

**STUDY EXAMINING ATTITUDES AND PERCEPTIONS OF
PUBLIC HEALTH STUDENTS AT IMO STATE UNIVERSITY,
NIGERIA TOWARDS VIRTUAL LEARNING SYSTEM.**

BY

IWUNZE CHIDERA JUDITH

REG NO: 20134873868

**A THESIS SUBMITTED TO DEPARTMENT OF PUBLIC
HEALTH, SCHOOL OF POSTGRADUATE,
FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI,
IMO STATE, NIGERIA.**

MARCH, 2025

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**IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE AWARD OF THE DEGREE OF MASTERS IN PUBLIC
HEALTH (MPH) IN PUBLIC HEALTH
(HEALTH PROMOTION)**

MARCH, 2025

CERTIFICATION

This is to certify that this work titled "ATTITUDE AND PERCEPTION TOWARDS VIRTUAL LEARNING SYSTEM AMONG PUBLIC HEALTH STUDENTS OF IMO STATE UNIVERSITY, OWERRI, IMO STATE NIGERIA" was carried out by **Iwunze Chidera Judith (Reg No: 20134873868)** in partial fulfillment for the award of the Degree of masters in public health (MPH) in Public Health (Health Promotion and Wellness) in the Department of Public Health, School of health Technology, Federal University of Technology, Owerri, Imo State.



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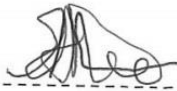
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DEDICATION

This work is dedicated to God Almighty

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ABSTRACT

According to Lokie (2021), virtual learning encompasses education that occurs beyond conventional classroom environments and broadens the use of technological resources, platforms, satellite connections, and similar technologies to access, analyze, create, share, and utilize data, information, and knowledge in manners that were almost unimaginable until very recently. Through virtual learning, students engage with a curriculum rooted in digital content, instructed by teachers who provide lessons online through video or audio. The Nigerian government has committed to boosting its citizens' ICT (information and communications technology) skills and bridging the digital divide. The Aim of this study was to determine the attitude and perception towards virtual learning system among public health students of Imo State University, Owerri, Imo State. The study employed a survey method that was descriptive in nature. The site of the study was Imo State University located in Owerri, Imo State, Nigeria. The study's population consisted of approximately 1,351 public health students from IMSU in Owerri, Imo State, who were enrolled in 100, 200, 300, and 400 level programs. The sample size consisted of three hundred and forty students (340), selected through a sampling procedure. Quantitative data were collected using a semi-structured, self-administered questionnaire to address the four research topics of the study. Experts from the Public Health Department of IMSU established the authenticity of both face and content. After determining the reliability through the test-retest method, a reliability index of 0.83 was found. The obtained data was analyzed using a quantitative approach with the Statistical Package for Social Sciences (SPSS) (version 21.0). For the analysis of data, statistical methods used included frequency, percentages, mean standard deviation, and t-test statistics. According to the results, 137 respondents (90.7%) had taken part in a virtual classroom setting and held a positive view of the virtual learning approach. Furthermore, the outcome demonstrates that the participants' attitudes towards the virtual learning system are favorable. According to the study's conclusions, public health organizations' and other health sector stakeholders should constantly More virtual learning systems should be incorporated into their programs; a range of virtual learning systems, such as online learning, virtual reality, and augmented reality; faculty and student support and training for effective use of these systems; and an assessment of the systems' efficacy to make sure they are fulfilling the needs of students. Among other things, they need to make virtual learning simpler, easier to access, and more user-friendly for students studying public health.

Key Words: Perception, Attitude, Virtual learning system, Students.

CHAPTER ONE

INTRODUCTION

1.1 Background information

In order to close the digital gap, the Nigerian government has committed to enhancing the ICT (information and communications technology) proficiency of its citizens and focusing on Nigerian universities (Federal Ministry of Education, 2007). Previously, the Federal Republic of Nigeria (2004:53) said that "the government shall provide facilities and necessary infrastructure for the promotion of ICT and learning]." In order to attain sustainable development in the twenty-first century, these pledges align with those of the New Partner shifor Africa's Development (NEPAD). Since virtual learning is an ICT component, Nigerian institutions should focus on it. For this reason, this study examines university students' attitudes and views of virtual learning.

One educational approach that has entirely changed how kids study nowadays is virtual learning. It is an educational experience that is improved by using computers and/or the internet both within and outside of educational institutions. The most popular location for education is online; instead of meeting with students in a traditional classroom, the teacher communicates lessons to them via online resources. The instructor and students are physically separated (either in time, location, or both) throughout the online learning sessions (2017, Racheva).

Students who study a digital curriculum under the guidance of teachers who provide lectures online via audio or video are said to be participating in virtual learning. Asynchronous (self-paced) or synchronous (real-time) environments are the two possible settings for this instruction (Coursera, 2022). Internet-based or technology learning is known as virtual learning. Virtual learning can take many different forms, including computer-based learning,

where students are taught by computer software that can tailor the material to their individual needs rather than a human instructor; internet-based learning, where students are taught by web-based software on a remote server; and remote teaching, where a teacher teaches students using online resources like forums, videos, e-mail, and messaging. Through the internet or other virtual resources like online courses and content platforms, learners get learning direction in this sort of learning. Students may now easily study from home in a manner comparable to that of conventional schools thanks to contemporary technology, which also lessens or eliminates the need for professors and students to share classrooms.

