

# Pre-Pandemic Lecturers' Perception and Readiness for Blended Learning in Medical Education: A Baseline Study for Digital Transformation in Nigerian Universities

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## Abstract

## Original Research Article

This study investigated lecturers' perception and readiness for blended learning in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt, Nigeria, using pre-COVID-19 data obtained before the global disruption of higher education by the coronavirus pandemic. The study became necessary in view of the rapid digital transformation that occurred in higher education during and after the COVID-19 pandemic, which compelled universities worldwide to adopt online and blended learning approaches. Consequently, the study sought to provide retrospective baseline evidence regarding lecturers' awareness, knowledge, perception, and readiness for blended learning prior to the pandemic-driven transition to technology-enhanced learning. Specifically, the study examined lecturers' awareness of blended learning, sources of awareness, knowledge of blended learning concepts, perceptions regarding the usefulness and ease of use of blended learning, and the influence of demographic variables such as gender, age, academic rank, and awareness on lecturers' perception and knowledge of blended learning.

The study adopted a cross-sectional survey research design involving both descriptive and inferential statistical approaches. The population of the study comprised lecturers in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt. Using the Taro Yamane formula and simple random sampling technique, a sample size of seventy-two (72) lecturers was selected for the study. However, fifty-six (56) valid copies of the questionnaire were retrieved and used for analysis, representing a response rate of 77.8%. The instrument used for data collection was a structured questionnaire titled Lecturers' Perception of Blended Learning Questionnaire (LPBLQ). The instrument was validated by experts in Educational Technology and Measurement and Evaluation, while reliability testing using Cronbach Alpha yielded a reliability coefficient of 0.82, indicating high internal consistency. Data collected were analyzed using descriptive statistics such as frequencies, percentages, and mean scores, while Chi-square statistical analysis was used to test the hypotheses at 0.05 level of significance.

The findings revealed that lecturers demonstrated a high level of awareness of blended learning prior to the COVID-19 pandemic, with the internet and online platforms emerging as the major sources of awareness, followed by workshops and seminars. Despite the high awareness observed, lecturers demonstrated only moderate knowledge and competence regarding blended learning implementation, particularly in areas relating to blended course design, online assessment, and instructional integration. The findings further revealed that lecturers generally possessed positive perceptions regarding the usefulness and ease of use of blended learning and believed that blended learning could improve instructional effectiveness, learner engagement, and educational flexibility within medical education. The study also revealed statistically significant relationships between gender and lecturers' perception of blended learning, age and perception of blended learning, academic rank and knowledge of blended learning, as well as awareness and perception of blended learning.

The study concluded that although lecturers within the Faculty of Basic Medical Sciences possessed considerable awareness and positive perceptions toward blended learning before the COVID-19 pandemic, practical readiness and technological competence for large-scale implementation remained only moderate. The study therefore provides important retrospective baseline evidence for understanding the pre-pandemic state of digital preparedness within medical education and contributes to contemporary discussions on digital transformation, technology integration, and sustainable blended learning implementation in Nigerian higher education.

**Keywords:** Blended learning, COVID-19, digital transformation, lecturers' perception, medical education, digital readiness, higher education.



## Background to the Study

The rapid advancement of information and communication technology (ICT) has significantly transformed educational systems across the world. Over the past two decades, higher education institutions have increasingly integrated digital technologies into teaching and learning processes in order to improve instructional delivery, learner engagement, accessibility, flexibility, and academic performance. This technological transformation has given rise to innovative pedagogical approaches such as e-learning, online learning, mobile learning, virtual learning, and blended learning (Garrison & Vaughan, 2008). Among these innovations, blended learning has emerged as one of the most widely accepted and sustainable instructional approaches in contemporary higher education.

Blended learning refers to the deliberate integration of traditional face-to-face teaching methods with online or technology-mediated instructional strategies in order to create a more flexible, interactive, and learner-centred educational environment. According to Garrison and Vaughan (2008), blended learning combines the strengths of classroom interaction with the advantages of digital learning technologies to enhance teaching effectiveness and learning outcomes. Similarly, Graham (2013) described blended learning as a pedagogical approach that merges online educational materials and opportunities for online interaction with traditional classroom methods.

The growing adoption of blended learning in higher education has been driven by several factors, including increasing internet penetration, advances in educational technologies, growing student populations, the need for flexible learning environments, and the demand for improved teaching effectiveness (Porter et al., 2016). Globally, universities have increasingly recognized blended learning as an effective strategy for enhancing instructional quality, promoting active learning, encouraging student participation, and improving

access to educational resources (Means et al., 2013).

In medical and health sciences education, blended learning has become particularly important because of the complex and practical nature of professional training. Medical education requires the integration of theoretical knowledge, practical demonstrations, clinical reasoning, and continuous learning experiences. Consequently, blended learning offers opportunities for combining classroom instruction, laboratory sessions, simulations, virtual demonstrations, and online learning resources in ways that support deeper learning and improved professional competence (Rowe et al., 2012). Studies have shown that blended learning can improve students' critical thinking abilities, independent learning skills, and clinical performance in medical education settings (Liu et al., 2016).

Despite the growing relevance of blended learning globally, its adoption within many developing countries, including Nigeria, has historically been constrained by several factors such as inadequate technological infrastructure, poor internet connectivity, limited institutional support, inadequate funding, and insufficient digital competence among lecturers (Amandu et al., 2013). Prior to the COVID-19 pandemic, many Nigerian universities still relied predominantly on conventional face-to-face instructional approaches, with only gradual movement toward technology-enhanced learning environments.

Lecturers play a central role in the successful implementation of blended learning because they serve as facilitators, instructional designers, assessors, and guides within the teaching-learning process. The effectiveness of blended learning therefore depends significantly on lecturers' awareness, knowledge, competence, and perceptions regarding educational technologies (Davis, 1989). Lecturers' attitudes toward technology strongly influence their willingness to adopt and integrate blended learning into classroom practice (Venkatesh et al., 2003). Positive perceptions toward blended

learning often encourage adoption, while negative perceptions, anxiety, or lack of competence may hinder implementation efforts.

Before the COVID-19 pandemic, discussions regarding digital transformation in Nigerian higher education were still emerging, and many institutions had not fully institutionalized blended learning practices. Consequently, understanding lecturers' awareness, knowledge, and perceptions of blended learning before the pandemic provides important baseline evidence regarding institutional preparedness for digital transformation. Such baseline evidence is particularly valuable because the COVID-19 pandemic, which began globally in late 2019 and significantly disrupted education systems in 2020, forced universities worldwide to rapidly adopt online and blended learning approaches. Institutions that previously had limited digital readiness encountered major challenges in sustaining academic activities during lockdown periods (Dhawan, 2020).

The pandemic therefore exposed existing strengths and weaknesses within higher education systems regarding technology integration and digital preparedness. In retrospect, pre-pandemic studies on blended learning have become highly valuable because they provide historical insight into the state of lecturer readiness before emergency remote teaching became necessary. Such studies help researchers and policymakers understand whether universities already possessed indicators of digital preparedness or whether the transition to online and blended learning occurred largely as an emergency response.

In Nigerian universities, particularly within medical and health sciences education, limited empirical evidence existed regarding lecturers' perceptions and readiness toward blended learning before the pandemic. Most post-pandemic studies now focus on experiences during or after COVID-19, making it difficult to clearly determine the pre-existing state of awareness, preparedness, and institutional readiness. There is therefore a need for studies that provide baseline data regarding lecturers' perceptions of blended learning prior to the pandemic-driven digital transformation of higher education.

The Faculty of Basic Medical Sciences in the College of Health Sciences, University of Port Harcourt represents an important context for examining these issues because of its critical role in the training of healthcare professionals. As a faculty responsible for foundational medical education in disciplines such as anatomy, physiology, biochemistry, pathology, and pharmacology, the integration of blended learning within the faculty has important implications for instructional quality and professional training.

This study therefore investigates pre-pandemic lecturers' perception and readiness for blended learning in medical education within the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt, Nigeria. Specifically, the study examines lecturers' awareness, knowledge, perceptions, and readiness toward blended learning and explores the influence of demographic and academic variables on these factors. The study is expected to provide valuable baseline evidence for understanding the evolution of digital transformation in Nigerian universities and contribute to policy discussions regarding sustainable technology integration in higher education.

### Statement of the Problem

The integration of information and communication technology into higher education has continued to reshape teaching and learning across the globe. In recent years, blended learning has emerged as one of the most effective pedagogical approaches for improving instructional delivery, enhancing learner engagement, promoting flexibility, and supporting student-centred learning. Consequently, universities globally have increasingly adopted blended learning as part of broader efforts toward digital transformation and educational modernization (Garrison & Vaughan, 2008; Graham, 2013).

Despite the growing global acceptance of blended learning, the level of preparedness for its adoption in many developing countries, including Nigeria, remained uncertain prior to the COVID-19 pandemic. Before 2020, many Nigerian universities still relied heavily on conventional face-to-face teaching methods, with limited integration of

technology into instructional practices. Although discussions regarding e-learning and blended learning were gradually increasing within higher education institutions, implementation remained relatively slow due to infrastructural, institutional, technological, and human resource challenges (Amandu et al., 2013).

One of the major determinants of successful blended learning implementation is the lecturer. Lecturers occupy a central position in the teaching-learning process and are directly responsible for instructional planning, course delivery, learner engagement, assessment, and the integration of educational technologies into teaching practices. As a result, lecturers' awareness, knowledge, competence, and perceptions toward blended learning significantly influence the extent to which such innovations can be successfully adopted and sustained within higher education institutions (Davis, 1989).

However, before the COVID-19 pandemic, there appeared to be uncertainties regarding the extent to which lecturers in Nigerian universities, particularly within medical and health sciences education, were aware of blended learning, understood its pedagogical principles, or possessed positive perceptions toward its adoption. In many institutions, educational technology initiatives focused primarily on infrastructural development, while comparatively less attention was given to understanding lecturers' readiness and perceptions regarding digital instructional approaches.

