a blended classroom. The design of each model hinges on several factors, including the physical learning environment, school's technology access, students' age and abilities, and class duration. Each model diverges in terms of lecturer responsibilities, administrative requisites, instructional plans, and the subject matter. All these models offer a degree of flexibility during implementation. Some of the models outlined by Graham, Borup, Short, and Archambault (2019) include the Station Rotation model, Flipped Classroom model, Flex model, and Lab Rotation model.

The station rotation model unfolds within the physical classroom. During class, students rotate on a set schedule among various modalities, often encompassing three learning stations: (1) online learning, (2) face-to-face instruction, and (3) group projects (Spiro, 2022). The station rotation model can be applied at any educational level, including universities. The flipped classroom model represents one way to infuse active learning into course delivery. This instructional model involves students acquiring fundamental subject knowledge before in-person interactions with the lecturer, followed by classroom engagement in active learning experiences (Long, Cummins,

and Waugh, 2017). In this model, students primarily access instructional material through pre-prepared recorded videos that incorporate presentation slides, video clips, images, notes, and voice-recorded content. Students watch these videos or lectures at home and subsequently participate in classroom discussions with the lecturer to enhance comprehension. The flex blended instructional model places emphasis on online content delivery within a traditional school context, catering to non-traditional learning students. Instructional resources are delivered online, with the lecturer providing one-on-one or small-group assistance when required. The online lab station model becomes relevant when a school possesses a complete set of computers in the classroom. Under this model, students relocate to a designated computer lab for online learning. This model relies heavily on computerized distance learning for nearly all course content and is particularly suitable for institutions with limited qualified lecturers and learning space. The school provides a physical environment, such as a computer lab, enabling students to access online platforms and share digital resources. As Bray and Volchenkova (2016) highlight, this model allows students to engage with both traditional and online classrooms on campus and is feasible in institutions or schools predominantly equipped with computer labs, making the integration of blended instructional models more attainable. The feasibility of blended instructional models underscores the necessity of their awareness and utilization in teaching and learning.

Awareness plays a pivotal role in enabling lecturers to effectively and efficiently employ blended instructional models in their teaching processes. According to Adenariwo (2022), awareness denotes knowledge or understanding of a situation, fact, consciousness, recognition, realization, comprehension, and acknowledgment concerning a specific circumstance or development. It signifies the capability to recognize or apprehend the existence of something. Awareness entails the knowledge gained through perception or the use of information. It involves possessing knowledge or insight into a specific phenomenon through experience or promotion (Suleiman, Jajeev, and Hassana, 2018). Engaging in awareness campaigns aligns with Nigeria's national ICT policy, which emphasizes the necessity for "periodic public awareness campaigns and sensitization by the government to ensure effective stakeholder participation in implementing ICT in education" (Federal Ministry of Education, 2019). Lecturers must become aware of blended instructional models before they can incorporate them into their teaching methods, unless they choose not to do so. Consequently, without an understanding of blended instructional models, their usage will be limited. In essence, awareness serves as a catalyst for usage to a certain extent.

The utilization of blended instructional models offers numerous advantages to both students and lecturers. According to Cleveland-Innes and Wilton (2018), blended instructional models offer benefits such as enhanced learning skills, increased access to information, greater satisfaction, improved learning outcomes, and opportunities for collaborative learning and teaching. Relying solely on traditional face-to-face classroom instruction is no longer considered an effective teaching approach (Emelo, 2014). In the contemporary era where technology permeates nearly every facet of human activities, conventional instructional methods are ineffective and lack the potency to impart enduring knowledge and concepts to students. As Emelo (2014) highlights, a 2008 analysis revealed that students forgot 70% of their course content within a week and 87% within a month under traditional teaching methods. This underscores the potential of technology integration, specifically in the form of blended instructional models, to bridge the learning gap and make education an ever-present service."