Information technology (IT) advancements have changed the way things are done. As a result, its impact on instruction and learning becomes more intricate and extensive. One no longer has to be in a traditional classroom to get an education thanks to the utilization of modern technologies. Technology, namely e-learning, may be used to facilitate teaching and learning. Since the middle of the 1990s, the term "e-learning" has been used extensively in the field of education. Some scholars define e-learning as the dissemination of instructional content using electronic media, including satellite broadcasts, CD-ROMs, interactive television, audio videotapes, intranets, and extranets. E-learning, according to some, is internet-based education that uses online communication, teamwork, information sharing, and training to benefit both the people and the organizations they work for. Since students are the primary beneficiaries of IT-enabled learning, it is crucial to understand their opinions of this teaching and learning method, which is why this study aims to investigate their perspectives of e-learning (Koochang & Harman, 2005).

Virtual learning is a cutting-edge approach to education that works with the newest online and instructional technologies, including YouTube, learning management systems, video conferencing, and virtual television (Hussain, 2018). Both virtual learning and online learning are general words used to include various factors. Among the most crucial techniques

included in the virtual learning process are basic contact, data and communication technology, individual and cooperative learning, and support (Clarke, 2018). The use of online learning is rapidly growing and is attempting to replace traditional study and coaching methods. Like many developing nations, Nigeria has made information and communication technology (ICT) and electronic learning (virtual learning) a key component of its national education reform initiative. Students' attitudes and academic performance have been significantly impacted by this. Instructors and lecturers have a significant impact on students' desire to study (Azhari & Dauyah, 2018). Our social, intellectual, and perceptual behavior has changed as a result of virtual learning, which has expanded our knowledge and enhanced our experiences. It affects our behavior, which often intensifies our curiosity-driven explorations of activities to solidify, enhance, and fortify our interest. The study's independent variables include attitude and perception an Information on virtual learning system among public health students of Imo state university, Owerri, Imo State while dependent variable is virtual learning system.

1.2 Problem statement

One of the key elements of any learning process is interaction, which is also one of the main concepts in research on remote learning. Communication components like body language and tone are more difficult to convey in a fully online course than in a face-to-face setting. Therefore, the existing interaction mechanisms must be used more intensively in virtual classes. Teaching and learning cannot be effectively facilitated by technology. Learners often voice their dissatisfaction with teamwork. When it comes to online learning, the greatest obstacle is a lack of social connection. Effective interaction is crucial to a student's academic success, as these authors have emphasized in the passage above. In virtual learning environments, social interaction with peers and the instructor is often very low, which can seriously hinder a student's ability to grow intellectually as well as psychologically and self-

efficaciously as they strive for excellence. Developmental students face a steep academic challenge when they first enter the classroom: learning the fundamental reading. Learning these fundamental skills on a computer screen isolates the learner and deprives them of the personal, caring, experiential learning that comes with a typical in-person classroom. Close supervision is necessary to make sure that every task is performed accurately and professionally for developmental pupils. If a student with a destitute writing background is assigned to write a two-page essay on a chosen topic, for instance, the student requires close one-on-one tutoring, interaction, and collaborative guidance from the instructor as well as other classmates who can offer distinct, varied compositional insights that will help the student's writing come to life. The difficulty of adjusting to online learning and the absence of communication between students and their instructors provide several difficulties for online learners (Almahasees & Jacomard, 2020). Thus, the purpose of this research is to ascertain how students see and feel about the virtual learning approach.

1.3 General Objective of the Study

The general objective of this study is to determine the attitude and perception towards virtual learning system among public health students of Imo State University, Owerri, Imo State.

1.3.1 Specific Objective of the Study

The specific objectives of this study are:

- i. To determine the socio-economic profile among public health students of Imo State University, Owerri, Imo State.
- ii. To ascertain information regarding virtual learning system among public health students of Imo State University, Owerri, Imo State.
- iii. To determine the perception of students towards virtual learning system among public health students of Imo State University, Owerri, Imo State.

- iv. To determine the attitude of students towards virtual learning system among public Health Students of Imo State University, Owerri, Imo State.

1.4 Research questions

- i. What is the socio-economic profile among public health students of Imo State University, Owerri, Imo State?
- ii. What is the information of public health students of Imo State University, Owerri, Imo State towards virtual learning system?
- iii. What is the perception of public health students of Imo State University, Owerri, Imo State towards virtual learning system?
- iv. What is the attitude of public health students of Imo State University, Owerri, Imo State towards virtual learning system?

1.5 Research Hypotheses.

- i. There is no significant relationship between the socio-economic profile of public health students of Imo State University, Owerri, Imo State and virtual learning system
- ii. There is no significant relationship between the attitude of public health students of Imo State University, Owerri, Imo State and virtual learning
- iii. There is no significant relationship between perception of public health students of Imo State University, Owerri, Imo State and virtual learning system

1.6 Justification of the study

The findings and result from this study is to ascertain attitude and perception towards virtual learning system among public health students of Imo State University, Owerri, Imo State

This study will benefit learners by improving the understanding of their own perception and attitudes towards virtual learning, Identification of potential barriers or challenges they may face and tailored support and interventions to enhance their virtual learning experience. This

research illustrates how students feel about the influence of online courses, how comfortable they are using them, and how supportive the lecturers are while they are taking classes online.

This study will help Educators find Insights into learners' perceptions and attitudes, helping them design more effective virtual learning experiences, Identification of areas for improvement in their teaching methods and materials and Enhanced ability to address learners' needs and preferences.

The study will benefit Institutions in Data-driven decision-making regarding the implementation and improvement of virtual learning programs, the development of targeted strategies to increase enrollment and retention rates and also the enhancement of overall educational quality and outcomes.

To Researchers and policymakers, it will benefit them to find Valuable information for conducting further studies and research on virtual learning, the Basis for policy development and implementation in the field of online education, and Improve their understanding of the impact and effectiveness of virtual learning. The results from this study can also serve as a reference material for other researchers. It will also help to make necessary adjustments with virtual method of learning.