Furthermore, although several studies have examined blended learning adoption after the COVID-19 pandemic, relatively few studies provide empirical evidence regarding lecturers' perceptions and readiness before the pandemic-driven digital transformation of higher education. This has created a significant gap in the literature because it is difficult to determine whether universities and lecturers were already positioned for digital transformation before the pandemic or whether the rapid shift to online and blended learning occurred primarily as an emergency response to educational disruptions caused by COVID-19.

The COVID-19 pandemic exposed major weaknesses within educational systems globally, particularly in developing countries where many institutions struggled to transition effectively to online and blended learning environments. In Nigeria, the pandemic highlighted issues such as inadequate digital preparedness, insufficient lecturer training, poor technological infrastructure, and limited institutional readiness for technology-enhanced learning. These challenges underscored the importance of understanding the pre-pandemic state of lecturers' awareness, knowledge, and perceptions regarding blended learning.

Within medical education, the situation becomes even more critical because the training of healthcare professionals requires effective integration of theoretical instruction, practical demonstrations, laboratory experiences, clinical reasoning, and continuous learning activities. Blended learning therefore holds considerable potential for improving instructional quality in medical and health sciences education. However, successful implementation depends largely on lecturers' readiness and willingness to adopt such instructional approaches.

At the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt, there was limited empirical evidence regarding lecturers' awareness, knowledge, perceptions, and readiness toward blended learning prior to the COVID-19 pandemic. Without such evidence, it becomes difficult to understand the baseline state of digital preparedness within the faculty or to evaluate how lecturers may have responded to subsequent digital transformation initiatives.

It is against this background that this study seeks to investigate pre-pandemic lecturers' perception and readiness for blended learning in medical education within the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt, Nigeria. Specifically, the study aims to provide baseline evidence regarding lecturers' awareness, knowledge, and perceptions of blended learning before the COVID-19 pandemic and to examine the implications of these findings for digital

transformation in Nigerian universities.

## Aim and Objectives of the Study

### Aim of the Study

The aim of this study was to investigate pre-pandemic lecturers' perception and readiness for blended learning in medical education within the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt, Nigeria, with a view to providing baseline evidence for digital transformation in Nigerian universities.

### Objectives of the Study

The specific objectives of the study were to:

1. determine the level of awareness of blended learning among lecturers in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt;
2. identify the major sources of awareness of blended learning among lecturers in the Faculty of Basic Medical Sciences;
3. assess lecturers' knowledge of blended learning concepts and instructional integration in the Faculty of Basic Medical Sciences;
4. examine lecturers' perception of the usefulness of blended learning in medical education;
5. determine lecturers' perception of the ease of use of blended learning in instructional delivery;
6. examine the influence of gender on lecturers' perception of blended learning in the Faculty of Basic Medical Sciences;
7. determine the influence of age on lecturers' perception of blended learning in the Faculty of Basic Medical Sciences;
8. investigate the influence of academic rank on lecturers' knowledge of blended learning in the Faculty of Basic Medical Sciences; and
9. determine the relationship between awareness of blended learning and lecturers' perception of blended learning in the Faculty of Basic Medical Sciences.

## Research Questions

The following research questions guided the study:

1. What is the level of awareness of blended learning among lecturers in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt?
2. What are the major sources of awareness of blended learning among lecturers in the Faculty of Basic Medical Sciences?
3. What is the level of lecturers' knowledge of blended learning concepts and instructional integration in the Faculty of Basic Medical Sciences?
4. What are lecturers' perceptions regarding the usefulness of blended learning in medical education?
5. What are lecturers' perceptions regarding the ease of use of blended learning in instructional delivery?
6. Is there any relationship between gender and lecturers' perception of blended learning in the Faculty of Basic Medical Sciences?
7. Is there any relationship between age and lecturers' perception of blended learning in the Faculty of Basic Medical Sciences?
8. Is there any relationship between academic rank and lecturers' knowledge of blended learning in the Faculty of Basic Medical Sciences?
9. Is there any relationship between awareness of blended learning and lecturers' perception of blended learning in the Faculty of Basic Medical Sciences?

## Research Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

1.  $H_{01}$ : There is no significant relationship between gender and lecturers' perception of blended learning in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt.
2.  $H_{02}$ : There is no significant relationship between age and lecturers' perception of blended learning in the Faculty of Basic

Medical Sciences, College of Health Sciences, University of Port Harcourt.

3. Ho<sub>3</sub>: There is no significant relationship between academic rank and lecturers' knowledge of blended learning in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt.
4. Ho<sub>4</sub>: There is no significant relationship between awareness of blended learning and lecturers' perception of blended learning in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt.

### Significance of the Study

This study is significant in several ways, particularly within the context of digital transformation, blended learning adoption, and medical education in Nigerian universities. The findings of the study are expected to provide valuable baseline evidence regarding lecturers' awareness, knowledge, perceptions, and readiness for blended learning prior to the COVID-19 pandemic. As such, the study contributes to the growing body of literature on educational technology integration in higher education, especially within developing countries.

The study is expected to be beneficial to university administrators and educational policymakers because it provides empirical evidence regarding the preparedness of lecturers for blended learning before the pandemic-driven shift toward digital education. The findings may assist institutional managers in designing policies and strategic plans aimed at strengthening digital teaching and learning within universities. In addition, the study may guide university management in identifying existing gaps in lecturers' technological competence and professional development needs.

The findings of this study may also be useful to lecturers and educators within medical and health sciences education. By examining lecturers' perceptions and readiness toward blended learning, the study may help educators understand the importance of integrating technology into instructional delivery. Furthermore, the study may

encourage lecturers to improve their digital competence, instructional flexibility, and adoption of innovative teaching strategies capable of enhancing students' learning experiences.

The study is equally significant to curriculum planners and instructional designers because it provides insight into the factors influencing the adoption and implementation of blended learning in higher education. The findings may therefore support the development of more effective technology-enhanced curricula, digital instructional frameworks, and blended learning models suitable for medical education and other professional programmes.

Students in higher education institutions may also benefit indirectly from the findings of this study. Improved lecturer preparedness and positive perceptions toward blended learning may contribute to more engaging, flexible, learner-centred, and technologically enriched educational experiences. Such improvements may ultimately enhance students' academic performance, critical thinking abilities, independent learning skills, and access to educational resources.

Furthermore, the study is significant because it provides historical and baseline evidence regarding the state of blended learning awareness and readiness before the COVID-19 pandemic. In the post-pandemic era, where digital transformation has become central to higher education globally, this study offers important insight into the pre-pandemic conditions that existed within Nigerian universities. Consequently, the study may serve as a reference point for future comparative studies examining changes in lecturers' perceptions, readiness, and technology adoption after the pandemic.

The study is also expected to contribute to scholarly literature in the fields of educational technology, higher education, medical education, and digital pedagogy. Researchers and scholars interested in blended learning, technology acceptance, and digital transformation in higher education may find the findings useful for further studies, theoretical advancement, and empirical comparisons.

Finally, the study may stimulate further research on blended learning implementation, digital readiness,

instructional technology adoption, and technology-enhanced teaching practices in Nigerian universities and other developing countries.

### Scope/Delimitation of the Study

This study focused on pre-pandemic lecturers' perception and readiness for blended learning in medical education within the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt, Nigeria. The study specifically examined lecturers' awareness of blended learning, sources of awareness, knowledge of blended learning concepts, perceived usefulness of blended learning, and perceived ease of use of blended learning in instructional delivery.

The study was delimited to lecturers within the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt. The faculty comprises departments involved in the foundational training of medical and health sciences students, including disciplines such as anatomy, physiology, biochemistry, pharmacology, pathology, and related medical sciences. Only lecturers actively teaching within the faculty at the time of the study were included as respondents.

Geographically, the study was restricted to the College of Health Sciences, University of Port Harcourt, located in Rivers State, Nigeria. The findings of the study are therefore limited to this institution and may not be generalized to all universities in Nigeria without caution.

The study was also delimited to selected demographic and academic variables such as gender, age, and academic rank as factors that could influence lecturers' perception and knowledge of blended learning. Other variables such as years of teaching experience, computer literacy level, departmental differences, institutional funding, and technological infrastructure were not extensively investigated within the scope of this study.

In addition, the study was limited to the use of questionnaire as the primary instrument for data collection. The responses obtained from the lecturers were analyzed using descriptive and inferential

statistical methods in order to address the research questions and test the hypotheses formulated for the study.

Finally, the study focused on the pre-pandemic period prior to the widespread educational disruptions caused by the COVID-19 pandemic. Consequently, the findings provide baseline evidence regarding lecturers' awareness, perceptions, and readiness for blended learning before the accelerated digital transformation that occurred during and after the pandemic.

### Operational Definition of Terms

#### Pre-Pandemic

Pre-pandemic refers to the era when teaching and learning were predominantly conducted through face-to-face methods prior to the adoption of emergency digital learning measures after the COVID-19 period.

#### Lecturers

Lecturers are academic staff members involved in teaching, training, mentoring, and assessing students in medical-related disciplines within Nigerian universities. They include educators in medicine, nursing, allied health sciences, and other medical education programmes.

#### Perception

Perception refers to lecturers' beliefs, opinions, attitudes, understanding, and interpretations regarding blended learning in medical education. It encompasses how lecturers view the usefulness, effectiveness, challenges, and suitability of blended learning approaches.

#### Readiness

Readiness refers to the degree to which lecturers possess the willingness, preparedness, competence, confidence, and access to resources required for the adoption and implementation of blended learning in

medical education.

### **Blended Learning**

Blended learning refers to an instructional approach that combines traditional face-to-face classroom teaching with digital or online learning methods to facilitate teaching and learning activities in medical education.

### **Medical Education**

Medical education refers to the formal teaching and training processes designed for students in medicine and health-related disciplines aimed at developing professional knowledge, clinical competence, and healthcare skills.

### **Baseline Study**

Baseline study refers to an initial investigation conducted to establish the existing status, conditions, perceptions, and readiness levels of lecturers before the implementation or expansion of digital transformation initiatives in universities.

### **Digital Transformation**

Digital transformation refers to the integration and application of digital technologies into teaching, learning, administration, and academic practices in universities with the aim of improving educational delivery, accessibility, efficiency, and innovation.