Statement of the Problem

Historically, academic instruction primarily occurred through face-to-face classroom interactions. However, the post-COVID-19 era has sparked a significant transformation in the way instruction is delivered. This shift prompted the introduction of various innovative teaching methods worldwide, including at the university level, to accommodate remote learning. Unfortunately, the lack of engagement from lecturers and students in Nigerian public universities during the pandemic suggests a struggle to transition to this new approach of teaching and learning. For instance, in 2020, Nigerian university students and lecturers faced nearly a year of suspension due to COVID-19 lockdowns, leading to disruptions in teaching and learning processes within Nigerian universities.

This situation has forced lecturers to expedite content delivery to complete the interrupted academic calendar. Academic semesters have now been condensed into intensive courses to make up for lost time. In some cases, a curriculum designed for two years is compressed into a single academic session. The repercussions of this condensed educational approach are substantial. Firstly, it places an overwhelming workload on lecturers, leading to stress and reduced effectiveness, particularly when lacking motivation for the increased workload. Secondly, executing planned instruction becomes challenging due to limited teaching resources and the difficulty of managing multiple classes within a short timeframe.

Technological advancements have significantly influenced teaching and learning, impacting instructional content, models, and materials. Among these advancements, blended instructional models have emerged as a result of integrating technology into the instructional process. These models entail combining traditional classroom teaching, individualized instruction, and digital learning. They enable students to access learning content at their own convenience and pace. Practical implementations have demonstrated that blended

instructional models aid lecturers in managing large class sizes and delivering course content more efficiently. Previous research also suggests that students exposed to blended instruction tend to outperform those exposed solely to traditional face-to-face instruction (Baris, 2020; Iga, 2018). These studies indicate that blended instructional models foster enhanced learning outcomes among university undergraduate students.

However, the inability of Nigerian universities to effectively continue teaching and learning during challenging circumstances demands a paradigm shift. This study seeks answers to the following inquiries: Are lecturers in federal and state institutions aware of blended instructional models? To what extent do these lecturers from federal and state universities incorporate blended instructional models in their teaching processes? Seeking solutions to these questions serves as the driving force behind this research."

Purpose of the Study

The purpose of the study was to investigate the awareness and use of blended instructional models by federal and state university lecturers in universities in South East Nigeria.

Specifically, the study sought to investigate the following:

1. The level of awareness of blended instructional models (Station Rotation model, Flipped Classroom model, Flex Model, and Lab Rotation Model) among Faculty of Education lecturers in federal and state universities in South East Nigeria.
2. The level of use of blended instructional models (Station Rotation model, Flipped Classroom model, Flex Model, and Lab Rotation Model) among Faculty of Education lecturers in federal and state universities in South East Nigeria.

Research Questions

1. What are the mean scores for awareness of blended instructional models (Station Rotation model, Flipped Classroom model, Flex Model, and Lab Rotation Model) among federal and state Faculty of Education lecturers in public universities in South East Nigeria?
2. What are the mean scores for the use of blended instructional models (Station Rotation model, Flipped Classroom model, Flex Model, and Lab Rotation Model) among federal and state Faculty of Education lecturers in public universities in South East Nigeria?

Hypotheses

1. There is no significant difference between the mean scores of federal and state Faculty of Education lecturers in their awareness of blended instructional models (Station Rotation model, Flipped Classroom model, Flex Model, and Lab Rotation Model).
2. Ho₂ There is no significant difference between the mean scores of federal and state Faculty of Education lecturers in their use of blended instructional models (Station Rotation model, Flipped Classroom model, Flex Model, and Lab Rotation Model).

II. Methodology

The study adopted a descriptive survey research design. According to Creswell (2014), this approach involves gathering data that describes events and then organizing, depicting, and describing the collected data without any manipulation. The design is used to study both small and large populations by collecting and analyzing data through questionnaires or interviews, to make generalizations or inferences. Survey research design is appropriate for any study that requires the opinions of respondents.

Population and Sample

The population of the study consisted of 1216 lecturers in the Faculty of Education across eight Federal and State in South – East Nigeria. The sample size of the study consists of 275 (three federal and five state) universities. The study adopted the Taro Yamane formula for determining the sample size. To reach the respondents' lecturers, Stratified proportionate simple random sampling technique was adopted. Each university formed a stratum. Percentage proportionate contribution of the universities to the population determines the number of respondents that were drawn as a sample for each institution.