The knowledge acquired may spur innovation and ongoing enhancement of online education. Additionally, the research was conducted at the undergraduate level. Since undergraduate study is a critical academic stage and students are more eager and driven to do practical research at this level, it is vital to understand their attitudes and perceptions of online learning.

1.7 Scope of the Study

The purpose of the research is to ascertain how Imo State University's public health students in Owerri, Imo State, feel about the virtual learning system. A semi-structured questionnaire

that participants self-administered served as the study's data-gathering tool. The study used a descriptive survey approach for this investigation. Additionally, the study's scope was restricted to 1351 pupils. Based on the simplified formula from Taro-Yamane (1967), this group of people was used to pick the sample size, and the sampling method was stratified random (proportionate). Additionally, the study was limited to independent factors such as socioeconomic profiles, information about virtual learning systems, perceptions, attitudes, and reliable characteristics of virtual learning systems. It was further restricted to using a structured questionnaire.

CHAPTER TWO

LITERTURE REVIEW

2.1 Conceptual review

There isn't a single term for virtual learning since the platforms for it are constantly changing, and students are embracing new resources like blogs and wikis as they become available online. Virtual learning is defined as education that takes place outside of traditional classroom settings and increases access to, analysis of, creation of, and sharing of data, information, and knowledge in ways that were nearly unthinkable until recently. This is achieved through the use of internet facilities, platforms, satellite links, and related systems (Lokie, 2011). It involves learning by interacting with digitally provided content, network-based services, and tutoring support from various online and offline media, including the extranets, intranets, Internet, satellite broadcasts, virtual worlds, games and simulations, clouds, and web platforms (Jarmin, 2010; Schutt & Linegar, 2013; Pellet & Lecarte, 2012). Electronic discourses such as downloadable e-executable files, social networking, portals, e-mail, Facebook, electronic dissertations, online platforms, and e-portfolios are employed and integrated in its execution (Bouchard, 2011; Weller, 2010; Wells, de Lange & Fieger, 2008). Mobile learning is also a component of virtual learning; it refers to the ability to access or provide instructional content on portable electronic devices such as PDAs and smartphones (Kharbach, 2013).

Virtual learning may be accomplished via web-based training, online learning, and technology-assisted education in virtual learning environments (VLEs). VLEs are characterised as computer-based, comparatively open platforms that facilitate interactions and contacts with other participants and provide a vast array of resources (Pelet & Lecarte, 2012). Customized educational resources are offered by the VLEs (Downes, 2009; Fournier

& Kop, 2011; Merritt, 2009). Due to the swift development of internet technology, these virtual learning environments (VLEs), which are also referred to as course management systems (CMS), learning platforms (LP), or learning management systems (LMS), have become increasingly popular in higher education.

Recent swift advancements in information and communications technology (ICT) have made virtual learning possible and hold the promise of improved training and instruction for an increasingly diverse student body. In light of the exponential growth of ICT, it is anticipated that the higher education environment will place greater emphasis on expanding students' use of ICT and fulfilling their expectations. The use of ICT in higher education has made it essential to establish new topic fields, develop lifelong learning skills, and increase the use of technology in teaching. The potential of ICT to provide innovative teaching methods like virtual learning is currently being extensively examined in both traditional and non-traditional educational spaces. Crawford and Kirby (2008) state that relevant virtual learning is more essential than ever, and therefore, it should significantly influence this generation's approach to education, socialization, and normalization.

Web-based learning, computer-mediated learning, blended learning, online learning, and open learning are other names for virtual learning. The capacity for "a user's computer to connect to a computer on a network, which offers the possibility to learn from anywhere, anytime, in any rhythm, with any means" is what unites this group. Singh and Thurman (2019) describe online learning as "learning experiences in synchronous or asynchronous environments using different devices (e.g., laptops, mobile phones, etc.) with internet access." In these environments, students have the opportunity to study and interact with teachers and peers from any location (on their own). Uninterrupted learning environments are characterized by live lectures, real-time teacher-student interactions, and immediate feedback opportunities, in contrast to the poorly organized asynchronous environments. In such a

setting, learning materials can be accessed through several learning systems and forums instead of live lectures or lessons. It is impossible to respond and provide comments instantly in such a setting.

There is broad consensus that virtual learning will be one of the factors driving learning forward with the advent of information and communications technology (ICT). Consequently, it is necessary to incorporate virtual learning into higher education. The twenty-first century can justifiably be called an e-driven world, which offers another rationale for virtual learning (Oye, A. La hab, Madar & Ab. Rahim, 2012). Every aspect of existence has been significantly altered by virtual or e-technologies. Schools ought to utilize virtual learning to offer students significant experiences that foster their growth and help them gain the skills and knowledge necessary for them to become independent, inventive, and lifelong learners.

Some have claimed that virtual learning is a process that empowers students, depending on their awareness. Awareness refers to the understanding and knowledge of the framework and functionality of any new technology, including the Internet. It also involves recognizing the potential benefits of employing such technology. Individuals can harness new technologies, develop innovative tools, and contribute meaningfully to societal progress thanks to awareness. Consequently, it acts as a basis for investigations into the condition of virtual learning among college students. The researcher is motivated for various reasons to investigate the level of awareness of virtual learning among students at Anambra State university. Among them is the idea of social craft in learning. The theory of social craft learning was developed by Wenger in 1998. Wenger's philosophy posits that learning is a social skill requiring acquisition and cultivation. He asserted that a craft-oriented approach to education is essential in light of the trend suggesting that schools should serve as venues for social learning practices. He indicated that this concept is based on two essential skills: (1) the ability to change schools into environments where learning meta-learning included is

the sole perspective, and (2) the ability to cultivate these attitudes, inclinations, and passions for learning. Wenger's craft of learning theory is based on the notion that schools and educational institutions could and should be the authorities in the social art of learning. They can also function as learning environments, in addition to equipping students with the abilities to reflect on, interpret, and discuss their own learning styles and epistemologies. When applying this theory to virtual learning environments, it becomes evident that for university students to learn the social practice of learning, they must see themselves as free agents capable of anticipating the periodic updating of their knowledge and skills based on their projections of demands and economic factors.