### **Nigerian Universities**

Nigerian universities refer to accredited tertiary institutions in Nigeria offering undergraduate and postgraduate education, including medical and health-related programmes, where the study is conducted.

### **Literature Review**

This section reviews relevant literature related to pre-pandemic lecturers' perception and readiness for blended learning in medical education. The review is organized under the following subheadings:

conceptual review, theoretical review, empirical review, and summary of literature reviewed.

The conceptual review examines the major concepts associated with the study, including blended learning, lecturers' perception, readiness for blended learning, digital transformation in higher education, and blended learning in medical education. The theoretical review discusses relevant theories underpinning the study, particularly theories relating to technology acceptance, innovation adoption, and instructional technology integration. The empirical review evaluates previous studies conducted by different researchers on blended learning awareness, perception, readiness, and adoption within higher education institutions.

The review of related literature is necessary because it provides a foundation for understanding the existing body of knowledge concerning blended learning and digital transformation in higher education. It also helps to identify areas that have been adequately studied, areas of inconsistency in previous findings, and gaps in knowledge that necessitated the present study.

Furthermore, considering the increasing relevance of blended learning in the post-COVID-19 educational landscape, the literature review provides important insight into the pre-pandemic state of lecturers' awareness, knowledge, and readiness for blended learning within Nigerian universities, particularly in medical education. The chapter therefore establishes the scholarly and conceptual basis upon which this study is anchored.

### **Conceptual Review**

#### **Concept of Blended Learning**

Blended learning has emerged as one of the most significant innovations in contemporary higher education due to the rapid advancement of information and communication technology (ICT). The increasing integration of digital technologies into educational systems has transformed traditional teaching and learning methods and has led to the development of more flexible, learner-centred, and technology-driven instructional approaches. Among

these innovations, blended learning has gained global recognition as an effective pedagogical strategy capable of combining the strengths of face-to-face instruction with the advantages of online learning environments.

The concept of blended learning has been defined differently by various scholars based on instructional perspectives, technological integration, and pedagogical approaches. According to Garrison and Vaughan (2008), blended learning refers to the thoughtful integration of traditional classroom instruction with online learning experiences in ways that enhance teaching effectiveness and educational outcomes. Similarly, Graham (2013) defined blended learning as the combination of face-to-face instructional methods with computer-mediated instructional technologies.

Blended learning is therefore not merely the use of technology in teaching; rather, it involves the strategic integration of digital learning tools with classroom interaction to create a more effective learning experience. The approach seeks to maximize the benefits of both physical classroom engagement and online educational opportunities. Traditional face-to-face teaching allows direct interaction, immediate feedback, classroom discussions, and practical demonstrations, while online learning promotes flexibility, accessibility, independent learning, and continuous access to instructional resources (Means et al., 2013).

The development of blended learning has been influenced largely by the growth of internet technologies, increasing student enrolment, demand for flexible learning opportunities, and institutional efforts to modernize teaching and learning processes. Universities across the world have increasingly adopted blended learning because of its potential to improve instructional quality, learner participation, collaborative learning, and educational accessibility (Porter et al., 2016).

Blended learning may involve different forms of instructional integration depending on institutional goals, course requirements, and technological infrastructure. Some blended learning models include the rotation model, flex model, enriched virtual model, and face-to-face driver model (Horn

& Staker, 2015). In higher education, blended learning commonly involves classroom lectures supplemented with online discussions, digital learning materials, video lectures, virtual simulations, electronic assessments, and Learning Management Systems (LMS).

In medical education, blended learning has become increasingly important because healthcare training requires both theoretical understanding and practical competence. Medical students must acquire scientific knowledge, clinical reasoning skills, laboratory competencies, and professional decision-making abilities. Blended learning provides opportunities for integrating classroom instruction with virtual demonstrations, simulation-based learning, online tutorials, multimedia resources, and collaborative learning platforms (Rowe et al., 2012). Consequently, blended learning has become a valuable strategy for improving medical and health sciences education globally.

Several benefits have been associated with blended learning in higher education. Studies have shown that blended learning improves teaching effectiveness, increases student engagement, supports self-directed learning, promotes flexibility, and enhances access to learning materials (Liu et al., 2016). It also encourages active learning, collaborative learning, and continuous communication between lecturers and students. Furthermore, blended learning allows learners to study at their own pace while still maintaining opportunities for classroom interaction and instructor guidance.

Despite these advantages, the successful implementation of blended learning depends on several factors, including institutional support, technological infrastructure, internet accessibility, digital competence, instructional design, and lecturers' attitudes toward technology integration. In many developing countries, including Nigeria, challenges such as inadequate electricity supply, poor internet connectivity, insufficient technological facilities, and limited digital literacy among educators have historically constrained the effective adoption of blended learning (Amandu et al., 2013).

### Concept of Lecturers' Perception

Perception refers to the way individuals interpret, understand, evaluate, and respond to particular ideas, experiences, or phenomena. Within educational technology research, lecturers' perception refers to lecturers' attitudes, beliefs, opinions, feelings, and understanding regarding the adoption and use of technological innovations in teaching and learning.

Lecturers' perception plays a critical role in the adoption and implementation of blended learning because educators are central to instructional delivery and technology integration within higher education institutions. According to Davis (1989), users' perceptions regarding the usefulness and ease of use of a technology significantly influence their willingness to adopt and utilize such technology. Positive perceptions toward blended learning may encourage lecturers to integrate digital instructional methods into teaching practices, whereas negative perceptions may hinder adoption.

Perception toward blended learning may be influenced by several factors, including age, gender, academic rank, teaching experience, technological competence, institutional support, and previous exposure to educational technologies (Venkatesh et al., 2003). Lecturers who perceive blended learning as beneficial, flexible, and easy to use are more likely to adopt it effectively within instructional settings.

In higher education, lecturers' perception toward blended learning often determines the extent to which technology-enhanced teaching methods are successfully implemented. Positive perception may encourage innovation, instructional creativity, and professional development, while negative perception may lead to resistance, anxiety, and low adoption rates. Consequently, understanding lecturers' perception is essential for institutions seeking to implement sustainable blended learning programmes.

### Concept of Readiness for Blended Learning

Readiness for blended learning refers to the level of preparedness, willingness, competence, and ability of lecturers or institutions to adopt and effectively

implement blended learning approaches. Readiness encompasses technological readiness, pedagogical readiness, psychological readiness, and organizational readiness.

Technological readiness involves access to digital tools, internet facilities, computer systems, and educational technologies required for blended learning implementation. Pedagogical readiness relates to lecturers' instructional competence, course design abilities, online facilitation skills, and understanding of blended learning strategies. Psychological readiness involves lecturers' confidence, motivation, and willingness to use technology for instructional purposes, while organizational readiness relates to institutional policies, training opportunities, administrative support, and infrastructural availability.

Studies have shown that readiness is one of the strongest predictors of successful blended learning implementation in higher education institutions (Hung et al., 2010). Lecturers who possess adequate technological competence and positive attitudes toward technology are more likely to demonstrate higher readiness for blended learning adoption.

Before the COVID-19 pandemic, many universities in developing countries had limited readiness for large-scale digital learning implementation. The pandemic later exposed weaknesses in institutional preparedness and highlighted the importance of digital readiness in sustaining educational activities during emergencies (Dhawan, 2020). Consequently, assessing lecturers' readiness before the pandemic provides valuable baseline evidence regarding institutional preparedness for digital transformation.

### Concept of Digital Transformation in Higher Education

Digital transformation refers to the integration of digital technologies into educational systems in ways that fundamentally improve teaching, learning, administration, communication, and institutional operations. In higher education, digital transformation involves the adoption of technological innovations aimed at improving educational accessibility, instructional quality, and

institutional efficiency.

The concept of digital transformation extends beyond merely introducing technology into classrooms. It involves systematic changes in institutional culture, teaching practices, curriculum design, communication systems, and administrative processes. Digital transformation in universities may include online learning systems, virtual classrooms, electronic libraries, digital assessment platforms, learning analytics, and cloud-based educational services.

The COVID-19 pandemic accelerated digital transformation globally because universities were compelled to transition rapidly from traditional face-to-face teaching to online and blended learning environments. Institutions that previously had limited digital preparedness experienced major challenges during this transition. Consequently, pre-pandemic studies on lecturers' awareness and readiness for blended learning have become important sources of baseline evidence for understanding institutional preparedness before the global digital shift.

In Nigeria, digital transformation in higher education has been constrained by challenges such as inadequate funding, unstable electricity supply, poor internet infrastructure, limited technological facilities, and insufficient staff training. Nevertheless, increasing internet penetration and growing recognition of technology-enhanced learning continue to drive gradual digital transformation within Nigerian universities.

### Concept of Blended Learning in Medical Education

Medical education involves the training of students in healthcare and medical sciences disciplines such as anatomy, physiology, biochemistry, pathology, pharmacology, nursing, medicine, and allied health sciences. The nature of medical education requires the integration of theoretical instruction, laboratory demonstrations, practical experiences, and clinical training.

Blended learning has become increasingly important

in medical education because it supports flexible and interactive learning experiences capable of enhancing students' academic and professional competence. Through blended learning, medical students can access online lectures, virtual laboratories, multimedia demonstrations, simulation-based learning activities, online discussions, and electronic learning resources while still participating in physical classroom and clinical instruction.

Research has shown that blended learning improves knowledge retention, critical thinking, clinical reasoning, and student engagement in medical education (Liu et al., 2016). It also allows students to revisit instructional materials repeatedly, thereby supporting self-paced and continuous learning.

Instructors in medical education play a critical role in the successful implementation of blended learning because they are responsible for integrating digital tools into practical and theoretical instruction. Consequently, lecturers' awareness, knowledge, perceptions, and readiness significantly influence the effectiveness of blended learning implementation within medical and health sciences education.

### Theoretical Review

The theoretical review of this study focuses on theories that explain technology acceptance, innovation adoption, and the integration of educational technologies into teaching and learning processes. Since this study investigates lecturers' perception and readiness for blended learning in medical education, theories relating to users' acceptance of technology and behavioural intention toward technological innovations are highly relevant. The study is anchored primarily on the Technology Acceptance Model (TAM) and supported by the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Diffusion of Innovation Theory (DOI). These theories provide a framework for understanding how lecturers perceive, accept, and adopt blended learning within higher education environments.

### Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was developed by Fred Davis in 1989 as an adaptation of the Theory of Reasoned Action (TRA). The model was specifically designed to explain users' acceptance and adoption of information technology systems. TAM is one of the most widely used theoretical frameworks in educational technology and information systems research because of its simplicity, predictive ability, and applicability across different technological contexts.

According to Davis (1989), users' acceptance of a technological system is primarily determined by two major constructs:

1. Perceived usefulness; and
2. Perceived ease of use.

### Perceived Usefulness

Perceived usefulness refers to the degree to which an individual believes that using a particular technology will improve job performance or productivity. In the context of this study, perceived usefulness refers to lecturers' beliefs that blended learning can improve instructional delivery, enhance student engagement, promote flexibility, and improve teaching effectiveness in medical education.

When lecturers perceive blended learning as useful, they are more likely to adopt and integrate it into teaching practices. Several studies have shown that lecturers who believe educational technologies improve instructional outcomes generally demonstrate positive attitudes toward technology integration (Porter et al., 2016).

### Perceived Ease of Use

Perceived ease of use refers to the degree to which an individual believes that using a particular technology will be free from difficulty or effort. In relation to this study, it refers to lecturers' beliefs regarding the simplicity, usability, and convenience of blended learning technologies and instructional methods.

Lecturers who perceive blended learning platforms

and technologies as easy to use are more likely to demonstrate readiness and willingness to adopt them. Conversely, perceptions of technological complexity may lead to resistance or low adoption rates.

### Relevance of TAM to the Study

The Technology Acceptance Model is highly relevant to this study because it directly explains lecturers' perceptions regarding blended learning. The concepts of perceived usefulness and perceived ease of use align with the objectives of this study, which examine lecturers' perceptions of the usefulness and ease of use of blended learning in medical education.

The findings of the present study, which revealed that lecturers generally demonstrated positive perceptions regarding the usefulness and ease of use of blended learning, further support the assumptions of TAM. The model therefore provides an appropriate theoretical basis for understanding lecturers' readiness and behavioural intention toward blended learning adoption before the COVID-19 pandemic.

Despite its strengths, TAM has been criticized for focusing mainly on individual perceptions while paying less attention to organizational, social, and infrastructural factors that may influence technology adoption. Nevertheless, TAM remains highly valuable because of its strong explanatory power regarding users' acceptance of technological innovations.

### Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) was developed by Venkatesh et al. (2003) in an effort to unify several previous theories of technology acceptance and behavioural intention. UTAUT integrates concepts from multiple models, including the Technology Acceptance Model, Theory of Reasoned Action, Diffusion of Innovation Theory, and Social Cognitive Theory.

According to UTAUT, four major constructs

determine users' intention to adopt and use technology:

1. Performance expectancy;
2. Effort expectancy;
3. Social influence; and
4. Facilitating conditions.

### Performance Expectancy

Performance expectancy refers to the extent to which individuals believe that using a technology will help them achieve gains in job performance. Within the context of this study, lecturers who believe blended learning improves teaching effectiveness, instructional flexibility, and student learning outcomes are more likely to adopt it.

### Effort Expectancy

Effort expectancy refers to the degree of ease associated with using a technological system. This concept is closely related to perceived ease of use in TAM. Lecturers who perceive blended learning technologies as easy to use are likely to demonstrate positive attitudes toward adoption.

### Social Influence

Social influence refers to the extent to which individuals perceive that important others believe they should use a particular technology. In educational settings, colleagues, institutional leaders, professional associations, and academic communities may influence lecturers' decisions regarding blended learning adoption.

### Facilitating Conditions

Facilitating conditions refer to the availability of institutional and technical support necessary for technology use. These include internet access, electricity supply, technological infrastructure, technical assistance, and professional training opportunities.

### Relevance of UTAUT to the Study

UTAUT is relevant to this study because it expands understanding beyond individual perceptions to include social and organizational influences on blended learning adoption. The theory helps explain how institutional support, academic rank, age, gender, and awareness may influence lecturers' readiness and perceptions regarding blended learning.

The present study revealed that demographic variables such as age, gender, and academic rank significantly influenced lecturers' perceptions and knowledge of blended learning. These findings align with UTAUT, which recognizes that behavioural intention and technology adoption may vary according to demographic and contextual factors.

Furthermore, the emphasis on facilitating conditions within UTAUT is particularly relevant to Nigerian universities, where infrastructural challenges often affect technology integration in education.

### Diffusion of Innovation Theory (DOI)

The Diffusion of Innovation Theory was developed by Everett Rogers in 1962 and later revised in subsequent editions. The theory explains how new ideas, innovations, and technologies spread within social systems over time.

According to Rogers (2003), diffusion refers to the process through which an innovation is communicated through certain channels among members of a social system over time. The theory identifies five major characteristics of innovations that influence adoption:

1. Relative advantage;
2. Compatibility;
3. Complexity;
4. Trialability; and
5. Observability.

### Relative Advantage

Relative advantage refers to the degree to which an

innovation is perceived as better than the idea or method it replaces. Lecturers are more likely to adopt blended learning if they perceive it as more effective than traditional instructional methods.

### **Compatibility**

Compatibility refers to the consistency of an innovation with users' existing values, experiences, and needs. Blended learning adoption may increase if lecturers perceive it as compatible with their instructional goals and teaching styles.

### **Complexity**

Complexity refers to the extent to which an innovation is perceived as difficult to understand or use. Technologies perceived as complex often experience lower adoption rates.

### **Trialability**

Trialability refers to the extent to which an innovation can be experimented with before full adoption. Opportunities for lecturers to experiment with blended learning may increase acceptance and confidence.

### **Observability**

Observability refers to the visibility of the results of an innovation to others. Positive outcomes associated with blended learning may encourage wider adoption among lecturers.

### **Relevance of DOI to the Study**

The Diffusion of Innovation Theory is relevant to this study because blended learning represents an instructional innovation within higher education. The theory helps explain how awareness, exposure, and social interaction influence lecturers' adoption of blended learning.

The findings of the present study revealed that the internet, seminars, workshops, and professional interactions served as major sources of awareness of blended learning among lecturers. This aligns with DOI, which emphasizes communication channels and social systems in the diffusion process.

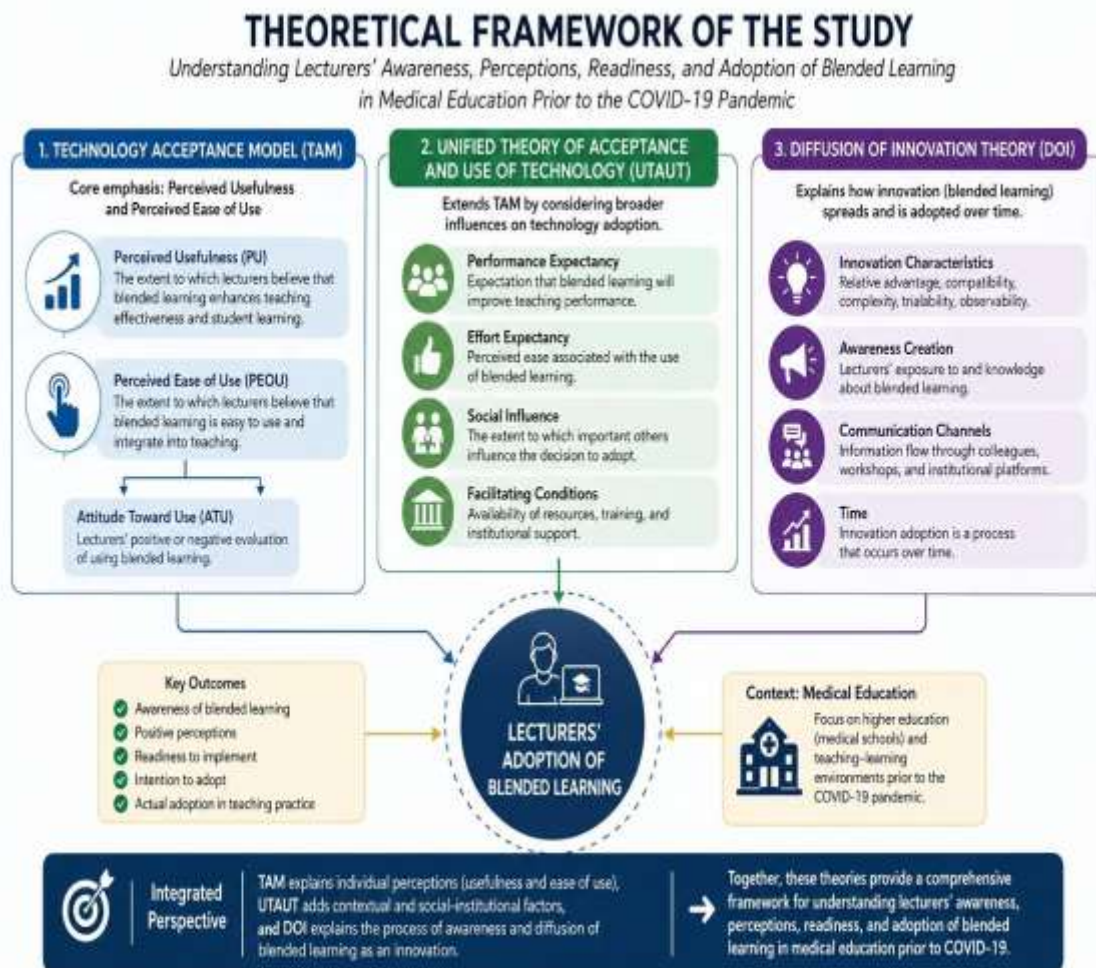
The theory also helps explain variations in lecturers' readiness and perceptions based on academic rank, age, and previous exposure to educational technologies.

### **Theoretical Framework of the Study**

This study is primarily anchored on the Technology Acceptance Model (TAM) because of its strong emphasis on perceived usefulness and perceived ease of use, which directly relate to lecturers' perceptions of blended learning. However, the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Diffusion of Innovation Theory (DOI) complement TAM by providing broader explanations regarding demographic influences, institutional support, social interaction, awareness creation, and innovation diffusion.