Instrument for Data Collection

Questionnaire instruments were designed by the researchers and titled the 'Awareness and Use of Blended Instructional Questionnaire' (AUBIQ). The questionnaire is divided into two sections, A and B, arranged in three parts. Section A, Part 1 contains demographic information about the respondents, while section B part 11 contains 24 items on awareness of blended instructional models being investigated in the study. The response options were structured on a five point Likert scale of Very Aware (VA), Aware (A), Somewhat Aware (SA), Not Aware (NA) and Not at all Aware (NA). Section B part 111 contains 20 items on the use of blended instructional models being investigated in the study structured in five point rating scale of Always (A), Often (O), Sometimes

(S), Rarely (R), and Never (N) with numerical values of 5, 4, 3, 2, and 1 respectively. The scoring was reversed on negative items with numerical values of 1, 2, 3, 4, and 5 respectively.

Method of Data Collection

The researchers with three research assistants administered the questionnaire to the eight federal and state universities in South East Nigeria. Responses were collected on the -spot -delivery. The distribution and collection of the data lasted for two weeks. This method was chosen to expedite the process and ensure a reasonable return rate for the questionnaires.

Method of Data Analysis

The data gathered from the instrument administered was analyzed using mean and standard deviation. The hypotheses were tested using an independent t-test at a significance level of 0.05. Mean ratings above 3.0 indicated Aware or Often, while those below 3.0 indicated Not aware, or Rarely. The analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 21.

III. Results

Awareness of Blended Instructional Models by Federal and State Lecturers

Research Question 1: What are the mean scores for awareness of blended instructional models (Station rotation model, Flipped classroom model, Flex model and Lab rotation model) among federal and state Faculty of Education lecturers in South East Nigeria?

**Table 1: Mean and standard Deviation Scores of Federal and State Lecturers’ Awareness of Blended Instructional Models
N = 275
Federal = 174, State = 101**

	\bar{X}	Federal SD	Remark	\bar{X}	State SD	Remark
<u>STATION ROTATION MODEL</u>						
Are you aware that the station rotation model:						
1. is a blended instructional mode of teaching	3.79	.87	Aware	3.84	.86	Aware
2. requires giving students group project in classroom	3.66	1.28	Aware	3.59	1.36	Aware
3. involves communicating to students through video conferencing in classroom	3.98	1.06	Aware	3.86	1.17	Aware
4. involves giving students immediate feedback on their recent homework assignment in classroom	2.01	1.18	Not Aware	2.08	1.58	Not Aware
5. allows lecturers to be flexible in instruction to improve students’ learning experience in classroom	3.87	.68	Aware	3.82	.86	Aware
6. allows lecturers to make slide presentation of course outline in classroom to help students personalize learning	2.43	1.41	Not Aware	2.47	1.50	Not Aware
Sub-Total	2.29	1.08	Not Aware	3.28	1.22	Aware
<u>FLIPPED CLASSROOM MODEL</u>						
Are you aware that the flipped classroom model:						
7. is a blended instructional mode of teaching	3.72	1.28	Aware	3.70	1.32	Aware
8. involves pre - recording lectures ahead of instructional delivery	3.72	1.17	Aware	3.61	1.24	Aware
9. requires uploading course content online for students to access	3.94	1.13	Aware	3.68	1.40	Aware
10. involves assigning readings to students with questions to answer for classroom instruction	3.32	1.47	Aware	3.22	1.44	Aware
11. involves creating online group discussion Forum for lecturer and students interactivity	3.06	1.46	Aware	3.06	1.46	Not Aware