Another aspect is that a lot of students have been exposed solely to traditional lecture-format instruction when they first entered the twenty-first century. According to Soyemi, Oguntuka, and Soyemi (2012), a large number of university instructors mostly use the conventional lecturer-centred approach of instruction. It appears that many instructors do not believe that distance learning is as successful as conventional techniques, even with the proliferation of virtual technology. According to God Vinsamy (2007) and Shahadat, Muhibub & Clement (2012), numerous individuals perceive virtual universities (VU) as a threat to the noble aspirations of education and a regressive move toward the olden days of mass production, standardization, and simply economic concerns. Some of the curriculum's principles cannot be taught using the conventional lecture style, which is still used by many lecturers, particularly in this technologically advanced day.

Research has usually shown that students cannot become internationally literate and thrive in this information age by using conventional article structures (Ahmad, 2012; Ravitz, 2006; Wells, de Lange, & Fieger, 2008). Research on the responsible use of technology in education highlights the need to go beyond merely replicating traditional antiparticles and to embrace digital communication (Warschauer, 1999), bolstered by a constructivist

pedagogy (Jonassen & Land, 2000) to facilitate purposeful tasks (Martin & Vallance, 2008), as articulated by Vallance, Martin, Yokohama, and Schaik (2010). It is crucial to explore and implement creative educating and study strategies that captivate students and meet the needs of a diverse student population.

Students must be encouraged to participate in 21st-century activities, such as using technological devices.

For virtual learning or any other electronic learning technology to be successful, students need to understand what it is, be motivated to use it, and be proficient in its usage. For lecturers, the incorporation of virtual learning might not be a top priority, though, because of the challenges associated with the introduction of ICT in overcrowded classrooms, which involves insufficient training, a scarcity of learning support materials and assistance, an overloaded curriculum, ambiguous planning and evaluation processes, and significant pressure on lecturers to boost their research outputs (Oye et al., 2012). To add to the work of the lecturers and the lectures during class, students must employ virtual learning. According to research by Goktas, Yildirim, and Yildirim (2009), students who are encouraged to participate in virtual learning are more interested in learning because they can understand how developing problem-solving abilities and practical knowledge would help them succeed in the future. According to Teo (2008), virtual learning helps students develop other higher-order thinking abilities by encouraging them to think constructively. Students are likely to acquire certain abilities via virtual learning that will enable them to participate in global platforms, which are crucial for them to remain competitive in the global village.

Students must understand what electronic learning tools, like virtual learning, involve and be motivated and capable of using them for them to be successful. However, because of the challenges of implementing ICT in crowded classrooms such as inadequate training, a lack

of resources and assistance for learning, an overloaded curriculum, due to unclear planning and assessment, as well as intense pressure on instructors to increase research output, the adaptation of virtual learning may not be a primary concern for lecturers (Oye et al., 2012). Students must employ virtual learning to supplement their in-person lectures and the efforts of their lecturers. Goktas, Yildirim, and Yildirim (2009) discovered that when students are inspired to participate in online education, they are more interested in learning as they can understand how developing real-world skills and problem-solving abilities can help them succeed in the future. Teo (2008) also found that learners' own constructive thinking helps them develop other higher-order thinking abilities via virtual learning. Students that participate in virtual learning are likely to acquire certain abilities that will enable them to participate on global platforms, which are essential for them to remain competitive in the global village.

In the circumstance of this deadly virus spread, online platforms that enable (a) video conferencing with no fewer than 40 to 50 students, (b) student discussions to uphold class organization, (c) reliable internet connections, (d) lectures that can be accessed on both mobile devices and laptops, (e) the option to view past recorded lectures, and (f) immediate student responses and assignment completion are essential (Basilaia et al., 2020). Anastasiades and Retalis (2001) identify three distinct forms of e-learning: fully online, mixed mode (commonly known as hybrid or blended learning), and web-assisted. In entirely online learning, the student and teacher do not have face-to-face interactions; all communication occurs through the internet and its related technologies. Unlike in-person learning, fully online learning does not facilitate direct interaction between students and teachers. All aspects of teaching, learning, assignments, and learning resources are carried out online (Young, Hausler, & Sanders, 2008). Hybrid learning, in contrast to fully online learning, incorporates both online and face-to-face interactions (Allen & Seaman, 2003).

The last category of e-learning is known as web-assisted mode, which utilizes synchronous tools such as course websites and resources to improve education and learning processes. Web-assisted learning functions similarly to fully online classes; however, it incorporates online discussions and interactions between students and instructors. The number of online programs and students enrolled at the elementary level has been increasing rapidly and continuously, high school, and tertiary education levels. Several student populations with diverse academic needs are attracted to online learning, as traditional education classes often lack the skill to meet those needs. Online courses are in high demand because of the drive "to deliver superior education to all students, regardless of location and time." The necessity for adaptable learning conditions for potential students who are hospitalized, have school-related phobias, are single parents, have been expelled, are dropouts seeking a diploma, and many other unique circumstances has led to an increase in the availability of distance learning courses and programs. The advancement of online learning programs has made it possible for individuals who would have encountered insurmountable obstacles to access educational opportunities. One of the many advantages of online classes is that they provide a favorable learning atmosphere for students who prefer self-directed learning. Students who have self-control often employ a number of cognitive and metacognitive strategies to reach their educational goal."