Collectively, these theories provide a comprehensive framework for understanding lecturers' awareness, perceptions, readiness, and adoption of blended learning within medical education prior to the COVID-19 pandemic.

Figure 2.1: Theoretical Framework



### Empirical Review

Several empirical studies have been conducted globally and within Nigeria on blended learning, technology acceptance, lecturers' perceptions, and digital readiness in higher education. The increasing adoption of blended learning in universities has generated substantial research interest, particularly regarding educators' awareness, competence, attitudes, and preparedness toward technology-enhanced learning. This section reviews relevant empirical studies related to blended learning awareness, perception, readiness, and adoption among lecturers in higher education, with particular emphasis on medical education and developing countries.

### Empirical Studies on Awareness of Blended Learning

Studies conducted across different higher education institutions have shown increasing awareness of blended learning among lecturers and educators. However, the level of awareness often varies depending on technological exposure, institutional support, and access to professional development opportunities.

Oye, Salleh, and Iahad (2012) conducted a study on e-learning methodologies and awareness among university lecturers in higher education institutions in Nigeria and Malaysia. The researchers reported that internet exposure, institutional workshops, and

professional interactions significantly contributed to lecturers' awareness of technology-enhanced learning systems. The study further revealed that lecturers who had greater access to internet resources demonstrated higher awareness and more positive attitudes toward digital instructional methods.

Similarly, Porter, Graham, Spring, and Welch (2014) examined blended learning adoption in higher education institutions and found that institutional exposure, faculty training programmes, conferences, and educational technology initiatives significantly increased lecturers' awareness of blended learning practices. The study concluded that awareness constitutes a critical first step toward successful blended learning implementation.

Furthermore, Rogers (2003), in the Diffusion of Innovation Theory, emphasized that awareness is the first stage in the adoption of innovations and technological practices. According to the theory, exposure to communication channels and professional interactions enhances awareness and facilitates eventual technology adoption.

The findings of these studies are consistent with the present study, which revealed that lecturers in the Faculty of Basic Medical Sciences demonstrated high awareness of blended learning, with internet platforms and workshops serving as the major sources of awareness.

### **Empirical Studies on Knowledge and Competence in Blended Learning**

Awareness alone may not guarantee successful blended learning implementation unless lecturers possess adequate knowledge and competence regarding instructional technology integration. Consequently, several studies have examined lecturers' knowledge of blended learning concepts and digital instructional practices.

McCutcheon, Lohan, Traynor, and Martin (2015) investigated the readiness of nursing educators for blended learning implementation in higher education institutions in the United Kingdom. The study revealed that although educators demonstrated positive attitudes toward blended learning, many

lacked adequate competence in online instructional design, digital assessment, and virtual learning facilitation. The researchers concluded that continuous professional training was necessary to improve lecturers' readiness for blended learning adoption.

Similarly, Adarkwah (2021) examined digital readiness among university lecturers during the COVID-19 pandemic and found that many educators experienced difficulties adapting to online and blended teaching because of limited prior technological competence. The study emphasized the importance of pre-pandemic training and institutional preparedness for successful digital transformation.

In another study, Hung et al. (2010) developed and validated an online learning readiness scale among university students and educators. Their findings showed that technological competence, self-directed learning ability, and confidence in technology use were strong predictors of readiness for online and blended learning environments.

Within Nigeria, Eze, Chinedu-Eze, and Bello (2018) examined factors influencing e-learning adoption among university lecturers and reported that inadequate technological competence and insufficient institutional support limited effective utilization of blended learning systems. The study identified training deficiencies as major barriers to instructional technology integration.

Likewise, Yusuf and Balogun (2011) found that although many Nigerian university lecturers possessed basic awareness of ICT tools, only a moderate proportion demonstrated adequate competence in integrating technology into instructional activities. The researchers observed that lecturers often required additional training in digital pedagogy, course management systems, and online instructional methods.

These findings align with the present study, which revealed that lecturers demonstrated only moderate knowledge of blended learning concepts, particularly in areas such as course design, instructional integration, and online assessment practices.

## Empirical Studies on Lecturers' Perception of Blended Learning

Lecturers' perception is widely recognized as one of the most important determinants of blended learning adoption and technology acceptance within higher education institutions. Several studies have therefore investigated educators' attitudes, beliefs, and perceptions regarding blended learning.

Davis (1989), through the Technology Acceptance Model, established that perceived usefulness and perceived ease of use significantly influence users' attitudes toward technology adoption. Subsequent studies within educational settings have consistently supported this position.

Means, Toyama, Murphy, Bakia, and Jones (2013) conducted a meta-analysis on online and blended learning in higher education and reported that educators generally perceived blended learning as beneficial for improving instructional flexibility, learner engagement, and educational accessibility. The researchers concluded that blended learning often produced better learning outcomes than traditional face-to-face instruction alone.

Similarly, Garrison and Vaughan (2008) reported that blended learning encourages collaborative learning, reflective thinking, and active student participation. Their study emphasized that lecturers who perceive blended learning positively are more likely to integrate digital instructional methods into classroom practice.

In South Africa, Rowe, Frantz, and Bozalek (2012) investigated blended learning in healthcare education and found that lecturers generally perceived blended learning as an effective instructional strategy capable of improving clinical teaching and learner interaction. However, concerns regarding technological challenges and workload were also identified.

Agbo (2015) examined lecturers' perceptions toward e-learning in tertiary institutions and found that most educators demonstrated positive attitudes toward technology-enhanced learning despite infrastructural limitations. The study reported that lecturers believed blended learning could improve instructional quality and support flexible learning

opportunities.

These findings are consistent with the present study, which revealed that lecturers generally demonstrated positive perceptions regarding the usefulness and ease of use of blended learning.

## Empirical Studies on Demographic Variables and Technology Acceptance

Several empirical studies have examined the influence of demographic variables such as age, gender, academic rank, and teaching experience on lecturers' perception and adoption of blended learning technologies.

Venkatesh, Morris, Davis, and Davis (2003), in developing the Unified Theory of Acceptance and Use of Technology (UTAUT), identified age and gender as important moderating variables influencing technology acceptance and usage behaviour. Their findings showed that younger individuals and those with greater technological exposure often demonstrate stronger behavioural intention toward technology adoption.

Morris and Venkatesh (2000) similarly reported that younger educators tend to adapt more easily to technological innovations because of greater familiarity with digital environments. Older educators, on the other hand, may experience more resistance or anxiety toward technology adoption.

In a study conducted in Malaysia, Tarhini, Hone, and Liu (2014) found that gender and technological experience significantly influenced lecturers' acceptance of e-learning systems. Female lecturers demonstrated more positive perceptions toward collaborative and interactive learning technologies, while academic experience influenced confidence in technology use.

Furthermore, Venkatesh et al. (2003) emphasized that facilitating conditions, experience, and demographic characteristics significantly affect users' readiness and acceptance of technological systems within organizations and educational institutions.

These findings correspond with the present study,

which revealed significant relationships between age, gender, academic rank, awareness, and lecturers' perception or knowledge of blended learning.

### **Empirical Studies on Blended Learning in Medical Education**

Blended learning has become increasingly relevant within medical and health sciences education because of the need for flexible, interactive, and clinically oriented instructional approaches.

Liu et al. (2016) conducted a systematic review and meta-analysis on blended learning in health professions education and found that blended learning significantly improved knowledge acquisition, clinical reasoning, and student performance compared to traditional instructional methods alone.

Similarly, Rowe et al. (2012) reported that blended learning supports reflective learning, collaborative interaction, and professional competence development among healthcare students.

George-Walker and Keeffe (2010) also observed that blended learning enhances flexibility in medical education by allowing students to combine classroom learning with self-directed online learning activities.

Within Africa, Subramanian (2017) found that blended learning improved student engagement and instructional effectiveness in healthcare training institutions. However, infrastructural limitations and inadequate staff training remained major implementation challenges.

In Nigeria, relatively fewer studies have specifically examined blended learning within medical education before the COVID-19 pandemic. Most available studies focus on general higher education or post-pandemic online learning experiences. This creates an important gap in the literature regarding pre-pandemic lecturers' perceptions and readiness for blended learning in Nigerian medical education.

The present study therefore contributes significantly to existing literature by providing baseline evidence

regarding lecturers' awareness, knowledge, perceptions, and readiness for blended learning within the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt, prior to the COVID-19 pandemic.

### **Summary of Literature Reviewed**

The literature reviewed in this study revealed that blended learning has emerged as one of the most important innovations in contemporary higher education due to the increasing integration of information and communication technology into teaching and learning processes. The conceptual review showed that blended learning combines traditional face-to-face instruction with online or technology-mediated learning activities in order to improve instructional effectiveness, flexibility, learner engagement, and educational accessibility. The review further established that blended learning has become increasingly relevant in medical education because of its capacity to support theoretical instruction, practical demonstrations, virtual simulations, collaborative learning, and self-directed learning.

The literature also revealed that lecturers' perception and readiness are critical determinants of successful blended learning implementation. Lecturers who perceive blended learning as useful and easy to use are more likely to adopt and integrate it into instructional delivery. In addition, readiness for blended learning was identified as involving technological competence, pedagogical preparedness, institutional support, and psychological willingness to utilize digital instructional approaches.

The theoretical review demonstrated that the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and Diffusion of Innovation Theory (DOI) provide strong explanations for lecturers' acceptance and adoption of blended learning technologies. The theories established that perceived usefulness, perceived ease of use, social influence, awareness, facilitating conditions, and demographic variables significantly influence technology

acceptance and instructional innovation adoption.

The empirical review revealed that several studies have been conducted globally and within Nigeria regarding blended learning awareness, lecturers' perception, readiness, and technology adoption in higher education. The studies reviewed generally reported increasing awareness of blended learning among university lecturers, positive perceptions regarding its usefulness, and recognition of its importance in improving instructional delivery. The literature further revealed that factors such as internet exposure, institutional support, professional training, age, gender, academic rank, and technological competence significantly influence lecturers' perception and readiness toward blended learning.