12. involves engaging students on classroom discussion to reinforce learning from pre - recorded lectures accessed online	3.39	1.41	Aware	3.42	1.38	Aware
Sub-Total	3.53	1.32	Aware	3.45	1.37	Aware
<u>FLEX MODEL</u>						
Are you aware that the flex model:						
13. is a blended instructional mode of teaching	3.07	1.56	Aware	3.53	1.51	Aware
14. involves providing course content to students online using multi-threading method	3.02	1.41	Aware	3.20	1.41	Aware
15. involves using Google classroom to conduct online discussion site with students	3.21	1.40	Aware	3.05	1.46	Aware
16. involves delivering instructional resources to students online	3.43	1.48	Aware	3.37	1.43	Aware
17. involves delivering some course content to students in school-designated computer lab	2.76	1.31	Not Aware	2.82	1.48	Not Aware
18. involves the lecturer meeting face - to - face with students in small group instruction	2.47	1.49	Not Aware	2.67	1.57	Not Aware
Sub-Total	2.99	1.44	Not Aware	3.11	1.48	Aware
<u>LAB ROTATION MODEL</u>						
Are you aware that the lab rotation model:						
19. is a blended instructional mode of teaching	3.15	1.53	Aware	3.27	1.39	Aware
20. involves engaging students in an interactive e-learning course	2.65	1.45	Not Aware	2.84	1.49	Not Aware
21. involves tracking student's performance online	3.19	1.47	Aware	2.88	1.44	Not Aware
22. helps lecturers to provide valuable data on how students are interacting with the learning content	3.14	1.56	Aware	2.88	1.36	Not Aware
23. involves the lecturers supporting students who do not have access to technology devices at home	2.79	1.49	Not Aware	2.98	1.47	Not Aware
24. involves lecturer delivering briefa lesson to students before rotating students to online lab	3.43	1.37	Aware	3.31	1.40	Aware
Sub-Total	3.06	1.48	Aware	3.03	1.42	Aware
Grand-Total	3.21	1.33	Aware	3.21	1.37	Aware

Data presented in Table 1 shows item by item analysis of the awareness of blended instructional models by federal and state Faculty of Education lecturers in universities in South East Nigeria. The result revealed that lecturers from federal are aware of items 1, 2, 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19, 21, 22, and 24, but are not aware of items 4, 6, 17, 18, 20 and 23. Also lecturers in state universities are aware of items 1, 2, 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19 and 24 but are not aware of items 4, 6, 17, 18, 20, 21, 22 and 23. The sub-total mean scores of 2.29, 3.53, 2.99, and 3.06 shows that federal lecturers are aware of two models out of four models. Also, the sub-total mean scores of 3.28, 3.45, 3.11, and 3.03 shows that state lecturers are aware of the four models. More so, the standard deviation scores of 1.08, 1.32 , 1.4 4, and 1.48 for federal, and 1.22, 1.37, 1.48, and 1.42 for state show how closely related the respondents' mean scores are to one another.

Use of Blended Instructional Models by Federal and State Lecturers

Research Question 2: What are the mean scores for the use of blended instructional models (Station rotation model, Flipped classroom model, Flex model and Lab rotation model) among federal and state Faculty of Education lecturers in South East Nigeria?

Table 2: Mean and standard Deviation Scores of Federal and State Faculty of Education Lecturers' Use of Blended Instructional Models

		Federal			State	
	\bar{X}	SD	Remark	\bar{X}	SD	Remark
<u>STATION ROTATION MODEL</u>						