By consistently using time management, reviewing materials on a regular basis, students can improve their self-regulated learning skills in virtual learning environments by seeking help from peers or professors, adhering to deadlines, and employing metacognitive strategies to reflect on their learning. Given that flexibility is a key reason students are attracted to online learning, the benefits of online courses in this regard are significant. During their online studies, students can work whenever and wherever suits their learning needs. A number of students and teachers mentioned that they found it easier to focus on the course content rather

than on challenges such as parking, traffic, and other issues that can arise in a traditional classroom environment.

Throughout the COVID-19 pandemic, teachers reformed their teaching methods entirely in order to meet new market conditions and adjust to evolving situations. This led to a rapid shift from typical classrooms to e-classrooms (Carey, 2020). The question is not if online teaching and learning can provide high-quality instruction during this difficult period, but rather how educational institutions will handle the implementation of online learning on a large scale.

According to Liguori and Winkler (2020), it would not be feasible for educational institutions to swiftly transform all of their college courses into online resources. The three primary challenges of online teaching are distance, scalability, and tailored instruction. They also showed that the sole method for countering a pandemic epidemic is through innovative concepts. Google's products, including (a) Gmail, (b) Calendars (c) Google Forms, (d) Google Hangouts, (e) G Drive (f) Google Jam Board and Drawings, (g) Google Classroom, and (h) Open Board Software (not a Google product but assists in recording meetings as files), can be extremely useful in challenging situations that necessitate a rapid shift to online learning. These resources can serve as a practical alternative to face-to-face teaching (Basilaia et al., 2020). Schools and colleges must be resilient and discover innovative methods to go on with teaching-learning activities when crises and catastrophes (both natural and man-made) strike.

2.1.1 Perception of students toward virtual learning system Social presence

A crucial aspect of online learning is social presence. Social presence indicates how prominent two communicators are to each other when using a communication medium, based on their differing views regarding that medium and online learning. Social presence, which

has an impact on the social atmosphere of the classroom, can be described as how much a person is seen as "real" in mediated communication. To develop and enhance group and communication skills linked to cognitive presence social presence is essential. To improve communication in both conventional and technology-based schools, social presence is essential. While students appreciate the instructional settings, the instructor must be able to establish and sustain them. A limited social presence signifies a limited learning interaction too (Bali & Liu, 2018).

Social interaction

Moore proved that one of the most crucial elements of instruction and learning is interaction. When it comes to in-person or even online learning, interaction is crucial. To boost students' knowledge and improve learning, social contact has to be utilized in the classroom. According to Tu (2018), the elucidation of the link between social presence and the social learning theory hinges on social interaction. According to Hurst, Wallace, and Nixon (2018), classrooms become dynamic spaces when social interaction is included in the dynamics of the classroom.

Satisfaction

Course pleasure is a key component of learning, much like social presence and engagement. Many investigations have indicated that students are generally happier with in-person interactions when comparing their satisfaction with online versus in-person courses (Bali & Liu, 2018). Accordingly, Gunawardena & Zittle (2019) made the case that interactions between students and teachers also influence student happiness.

2.1.2 Attitude of students toward virtual learning system

Research on attitudes and how they are formed demonstrates that attitudes and perceptions are related and that attitudes may be broadly classified into likes and dislikes. Though their

opinions differ, university students in poor nations typically have good opinions towards virtual learning. This was highlighted by Nassoura (2018), who found that a huge number of students had favourable opinions on virtual learning as it improved their motivation and sense of self.

Bhuasiri et al. (2016) identified several key factors for developing countries, including raising awareness of technology and enhancing attitudes toward e-learning, improving foundational tech skills and knowledge, refining learning materials, mandating computer training, promoting the use of virtual learning systems, and emphasizing the necessity of substantial university support. Furthermore, characteristics used to assess students', teachers', and principals' attitudes toward ICT have been categorized into two groups: demographics (such as age and gender) and computer experience (including training, duration of computer usage, ownership of a computer, access to computers, and intensity of computer use). One of the first factors influencing students' attitudes towards and desire to utilise virtual learning is their degree of access to technology; the accessibility of dependable ICTs and the ease of using them both influence students' perceptions of virtual learning. One of the most crucial factors that is considered when evaluating how far poor nations have advanced in virtual learning is access to the required ICT infrastructure. Liaw & Huang (2019) looked at students' perceptions towards virtual learning in another research. According to their research, male students are more likely than female students to have good views towards virtual learning. Additionally, they discover that a learner's computer-related expertise is a crucial predictor of their self-efficacy and excitement for online education. In virtual learning, a student's behavioural intention is significantly predicted by their level of self-efficacy, initiative, and intrinsic and extrinsic motivation. Libyan pupils that took part in a different comparative research by Rhema & Miliszewska (2018) showed a positive inclination towards and appreciation for virtual learning. Additionally, the study discovered a statistically significant

relationship between students' exposure to cutting-edge technologies and their opinions on technology. Future virtual learning programs in Libya have a lot of potential, as seen by the students' high expectations and willingness to engage in these courses.

In 2020, Ramij and Sultana conducted a study on Bangladesh's preparation and reaction to the challenges. He notes that the majority of Bangladeshi students face considerable obstacles due to concerns including inadequate online frameworks for distant learning, fundamental infrastructural difficulties, and student access to ICT, the internet, and study gadgets. He adds that "uncertainty prevails in our educational sector" and refers to the condition of affairs in Bangladesh as a "bitter reality." During the COVID-19 pandemic, the government has implemented a policy of "education anytime, anywhere for everyone" (Adarkwah, 2020). Similar to Bangladesh, Ghana has seen its fair share of challenges that have hindered efforts to use distant learning. According to the survey, Ghana's total ICT development places it 112th out of 175 nations. According to the survey, one of the most common obstacles that students encounter is the availability of energy. Educational systems may benefit from studies like this that highlight the persistent challenges associated with putting distant learning systems into place. However, according to Anekwe (2017), students at federal and state institutions benefit from virtual classes, and they are more prepared and continue to support them.