However, despite the growing body of literature on blended learning, several gaps were identified. First, many previous studies focused primarily on blended learning implementation after the COVID-19 pandemic, with limited attention given to the pre-pandemic state of lecturers' awareness, knowledge, and readiness for blended learning. Consequently, there remains inadequate baseline evidence regarding the preparedness of lecturers before the pandemic-driven digital transformation of higher education.

Secondly, most previous studies within Nigeria concentrated on general university education, e-learning adoption, or online learning practices without specifically examining blended learning within medical and health sciences education. Yet, medical education possesses unique instructional characteristics that require the integration of theoretical instruction, laboratory activities, demonstrations, and clinical learning experiences.

Thirdly, although several studies investigated lecturers' perception of blended learning, fewer studies comprehensively examined the combined influence of demographic variables such as gender, age, academic rank, and awareness on lecturers' perception and knowledge of blended learning within Nigerian universities.

Furthermore, many previous Nigerian studies emphasized infrastructural challenges and technological barriers without adequately

investigating lecturers' readiness and instructional preparedness before the COVID-19 pandemic. As a result, there is limited understanding of whether Nigerian universities and lecturers already possessed indicators of digital preparedness before emergency remote teaching became necessary during the pandemic period.

It was against these identified gaps that the present study was undertaken. This study therefore contributes to existing literature by providing pre-pandemic baseline evidence regarding lecturers' awareness, knowledge, perception, and readiness for blended learning within the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt, Nigeria. The study also contributes specifically to the literature on medical education, digital transformation, and blended learning adoption within Nigerian higher education institutions.

Finally, the study extends existing knowledge by examining the influence of demographic and academic variables on lecturers' perception and knowledge of blended learning, thereby providing important implications for educational policy, institutional preparedness, and sustainable digital transformation in Nigerian universities.

## Research Methodology

This section describes the methodology that was adopted for the study. It presents the research design, research setting, population of the study, sample and sampling technique, instrument for data collection, validity and reliability of the instrument, method of data collection, method of data analysis, and ethical considerations.

## Research Design

The study adopted a cross-sectional survey research design involving both descriptive and inferential statistical approaches. This design was considered appropriate because the study sought to obtain data from lecturers regarding their awareness, knowledge, perception, and readiness for blended learning within the Faculty of Basic Medical Sciences, College of

Health Sciences, University of Port Harcourt.

A cross-sectional survey research design involves the collection of data from a population at a single point in time for the purpose of describing existing conditions and examining relationships among variables. According to Nworgu (2015), survey research design is used for collecting data from a group of people in order to describe existing conditions, opinions, attitudes, behaviours, and characteristics of a population without manipulating any variables.

The adoption of the cross-sectional survey design was based on the fact that the study aimed to examine lecturers' perception and readiness for blended learning as they existed prior to the COVID-19 pandemic. The design enabled the researcher to systematically collect quantitative data relating to lecturers' awareness, sources of awareness, knowledge, perceived usefulness, perceived ease of use, and readiness toward blended learning.

In addition to describing the characteristics of the respondents, the study also examined relationships between selected demographic variables and lecturers' perception and knowledge of blended learning. Inferential statistical analysis was therefore incorporated through the use of Chi-square statistical tests to determine whether significant relationships existed between variables such as gender, age, academic rank, awareness, perception, and knowledge of blended learning.

The design was considered suitable because it accommodated both descriptive statistics, such as frequencies, percentages and mean scores and inferential statistics for hypothesis testing. Consequently, the cross-sectional survey research design provided an appropriate framework for generating baseline evidence on lecturers' perception and readiness for blended learning in medical education within the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt, Nigeria.

## Research Setting

The study was conducted in the Faculty of Basic

Medical Sciences, College of Health Sciences, University of Port Harcourt.

The University of Port Harcourt is one of the federal universities in Nigeria and is located in Choba, Obio/Akpor Local Government Area of Rivers State. The institution was established in 1975 and has grown into one of the leading universities in Nigeria, offering undergraduate and postgraduate programmes across several faculties and disciplines.

The College of Health Sciences of the University of Port Harcourt is responsible for the training of healthcare professionals in medicine and allied health sciences. Within the college, the Faculty of Basic Medical Sciences provides foundational medical education in disciplines such as anatomy, physiology, biochemistry, pharmacology, pathology, and related medical sciences.

The faculty was considered suitable for this study because blended learning and technology-enhanced instruction are increasingly important within medical and health sciences education due to the need for flexible learning, practical demonstrations, simulations, and continuous access to educational resources.

Additionally, the lecturers within the faculty possess varying academic ranks, teaching experiences, and levels of exposure to educational technologies, making the setting appropriate for investigating lecturers' awareness, perceptions, and readiness toward blended learning.

## Population of the Study

The population of the study comprised all lecturers in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt.

At the time of the study, the total population consisted of eighty-eight (88) lecturers across the departments within the faculty. These lecturers included Assistant Lecturers, Lecturer II, Lecturer I, Senior Lecturers, Associate Professors, and Professors actively involved in teaching and academic activities within the faculty.

The population was considered appropriate because

the lecturers were directly involved in instructional delivery and therefore possessed relevant information regarding blended learning awareness, knowledge, perception, and readiness.

### Sample and Sampling Technique

The sample size for the study was determined using the Taro Yamane formula for finite populations.

The Taro Yamane formula is expressed as:

$$n = \frac{N}{1 + N(e \times e)}$$

Where:

n = sample size

N = population size

e = level of precision (0.05)

Substituting the values:

Therefore, the sample size for the study consisted of seventy-two (72) lecturers.

A simple random sampling technique was used in selecting the respondents for the study. The simple random sampling technique gave all lecturers within the faculty equal opportunity of being selected, thereby reducing sampling bias and improving representativeness.

### 3.5 Instrument for Data Collection

The instrument used for data collection was a structured questionnaire developed by the researcher titled:

Lecturers' Perception of Blended Learning Questionnaire (LPBLQ)

The questionnaire was designed based on the objectives of the study and relevant literature on blended learning, technology acceptance, and educational technology integration.

The instrument consisted of two major Instrument

#### 1. Section A: Demographic Information

This section elicited information relating to respondents' demographic characteristics such as:

gender,  
age,  
academic rank,  
and other relevant background information.

#### 2. Section B: Blended Learning Variables

This section contained items relating to:  
awareness of blended learning,  
sources of awareness,  
knowledge of blended learning concepts,  
perceived usefulness of blended learning,  
perceived ease of use,  
and readiness for blended learning adoption.

The questionnaire items were structured using:  
dichotomous response formats (Yes/No),  
multiple response items,  
and a four-point Likert scale of:

Strongly Agree (SA),  
Agree (A),  
Disagree (D),  
Strongly Disagree (SD).

The Likert scale responses were weighted as follows:

Response Category	Weight
Strongly Agree (SA)	4
Agree (A)	3
Disagree (D)	2
Strongly Disagree (SD)	1

A criterion mean of 2.50 was used for decision making.

### Validity and Reliability of the Instrument

#### Validity of the Instrument

The questionnaire was subjected to face and content validity by experts in Educational Technology, Measurement and Evaluation, and Medical

Education within the University of Port Harcourt.

The experts examined the instrument to determine:

- clarity of items,
- relevance to the study objectives,
- adequacy of content coverage,
- appropriateness of language,

and suitability of the instrument for measuring lecturers' perception and readiness toward blended learning.

Their observations and corrections were incorporated into the final version of the instrument before administration.

### Reliability of the Instrument

The reliability of the instrument was determined through a pilot study conducted among lecturers outside the study population but with similar characteristics.

Data obtained from the pilot study were analyzed using Cronbach Alpha statistical method to determine the internal consistency of the instrument.

The reliability coefficient obtained was 0.82, indicating that the instrument possessed high reliability and was suitable for the study. According to research standards, a reliability coefficient of 0.70 and above is considered acceptable for social science research.

### Method of Data Collection

The researcher personally administered copies of the questionnaire to the respondents with the assistance of trained research assistants.

A total of seventy-two (72) copies of the questionnaire were distributed to lecturers within the Faculty of Basic Medical Sciences. Respondents were informed about the purpose of the study and assured of confidentiality and anonymity.

Out of the 72 questionnaires administered, fifty-six (56) valid copies were retrieved and used for

analysis, representing a response rate of 77.8%.

The direct administration method enabled the researcher to explain unclear items where necessary and ensured a relatively high retrieval rate.

### Method of Data Analysis

Data obtained from the respondents were coded and analyzed using the Statistical Package for Social Sciences (SPSS).

Descriptive statistical tools such as:

frequency counts,

percentages,

and mean scores

were used to answer the research questions.

Frequencies and percentages were used to analyze demographic variables, awareness levels, sources of awareness, and knowledge-related responses, while mean scores were used to analyze lecturers' perceptions regarding usefulness and ease of use of blended learning.

Inferential statistical analysis was conducted using the Chi-square ( $\chi^2$ ) statistical test to test the null hypotheses formulated for the study.

All hypotheses were tested at 0.05 level of significance.

Decision Rule:

Reject the null hypothesis if the p-value is less than 0.05;

Accept the null hypothesis if the p-value is greater than 0.05.

### Ethical Considerations

Ethical approval for the study was obtained from the appropriate authorities within the College of Health Sciences, University of Port Harcourt.

The respondents were adequately informed about the purpose of the study before participation.

Participation in the study was voluntary, and respondents were not forced to participate.

Confidentiality and anonymity were maintained throughout the study. Respondents were not required to provide names or personal identifiers on the questionnaire forms.

The researcher also ensured that the information obtained from respondents was used strictly for academic and research purposes. In addition, informed consent was obtained from all participants before administration of the questionnaire.

**Analysis, Presentation and Interpretation of Dara**

This section presents the analysis, presentation, and interpretation of data obtained from the respondents. A total of 72 questionnaires were administered, while 56 valid copies were retrieved and used for analysis, representing a response rate of 77.8%. Descriptive statistics such as frequencies, percentages and mean scores were used to answer the research questions, while Chi-square statistical analysis was used to test the hypotheses at 0.05 level of significance.