1.	I use the station rotation model to give students group project in classroom	3.67	1.26	Often	3.85	.87	Often
2.	I use the station rotation model to communicate with students through video conferencing in the classroom	2.94	1.51	Rarely	3.04	1.48	Often
3.	I use the station rotation model to give students immediate feedback on their recent homework assignment in classroom	3.24	1.56	Often	3.83	.77	Often
4.	I use station rotation model to improve student's learning experience in classroom by being flexible in instructional methods	3.46	1.64	Often	3.04	1.44	Often
5.	I make slide presentation of course outline in classroom to help students personalize learning	3.32	1.38	Often	3.17	1.43	Often
Sub-Total		3.33	1.47	Often	3.39	1.20	Often
<u>FLIPPED CLASSROOM MODEL</u>							
6.	I use a flipped classroom model to pre - record lectures ahead of instructional delivery	3.43	1.46	Often	3.02	1.41	Often
7.	I use flipped classroom model to upload course content online for students to access	3.63	1.36	Often	3.54	1.41	Often
8.	I assign readings to students with questions to answer for classroom instruction	3.04	1.52	Rarely	2.75	1.40	Rarely
9.	I use a flipped classroom model to create an online group discussion Forum for lecturer and students interactivity	3.63	1.31	Often	3.28	1.48	Often
10.	I use a flipped classroom model to engage students on classroom discussion to reinforce learning from pre - recorded lectures accessed online	3.37	1.34	Often	3.29	1.30	Often
Sub-Total		3.42	1.40	Often	3.18	1.41	Often
<u>FLEX MODEL</u>							
11.	I use flex model to provide course content to students online using the multi-threading method	3.92	.62	Often	2.87	1.50	Rarely
12.	I conduct online discussion site with students using Google Classroom.	3.84	.81	Often	3.63	1.35	Often
13.	I use flex model to deliver instructional resources to students online	2.91	1.46	Rarely	2.87	1.36	Rarely
14.	I use flex model to deliver some course content to students in a school designated computer lab	3.91	.76	Often	2.30	1.64	Rarely
15.	I use flex model to organize face - to -face meeting with students in small group instruction	2.64	1.41	Rarely	2.82	1.55	Rarely
Sub-Total		3.44	1.02	Often	2.90	1.48	Rarely
<u>LAB ROTATION MODEL</u>							
16.	I use lab rotation model to engage students in an interactive e-learning course	2.71	1.48	Rarely	2.80	1.47	Rarely
17.	I use lab rotation model to track student's performance online	3.21	1.59	Often	3.32	1.48	Often
18.	I provide valuable data on how students are interacting with the learning content	3.14	1.47	Often	2.66	1.38	Rarely
19.	I use lab rotation model to support students who do not have access to technology devices at home	2.80	1.44	Rarely	2.95	1.53	Rarely
20.	I use lab rotation model to deliver brief lesson to students before rotating students to online lab	2.68	1.43	Rarely	2.66	1.50	Rarely
Sub-Total		2.91	1.48	Rarely	2.88	1.47	Rarely
Grand-Total		3.27	1.34	Often	3.09	1.39	Often

Data presented in Table 2 shows item by item analysis of the use of blended instructional models by federal and state Faculty of Education lecturers in public universities in South East Nigeria. The result revealed that federal lecturers make use of items 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 17 and 18, hence do not utilize items 2, 13, 15, 16, 19 and 20. More so, state lecturers make use of items 1, 2, 3, , 5, 6, 7, 9, 10, 12 and 17 but do not utilize items 8, 11, 13, 14, 15, 16, 18, 19 and 20. Also, the sub-mean scores of 3.33, 3.42, 3.44 and 2.91 for federal lecturers and 3.39, 3.18, 2.90 and 2.88 for state lecturers shows that federal lecturers utilize blended instructional models more than lecturers in state universities. Furthermore, the standard deviation scores of 1.47, 1.40, 1.02 and

1.48 for federal and 1.20, 1.41, 1.48 and 1.47 for state show how closely related the respondents' mean scores are to one another.

Hypotheses

Hypothesis 1: There is no significant difference between the mean scores of federal and state Faculty of Education lecturers in their awareness of blended instructional models (Station Rotation model, Flipped Classroom model, Flex Model, and Lab Rotation Model).

Table 3: t-test Comparison of Federal and State Faculty of Education Lecturers' Awareness of Blended Instructional Models in Public Universities.

Source of variation	N	Mean	SD	df	t-cal	P-value	Decision
Federal	174	3.21	1.33	273	1.47	.88	Not-Sig
State	101	3.21	1.21				

Table 3 shows that the mean score for federal lecturers ($M=3.21, SD=1.33$) was not significantly greater than that of their state counterparts ($M=3.21, SD=1.21$); $t(273) 1.47, p=.88$. The null hypothesis of no significant difference between the two groups in their awareness of blended instructional models was therefore not rejected.

Hypothesis 2: There is no significant difference between the mean scores of federal and state Faculty of Education lecturers in their use of blended instructional models (Station Rotation model, Flipped Classroom model, Flex Model, and Lab Rotation Model).