2.1.3 Factors Influencing Students Towards the Use of Virtual Learning system

A number of variables influenced how well online learning was implemented. For online learning to be successful, infrastructure and learning facilities, as well as the preparedness of resources, such as instructors and students, are essential. Three major categories were identified from the viewpoint of the students: the learning environment, the learning process, and the motivation of the students to learn. Each component was broken down into specifics. Aspects of the learning process that were examined included how students perceived

lecturers' delivery of the content, their capacity to assimilate the material, and their learning objectives. The locations for implementing learning and the media used were the elements of the learning environment that were examined in the meanwhile. Learning motivation is the last factor considered. Self-confidence in technological proficiency, self-confidence in self-directed learning, and confidence in online communication and learning were all thoroughly explored in this area.

Students Perception towards virtual Learning

The process of learning is an ongoing endeavour in which learners absorb information, abilities, and viewpoints in their attitudes and actions. Students' opinions on how lecturers present the topic, their capacity to retain information while studying online, and the outcomes of their learning assessments are all part of their perspectives of the educational process. According to research by Aswasulasikin (2020), students find online learning boring and want their instructors to be more inventive and imaginative to prevent boredom.

According to Adijaya's research (Adijaya & Santosa, 2018), students believed that their interactions with lecturers during online learning were less effective than those in conventional classroom settings. Online learning is not preferred by students over in-person instruction. Because the directions were clear, they were able to change after only encountering challenges at the start of the meeting. Because learning is not conducted in person but rather through the use of media based on information and communication technology, researchers have found that students' ability to follow the online learning process will be influenced by their access to learning materials and technological knowledge.

Students' Perception towards Learning Environment

Many studies have demonstrated that the learning environment affects the success of learning. This encompasses not only the learning materials but also the learning environment

in terms of online education. Both professors and students utilise different types of media in online learning. Typically, social networking and video conferencing applications are used for online learning by both students and instructors. They may communicate with one another by using apps like WhatsApp Group, Zoom, e-classroom, video conferences, and phone or live chat (Dhull, 2017). Currently, Google Classroom and WhatsApp are the most widely used online learning platforms. However, learning via the use of technology has improved the comfort and enjoyment of the learning environment (Bali & Liu, 2018). Students believe they have a higher chance to be more creative when they use technology to learn.

Students' Perception towards Motivation for virtual Learning

The term "motivation" is derived from the word "encouragement" or "things that become a reason for doing something." A crucial element of learning is motivation and plays a significant part in the process. Motivation plays a significant role in promoting student learning in online education. The usage of cutting-edge technology boosts motivation to study via online courses. Learning must be done online during a pandemic since there is no other option. In terms of focus, curiosity, excitement, independence, preparedness, zeal or support, persistence, and faith in oneself, students are highly motivated to pursue the learning process even when it is conducted online (Fitriyan & Sari, 2020). Research has shown that elements of the technology adoption paradigm, such as perceived utility and simplicity of use, have a favourable effect on student learning outcomes.

The shift to virtual learning systems, accelerated by the COVID-19 pandemic, has significantly transformed the educational landscape in Nigerian universities, including Imo State University. Several studies have examined students' attitudes and perceptions toward these systems, revealing a complex mix of optimism and constraint. Generally, public health and allied health students demonstrate a positive attitude toward virtual learning, recognizing

its flexibility, accessibility, and potential to complement traditional classroom instruction. However, acceptance is often moderated by infrastructural, pedagogical, and socio-economic challenges that hinder its full adoption. In Nigeria, the most frequently cited barriers include poor internet connectivity, unstable electricity supply, inadequate access to digital devices, and high data costs. These limitations often create frustration and reduce students' overall satisfaction with virtual learning platforms.

Discipline-specific findings show that while theoretical aspects of public health education can be effectively delivered online, practical components such as community fieldwork, laboratory activities, and clinical exposure remain inadequately addressed. As a result, many students perceive virtual learning as insufficient for developing essential hands-on skills. Institutional factors also play a major role in shaping perceptions: students in universities that provide adequate technological support, clear online learning policies, and well-trained lecturers report more positive experiences compared to those in less-prepared institutions. Lecturer preparedness, interactivity of content, and timely feedback have been identified as key predictors of student satisfaction and engagement in virtual environments.

Studies focusing on Imo State University specifically reveal that public health students exhibit moderate awareness and generally favorable perceptions of virtual learning systems, yet they continue to struggle with access and quality issues. Limited lecturer-student interaction, lack of institutional readiness, and uneven digital literacy further constrain effective learning outcomes. Broader Nigerian research echoes these concerns, highlighting inequities faced by students from rural areas or lower-income backgrounds, who often experience digital exclusion. Furthermore, findings on academic outcomes are mixed some studies indicate that virtual learning can achieve comparable performance to traditional methods when properly supported, while others report declines in perceived learning quality, particularly for practical courses.

In conclusion, while the adoption of virtual learning has fostered new opportunities for innovation and continuity in public health education, significant challenges persist. Addressing infrastructural deficits, improving lecturer competence in digital pedagogy, integrating blended learning approaches, and ensuring equitable access are critical for enhancing students' attitudes and perceptions toward virtual learning systems. Future research should focus on longitudinal evaluations and comparative analyses across Nigerian institutions to determine the long-term effectiveness of virtual learning in health-related disciplines.