Table 4.1: Distribution of Respondents by Gender

Gender	Frequency	Percentage (%)
Male	34	60.7
Female	22	39.3
Total	56	100

Table 4.1 reveals that 34 respondents representing 60.7% were male, while 22 respondents representing 39.3% were female. This indicates that the majority of respondents were male lecturers.

Table 4.2: Distribution of Respondents by Age

Age Range	Frequency	Percentage (%)
20–30 years	6	10.7
31–40 years	18	32.1
41–50 years	20	35.7
51 years and above	12	21.5
Total	56	100

Table 4.2 shows that lecturers within the age bracket of 41–50 years constituted the highest proportion of respondents with 35.7%, followed by those within 31–40 years with 32.1%. This suggests that the faculty was largely populated by middle-aged academic staff.

Table 4.3: Distribution of Respondents by Academic Rank

Academic Rank	Frequency	Percentage (%)
Assistant Lecturer	5	8.9
Lecturer II	10	17.9

Lecturer I	12	21.4
Senior Lecturer	14	25.0
Associate Professor	8	14.3
Professor	7	12.5
Total	56	100

Table 4.3 indicates that Senior Lecturers constituted the highest proportion of respondents with 25.0%, followed by Lecturers I with 21.4%. This implies that respondents were fairly distributed across academic ranks.

Table 4.5: Awareness of Blended Learning Among Lecturers

Response	Frequency	Percentage (%)
Aware	50	89.3
Not Aware	6	10.7
Total	56	100

Table 4.5 reveals that the majority of lecturers, representing 89.3%, were aware of blended learning, while only 10.7% indicated lack of awareness. This suggests a high level of awareness among lecturers.

Table 4.6: Sources of Awareness of Blended Learning

Source of Awareness	Frequency	Percentage (%)
Internet/Online Platforms	24	42.9
Workshops/Seminars	18	32.1
Colleagues/Friends	8	14.3
Institutional Communication	4	7.1
Others	2	3.6
Total	56	100

Table 4.6 shows that the internet and online platforms constituted the major source of awareness of blended learning among lecturers with 42.9%. Workshops and seminars followed with 32.1%.

Table 4.7: Lecturers' Knowledge of Blended Learning Concepts

Knowledge Item	Yes	No
Understanding of LMS	30	26

Ability to design blended courses	22	34
Understanding online assessment	25	31
Knowledge of instructional integration	20	36

Table 4.7 reveals that although some lecturers demonstrated knowledge of blended learning concepts, the general level of knowledge was moderate, especially in blended course design and instructional integration.

Table 4.8: Perceived Usefulness of Blended Learning

Statement	SA	A	D	SD	Mean	Decision
Improves teaching effectiveness	24	20	8	4	3.14	Agree
Enhances student engagement	22	21	9	4	3.09	Agree
Promotes flexibility	28	18	6	4	3.25	Agree

Table 4.8 indicates that lecturers generally perceived blended learning as useful. The mean scores above the criterion mean of 2.50 support positive perceptions regarding usefulness.

Table 4.9: Perceived Ease of Use of Blended Learning

Statement	SA	A	D	SD	Mean	Decision
Easy to implement	18	22	10	6	2.93	Agree
Online platforms are easy to use	20	21	9	6	2.98	Agree
Can integrate technology effectively	17	23	10	6	2.91	Agree

Table 4.9 reveals that lecturers generally perceived blended learning as easy to use and implement, as all mean scores exceeded the criterion mean of 2.50.

Table 4.11: Chi-Square Analysis of Gender and Perception of Blended Learning

Variable	$\chi^2$	df	p-value	Decision
Gender vs Perception	4.26	1	0.039	Reject H0

Table 4.11 shows that there was a statistically significant relationship between gender and lecturers' perception of blended learning because the p-value of 0.039 was less than 0.05.

Table 4.12: Chi-Square Analysis of Age and Perception of Blended Learning

Variable	$\chi^2$	df	p-value	Decision
Age vs Perception	6.84	3	0.033	Reject H0

Table 4.12 reveals that there was a statistically significant relationship between age and lecturers' perception of blended learning since the p-value of 0.033 was less than 0.05.

Table 4.13: Chi-Square Analysis of Academic Rank and Knowledge of Blended Learning

Variable	$\chi^2$	df	p-value	Decision
Academic Rank vs Knowledge	9.12	5	0.028	Reject H0

Table 4.13 indicates that academic rank significantly influenced lecturers' knowledge of blended learning because the p-value of 0.028 was less than 0.05.

Table 4.14: Chi-Square Analysis of Awareness and Perception of Blended Learning

Variable	$\chi^2$	df	p-value	Decision
Awareness vs Perception	7.45	1	0.006	Reject H0

Table 4.14 shows that awareness significantly influenced lecturers' perception of blended learning because the p-value of 0.006 was less than 0.05.

## Discussion of Findings

The discussion of findings in this study was carried out in line with the objectives and hypotheses of the study. The findings were also discussed in relation to

previous empirical studies reviewed in Chapter Two and relevant theoretical frameworks underpinning the study.

Awareness of Blended Learning Among Lecturers

The findings of the study revealed that lecturers in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt demonstrated a high level of awareness of blended learning. This was evidenced by the fact that 89.3% of the respondents indicated that they were aware of blended learning, while only a small proportion of respondents reported lack of awareness.

This finding suggests that prior to the COVID-19 pandemic, lecturers within the faculty already possessed considerable exposure to blended learning concepts and technology-enhanced instructional practices. The high level of awareness observed may be attributed to increasing global technological advancement, internet accessibility, professional academic interactions, and growing discussions surrounding educational technology within higher education institutions.

The finding agrees with the empirical study conducted by Porter, Graham, Spring, and Welch (2014), who reported increasing awareness of blended learning among university lecturers due to institutional exposure and technological advancement within higher education systems. The finding also supports the Diffusion of Innovation Theory developed by Rogers (2003), which emphasizes that awareness is the first stage in the adoption of innovations and technological practices. According to the theory, exposure to communication channels and professional interactions enhances awareness and facilitates eventual technology adoption.

The implication of this finding is that lecturers within the Faculty of Basic Medical Sciences already possessed foundational awareness necessary for the adoption of blended learning even before the pandemic-driven digital transformation of higher education.

### Sources of Awareness of Blended Learning

The findings further revealed that the internet and online platforms constituted the major sources of awareness of blended learning among lecturers, followed by workshops and seminars. Other identified sources included colleagues, friends, and

institutional communication channels.

This finding indicates that digital exposure and professional development activities played important roles in creating awareness regarding blended learning among lecturers. The dominance of internet-based sources suggests that lecturers relied heavily on online information and digital communication platforms for academic and professional knowledge acquisition.

The finding corroborates the study conducted by Oye, Salleh, and Iahad (2012), who identified internet exposure and online technological interaction as major sources of awareness of educational technologies among university lecturers. The finding also agrees with Porter et al. (2014), who reported that institutional seminars, faculty workshops, and exposure to digital instructional resources significantly contributed to blended learning awareness in higher education institutions.

The finding further aligns with the assumptions of the Diffusion of Innovation Theory, which emphasizes the role of communication channels and social systems in spreading awareness of innovations within organizations and institutions.

The implication of this finding is that continuous professional training, internet accessibility, and institutional sensitization programmes may further strengthen lecturers' awareness and eventual adoption of blended learning practices.

### Lecturers' Knowledge of Blended Learning Concepts

The findings of the study revealed that although lecturers demonstrated awareness of blended learning, their knowledge and competence regarding blended learning concepts were only moderate. Specifically, fewer lecturers demonstrated adequate competence in blended course design, instructional integration, and online assessment practices.

This finding suggests that awareness of blended learning does not necessarily translate into adequate practical competence or instructional readiness. Although lecturers may have heard about blended learning, many may still lack sufficient pedagogical

and technical skills required for effective implementation.

The finding agrees with McCutcheon, Lohan, Traynor, and Martin (2015), who reported that many educators demonstrated positive attitudes toward blended learning but lacked adequate competence in online instructional design and blended course implementation. Similarly, Eze, Chinedu-Eze, and Bello (2018) found that insufficient technological competence and limited professional training hindered effective blended learning implementation among university lecturers in Nigeria.

The finding is also consistent with Yusuf and Balogun (2011), who observed that many Nigerian university lecturers possessed only moderate competence in instructional technology integration despite growing ICT awareness.

Furthermore, the finding supports the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh, Morris, Davis, and Davis (2003), which emphasizes that facilitating conditions such as training, technological support, and institutional infrastructure significantly influence technology utilization and readiness.

The implication of this finding is that awareness alone is insufficient for successful blended learning implementation unless accompanied by adequate technological competence, instructional training, and institutional support.

### **Lecturers' Perception of the Usefulness of Blended Learning**

The findings revealed that lecturers generally perceived blended learning as useful in enhancing teaching effectiveness, improving student engagement, and promoting instructional flexibility. The mean scores obtained for all items relating to perceived usefulness exceeded the criterion mean of 2.50, indicating positive perceptions among respondents.

This finding suggests that lecturers recognized the educational value and instructional benefits associated with blended learning. The respondents appeared to believe that blended learning could

improve teaching quality and facilitate better learning experiences for students.

The finding agrees with Means et al. (2013), whose meta-analysis revealed that blended learning improves instructional effectiveness, learner engagement, and educational outcomes compared to conventional instructional methods. Similarly, Garrison and Vaughan (2008) reported that blended learning promotes active learning, collaboration, flexibility, and learner-centred instruction.

The finding also strongly supports the Technology Acceptance Model (TAM) developed by Davis (1989), particularly the construct of perceived usefulness, which states that individuals are more likely to adopt technologies they perceive as beneficial and performance-enhancing.

The implication of this finding is that lecturers within the faculty already possessed positive attitudes toward blended learning prior to the COVID-19 pandemic, thereby indicating the existence of foundational acceptance for future digital transformation initiatives.

### **Lecturers' Perception of the Ease of Use of Blended Learning**

The findings further revealed that lecturers generally perceived blended learning as relatively easy to use and implement. Respondents agreed that online platforms could be utilized effectively and that technology integration into teaching was achievable.

This finding indicates that lecturers demonstrated confidence regarding their ability to interact with blended learning technologies and digital instructional systems. Positive perceptions regarding ease of use are important because technological complexity often discourages adoption.