Table 4: t-test Comparison of Federal and State Faculty of Education Lecturers' Use of Blended Instructional Models in Public Universities.

Source of variation	N	Mean	SD	df	t-cal	P-value	Decision
Federal	174	3.27	1.34	273	.90	.36	Not-Sig
State	101	3.09	1.39				

The above table shows that the mean score for federal lecturers ($M=3.27, SD=1.34$) was not significantly greater than that of their state counterpart ($M=3.09, SD=1.39$); $t(273) .90, p=.36$. The null hypothesis of no significant difference between the two groups in their use of blended instructional models was therefore not rejected.

IV. Discussion of Findings

Awareness of Blended Instructional Models by Federal and State University Lecturers

Table 1 revealed the awareness levels of blended instructional models among Faculty of Education lecturers in federal and state universities in South East Nigeria. Lecturers in state universities are aware of the four models while their federal counterparts are not aware of station rotation model and flex model. This result could imply that Federal Government is not mining properly the needs of federal university lecturers in order to meet the expected university standard. This finding is at variance with the general knowledge that federal universities are more standardized than the state universities. The finding agrees with Adeji in Ejinwa (2018) that most teachers in federal institutions especially colleges of education in Nigeria do not have the needed experience and competence to integrate innovative technologies in teaching and learning due to lack of training. The university is the apex of all higher institutions and is expected to be of great standard.

State owned universities are aware of the four models; station rotation model flipped classroom model, flex model and lab rotation mode. The finding is not in agreement with Eresimadu in Amaizu (2013) who asserted that schools owned by State Government do not take proper care of their lecturers. Little variations exist between federal and state lecturers on their awareness of blended instructional models. Therefore the null hypotheses was not rejected because the p. value .88 was greater of the level of significance 0.05 as shown in table 8. Hence from the result of the finding, there should be no disparity in the standard of federal and state universities. Lecturers from Faculty of Education in both school type need to be given equal professional development through workshops and seminars by Federal and State Government to boost their awareness and understanding of blended instructional models.

Use of Blended Instructional Models by Faculty of Education Lecturers

Table 2 revealed the utilization level of blended instructional models among Faculty of Education lecturers in federal and state universities in South East Nigeria. The result revealed that federal lecturers utilize blended instructional models compared to lecturers in state universities. Although the null hypotheses of no significant difference was not rejected, because the P. value .36 was greater than the level of significance 0.05 as shown in Table 10. The study further discovered that the sub-total mean score for individual models shows that lecturers rarely make use of flex model and lab rotation model while their federal counterparts rarely make use of lab rotation model. Both state lecturers and federal lecturers were not using lab rotation model. The result of this finding could be that lecturers did not use them as a result of difficulties encountered in internet connection in Nigeria. The finding is in agreement with Aliyu (2016) who reported that to access the internet fully and steady, a standby power supply is a criterion, which unfortunately has not been tackled by Nigerian government, and this has led to a limited use of the internet by many who desire to use it. Most public universities in Nigeria lack fundamental internet centers, which are necessary for video conferencing, virtual conferencing, zoom meetings, cloud computing, and other blended approaches to teaching and learning.

V. Conclusion

From the findings and discussion of the study, the researcher concluded that federal and state lecturers still need to make great effort to improve the level of their awareness and use of blended instructional models. This is based on the fact that considering the individual models, federal lecturers are not aware of station rotation model and flex model; state lecturers rarely make use of flex model and lab rotation model; both federal and state lecturers did not use lab rotation model. Teaching and learning processes could be enhanced to a great extent if lecturers are aware and make use of blended instructional models.

VI. Recommendations

1. Lecturers should make efforts to develop awareness of different instructional models to ensure their use in teaching and learning in public universities. Technology has transformed the world into a digital village, and teaching have become digitized. By utilizing different instructional models, an innovative instructional environment can be created, considering the needs of all types of learners.
2. Government should invite experts in technology integration to train lecturers on the use and integration of technology in education in order to enable them use blended instructional models consistently for greater efficiency.

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