2.2 Theoretical Review

2.2.1 Technology Acceptance Model

This study adopts the theoretical framework of the Technology Acceptance Model (TAM), introduced by Davis in 1989, to investigate students' perceptions of online education. The Technology Acceptance Model was developed by Davis (1989) to elucidate user behavior across different end-user computing technologies and populations, with an emphasis on the general factors influencing computer acceptance. Two specific beliefs were included and assessed in the basic Technology Acceptance Model: Perceived Usefulness (PU) and Perceived Ease of Use (PEU). Perceived usefulness denotes the subjective belief of a potential user that a specific system (such as a single platform e-payment system) will enhance his or her actions, whereas perceived ease of use relates to the degree to which the user anticipates that the intended system will be easy to use (Davis, 1989). In the Technology Acceptance Model, elements designated as external variables can affect an individual's beliefs about a system.

The Technology Acceptance Model (TAM) was created to streamline the processes involved in technology adoption by predicting user behaviour and provide a theoretical foundation for

successful implementation. By providing potential steps practitioners may take prior to using new technology, TAM also sought to guide practitioners. The approach used many tactics to achieve these objectives (Davis, 1989; Davis, 1993).

Davis created TAM by identifying the processes that link information system characteristics (external variables) to real system usage. The model was based on the Theory of Reasoned Action, which offered a psychological lens through which to analyse human action but had not previously been used in IS literature (Davis, 1989; Davis, 1993).

Technology adoption is described by TAM as a three-phase process. It starts with external factors, such as aspects of the system design, which influence cognitive responses like perceived usefulness and perceived ease of use. Real usage conduct is ultimately determined by these cognitive processes, which in turn generate emotional responses, such as attitudes towards or intentions to utilise the technology (Davis, 1989; Davis, 1993).

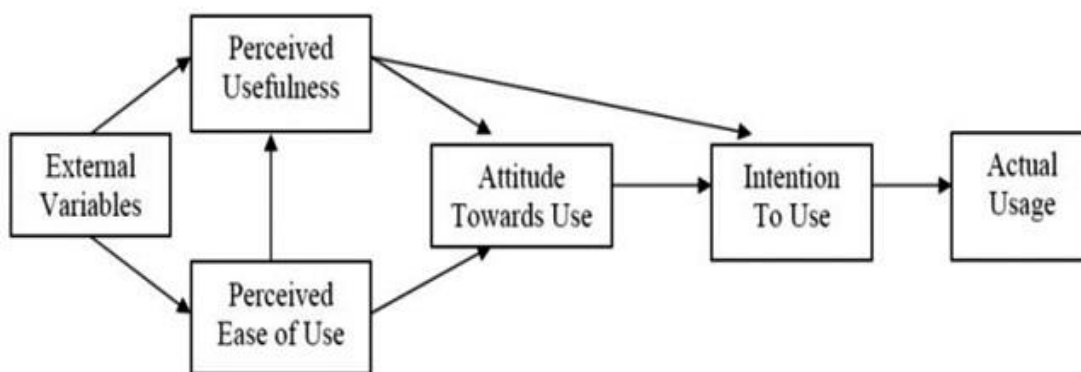


Figure 2.1: Technology Acceptance Model (Technology Acceptance Model) (Davis, Bagozzi & Warshaw, 1989).

2.2.2 Application of Technology Acceptance Model to The Study

The Technology Acceptance Model (TAM) and its variations are widely utilised in a wide range of fields, contexts, and regions and are essential theoretical instruments for predicting user behaviour. TAM is used in this research since it has been demonstrated to be quite effective in describing the factors influencing e-learning adoption and use in prior student-based studies (Kiraz & Ozdemir, 2006; Teo, 2009). In addition to information systems management, TAM has been used in a variety of industries, including marketing, advertising, and healthcare.

1. **External Variables:** The external variables include:
 - a. Sample distribution: it included, gender, age, department, level etc.
 - b. Computer skills: It was intended to evaluate the participants' proficiency with computers at three different levels: fundamental, intermediate, and advanced. Examples of these levels include document formatting and multimedia management.
 - c. Virtual learning experience: It will evaluate the participants' prior exposure to and involvement in virtual learning activities, such as online classes, online tests, and virtual learning workshops.
2. **Perceived Usefulness:** Perceived usefulness (PU) is defined as "the degree to which a person believes that using a particular system would enhance his or her performance" (Davis, 1989). PU is also defined as the extent to which a potential user views a technology as offering similar or better value in comparison to an alternative method of performing the same task (Davis et al., 1989). The importance of online technology to the participants' success in their education: this variable will also be assessed and compared across two different purposes: personal and learning. Also, the impact of virtual learning on students' education: It will assess participants' ratings concerning the

level of impact of virtual learning on their education. The perceived usefulness is how much learners think that using online learning will enhance their performance. The value of online learning is shown through its assistance in saving travel time and expenses, as well as providing access to diverse methods. Numerous studies have demonstrated that perceived usefulness has a positive effect on learners' attitudes and motivation, which in turn enhances learning outcomes.

3. Perceived Ease of Use: Certain elements, such as the features of information resources, expertise, technological equipment, and support, etc., may have an impact on how simple a virtual learning system is to use. Additionally, according to Park (2009), PEU is "the extent to which one believes using e-learning will be free of cognitive effort." The perception of ease of use is affected by various factors, such as computer anxiety, self-efficacy regarding computers and the internet, computer anxiety, perceived external control, information anxiety, perceived objective and enjoyable usage, usability, and intention to use behaviorally. Learning and information exchange are the goals of online learning platforms. Since the globe has grown more interconnected, it is now necessary to use technology for learning, information gathering, and knowledge acquisition. These resources are accessible and user-friendly, which makes knowledge-sharing procedures easier. Numerous studies have indicated that the learning process is significantly impacted by the accessibility, usability, and transmission speed of mobile devices and online media. Access is made easier, which leads to more adaptation in online learning and better results.