The finding corroborates the study conducted by Davis (1989), which established that perceived ease of use significantly influences users' attitudes toward technology acceptance. Similarly, Tarhini, Hone, and Liu (2014) found that lecturers who perceived educational technologies as simple and convenient demonstrated stronger intention toward adoption.

The finding also supports Garrison and Vaughan (2008), who emphasized that lecturers' confidence in technology use contributes significantly to successful blended learning implementation.

The implication of this finding is that lecturers may be more willing to adopt blended learning practices if institutional support and technological infrastructure are adequately provided.

### **Relationship Between Gender and Lecturers' Perception of Blended Learning**

The findings revealed a statistically significant relationship between gender and lecturers' perception of blended learning, as the calculated p-value was less than the 0.05 level of significance.

This finding implies that gender influenced how lecturers perceived blended learning within the faculty. Variations in technological exposure, confidence, and prior experience may have contributed to differences in perception between male and female lecturers.

The finding agrees with Tarhini et al. (2014), who reported that gender significantly influenced educators' acceptance of e-learning technologies. The finding also supports the UTAUT model developed by Venkatesh et al. (2003), which identifies gender as an important moderating variable affecting technology acceptance and usage behaviour.

However, some studies have reported contrary findings where gender did not significantly influence technology acceptance. The variation in findings may be attributed to differences in institutional context, technological exposure, and study population.

### **Relationship Between Age and Lecturers' Perception of Blended Learning**

The findings further revealed a statistically significant relationship between age and lecturers' perception of blended learning.

This finding suggests that lecturers' age influenced their attitudes and perceptions regarding blended

learning technologies. Younger lecturers may have demonstrated more positive perceptions because of greater familiarity with digital technologies and internet-based communication systems.

The finding is consistent with Morris and Venkatesh (2000), who found that younger individuals generally adapt more easily to technological innovations compared to older individuals. The finding also aligns with the UTAUT framework, which recognizes age as a significant moderating variable influencing behavioural intention and technology acceptance.

The implication of this finding is that age-related differences should be considered when planning blended learning training and digital transformation initiatives within universities.

### **Relationship Between Academic Rank and Knowledge of Blended Learning**

The findings showed that academic rank significantly influenced lecturers' knowledge of blended learning.

This finding suggests that lecturers occupying different academic positions demonstrated varying levels of exposure, competence, and knowledge regarding blended learning concepts. Differences in academic responsibilities, professional development opportunities, and technological engagement may account for this variation.

The finding agrees with Venkatesh et al. (2003), who identified demographic variables, experience, and facilitating conditions as important determinants of technology acceptance and utilization behaviour.

The implication of this finding is that blended learning training programmes should accommodate differences in academic rank and technological exposure among lecturers.

### **Relationship Between Awareness and Lecturers' Perception of Blended Learning**

The findings finally revealed that awareness significantly influenced lecturers' perception of blended learning.

This finding indicates that lecturers who were more

aware of blended learning concepts demonstrated more positive perceptions toward its usefulness and ease of use. Increased awareness may improve familiarity, reduce uncertainty, and encourage positive attitudes toward technological innovations.

The finding supports the Diffusion of Innovation Theory, which emphasizes that awareness constitutes the foundational stage in innovation adoption. It also agrees with Porter et al. (2014), who found that increased awareness and exposure significantly influenced lecturers' willingness to adopt blended learning practices.

The implication of this finding is that sustained awareness creation, institutional sensitization, and professional development programmes are necessary for improving lecturers' acceptance and readiness for blended learning implementation within higher education institutions.

### Summary of the Study

This study investigated lecturers' perception of blended learning in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt. The study became necessary because of the increasing global integration of technology into higher education and the growing relevance of blended learning in contemporary instructional delivery, particularly within medical and health sciences education.

The study was specifically designed to examine lecturers' awareness of blended learning, sources of awareness, knowledge of blended learning concepts, perception regarding the usefulness and ease of use of blended learning, and the influence of demographic variables such as gender, age, academic rank, and awareness on lecturers' perception and knowledge of blended learning.

The study adopted a cross sectional survey research design involving both descriptive and inferential statistical approaches. The population of the study consisted of lecturers in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt. Using the Taro Yamane formula and

simple random sampling technique, a sample size of seventy-two (72) lecturers was selected for the study. However, fifty-six (56) valid copies of the questionnaire were retrieved and used for analysis, representing a response rate of 77.8%.

The instrument used for data collection was a structured questionnaire titled Lecturers' Perception of Blended Learning Questionnaire (LPBLQ). The instrument was validated by experts in Educational Technology and Measurement and Evaluation, while reliability testing using Cronbach Alpha yielded a reliability coefficient of 0.82, indicating high internal consistency.

Data collected were analyzed using descriptive statistics such as frequencies, percentages, and mean scores to answer the research questions, while Chi-square statistical analysis was used to test the hypotheses at 0.05 level of significance.

The findings of the study revealed that lecturers demonstrated a high level of awareness of blended learning. The internet and online platforms emerged as the major sources of awareness, followed by workshops and seminars. Despite the high level of awareness, lecturers demonstrated only moderate knowledge of blended learning concepts, particularly in areas relating to blended course design, online assessment, and instructional integration.

The findings further revealed that lecturers generally possessed positive perceptions regarding the usefulness and ease of use of blended learning. Respondents agreed that blended learning improves teaching effectiveness, enhances student engagement, promotes flexibility, and can be implemented effectively in instructional delivery.

The study also revealed statistically significant relationships between gender and perception of blended learning, age and perception of blended learning, academic rank and knowledge of blended learning, as well as awareness and perception of blended learning.

The findings of the study generally supported the assumptions of the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of

Technology (UTAUT), and Diffusion of Innovation Theory (DOI), which emphasize that perceived usefulness, perceived ease of use, awareness, demographic variables, and facilitating conditions significantly influence technology acceptance and instructional innovation adoption.

Overall, the study provided important baseline evidence regarding lecturers' awareness, knowledge, and perception of blended learning in medical education prior to the COVID-19 pandemic and subsequent digital transformation of higher education.

### Conclusion

Based on the findings of this study, it was concluded that lecturers in the Faculty of Basic Medical Sciences, College of Health Sciences, University of Port Harcourt possessed considerable awareness of blended learning prior to the COVID-19 pandemic. The study established that lecturers generally recognized the usefulness and relevance of blended learning in improving instructional delivery, student engagement, and educational flexibility within medical education.

However, despite the high awareness and positive perceptions observed among lecturers, the study concluded that practical knowledge and competence regarding blended learning implementation were only moderate. Many lecturers lacked adequate expertise in blended course design, instructional integration, and online assessment practices. This suggests that awareness and positive perception alone may not necessarily translate into effective implementation without sufficient professional training, technological competence, and institutional support.

The study further concluded that demographic and academic variables such as gender, age, academic rank, and awareness significantly influenced lecturers' perceptions and knowledge of blended learning. These variables therefore constitute important factors that should be considered during educational technology planning and blended

learning implementation within higher education institutions.

The study also established that the Faculty of Basic Medical Sciences demonstrated indicators of pre-pandemic readiness for blended learning adoption, although institutional preparedness, infrastructural support, and staff development would have been necessary for large-scale implementation.

Conclusively, the study underscores the importance of continuous capacity building, technological support, and institutional commitment toward sustainable digital transformation in higher education, particularly within medical and health sciences education.

### Recommendations

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

1. University authorities should organize regular training programmes on blended learning for lecturers.
2. Workshops, seminars, conferences, and professional development programmes should be organized periodically to improve lecturers' competence in blended course design, online instructional delivery, digital assessment, and instructional technology integration.
3. There should be improved technological infrastructure within the university.
4. Adequate internet facilities, stable electricity supply, learning management systems, multimedia instructional facilities, and technical support services should be provided to facilitate effective blended learning implementation.
5. Institutional policies supporting blended learning adoption should be developed and strengthened.
6. The university management should formulate clear policies and frameworks guiding blended learning practices, digital instruction, online assessment, and

technology-enhanced teaching within the institution.

7. Lecturers should be encouraged to participate in continuous professional development relating to educational technology.
8. Academic staff should be motivated to acquire digital instructional competencies through participation in educational technology certification programmes, online courses, and professional learning communities.
9. Blended learning awareness and sensitization programmes should be sustained within higher education institutions. Continuous awareness creation will further improve lecturers' familiarity with blended learning and encourage positive attitudes toward technology-enhanced instruction.
10. Specialized training should be provided for senior academic staff and lecturers with limited technological exposure.
11. Since age and academic rank significantly influenced lecturers' perceptions and knowledge of blended learning, tailored support programmes should be designed for lecturers who may experience greater difficulty adapting to technological innovations.
12. Medical and health sciences faculties should progressively integrate blended learning into instructional delivery.
13. Given the practical and interactive nature of medical education, blended learning approaches should be systematically incorporated into teaching, demonstrations, simulations, and clinical education activities.
14. Government and educational stakeholders should provide greater support for digital transformation in higher education. Increased funding, policy support, infrastructural development, and ICT capacity-building initiatives are necessary for sustainable blended learning implementation within Nigerian universities.

### Contribution to Knowledge

This study contributed to knowledge by providing baseline empirical evidence regarding lecturers' awareness, knowledge, perception, and readiness for blended learning within medical education prior to the COVID-19 pandemic. The study also extended existing literature by examining the influence of demographic variables such as gender, age, academic rank, and awareness on lecturers' perception and knowledge of blended learning within a Nigerian university context.

Furthermore, the study contributed specifically to literature on blended learning in medical education within Nigeria, an area that previously received limited empirical attention before the pandemic-driven digital transformation of higher education.

### Suggestions for Further Studies

The following suggestions are made for further studies:

1. Similar studies should be conducted in other faculties and universities to enable broader generalization of findings.
2. Comparative studies should be conducted between public and private universities regarding lecturers' readiness for blended learning.
3. Further studies should examine students' perception and readiness toward blended learning within medical education.
4. Future research should investigate the post-COVID-19 impact of blended learning implementation on teaching effectiveness and academic performance in Nigerian universities.

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