4. Attitude towards Use: To enhance the quality of online learning, it is crucial to foster social interaction with instructors and peers. If there is ample interaction and consistent practice, online learning can be advantageous. Furthermore, due to the more comfortable rules and standards of online learning, proactivity, self-study skills, and a

sense of compliance are essential for achieving better learning outcomes. It is more difficult to control the process than it is with conventional techniques.

- 5. Intention to use:** The degree of conscious preparedness for performing or abstaining from a specific action is referred to as the behavioural intention to use and apply new skills. A dependent variable called intention forecasts how a certain ability will be used in practice, which in turn influences the development of an attitude.

2.3 Empirical Review

Abbasi et al. (2020) investigated how a private medical college's students felt about online education during COVID-19. Participants in a descriptive cross-sectional research came from the Liaquat College of Medicine and Dentistry. 377 MBBS and BDS students at all levels made up the sample for the study. An instrument for self-administering the survey was created. After receiving clearance from the Medical Education Experts, a pilot test with 30 participants was carried out before the questionnaire was distributed. The purpose of the questionnaire was to gather information from the participants. It was determined that the questionnaire was reliable. Students' attitudes towards e-learning were determined using an independent T-test. Furthermore, percentages and demographic frequencies were computed. Findings: A total of 382 answers were obtained. The research included 245 female participants and 137 male participants. The questionnaire's Cronbach's alpha was determined to be 0.851. In general, 77% of students had unfavourable opinions of online education. 76% of students access their e-learning on a mobile device. Students did not choose online education over in-person teaching after the lockdown. During a lockdown, it is important for teachers and administration to take suitable measures to improve e-learning so that learning outcomes can be enhanced.

During COVID-19, Khan et al. (2021) investigated how Indian students felt about online education. 184 students from the University of National Capital Territory of Delhi, India specifically, As part of a quantitative study, Delhi University, Jamia Millia Islamia, and Guru Gobind Singh Indraprastha University were requested to complete an online survey. The research ran from June to August of 2020. The study's findings demonstrated that intellectuals had favourable opinions about virtual learning and want to embrace this new method during COVID-19.

The perceptions of Iranian virtual students towards e-learning were examined by Yaghoubi et al. (2008). A closed online survey was completed by one hundred and ten students. An e-learning expert from the University of Tehran evaluated the questionnaire's validity and reliability, finding a Cronbach's Alpha (α) of 0.88. SPSS Win 13 and a descriptive correlation approach were used to analyse the data in this study. The study's findings indicate that pupils view online learning positively. The linear regression results indicated that four factors were responsible for 68% of the model's variations: students' proficiency with e-learning, internet access, usage of computers and the Internet, and assessment of the current shortcomings in the higher education system.

Students' opinions of online learning were compared in a research by Smart and Cappel (2006). According to the findings, applicants for the optional course scored noticeably higher on the online modules than those for the required course. Candidates for optional courses gave the online module a higher rating than those for required courses, who gave it a lower rating. The findings also imply that when constructing combinations of online courses for conventional instruction, educators should exercise caution. This combination has to be carefully developed according to the course content, educational environment, and student characteristics. Approximately 83% of graduates seek to finish an online learning module for

the first time. The findings indicated that the lack of time to finish the online learning module was the reason for the stated unhappiness.

Alam et al. (2012) investigated how two prominent universities the Virtual University of Khyber Pakhtunkhwa Province of Pakistan and the Allama Iqbal Open University offer distant learning to individuals. The researchers used structured questionnaires to gather data from 104 respondents. About 55% of young students under 30 favoured this distant learning technique, according to the survey's findings. This choice was linked to DL awareness, efficiency, and co-factors such job commitment, time and geographical flexibility.

Graduate students' perceptions and experiences with blended learning programs in Pakistan were investigated by Kazi and Moghal (2019). At Lahore Public University in Pakistan, faculty students' experiences and perspectives were examined using a qualitative research technique. Blended learning was implemented to enhance student access and facilitate communication. The findings of semi-structured interviews with eleven graduate students revealed both favourable and unfavourable opinions towards blended learning courses. The absence of chances for student interaction, technological difficulties, and a lack of transparency in student achievement were often mentioned as negative features. On the other hand, advantages included cost-effectiveness, ease of access, a bad atmosphere, and flexible learning.

Ali (2020) investigated how Pakistani students viewed the usage of the Internet in class. The goal of this study was to determine how students felt about their online learning environment. The findings indicated that there were both advantages and disadvantages to using the internet for educational reasons, and that there were gender variations in internet usage. However, the internet was seen more favourably by female students than by male students, and both sexes agreed that it was crucial to their academic endeavours.

Shahzad and Khan (2010) looked at how virtual learning was evaluated in the context of higher education. Surveys were employed to gather data for their descriptive study. Following a review of pertinent literature, the teachers and students at the Virtual University of Pakistan filled out this questionnaire. Research findings indicate that (1) a long-term idea has to be developed, and (2) instructors, media designers, and computer scientists need to work closely together to develop instructional approaches. (3) Hardware and software technological advancements need to be taken into account.

A study on perceptions and preferences regarding virtual learning during COVID-19 in India was carried out by Muthuprasad et al. (2021). The study's findings indicated that 70% of students were open to selecting their online training during the pandemic. The majority of respondents favored the use of smartphones for online learning. Through content analysis, they discovered that students favor recorded quizzes at the end of each class for enhancing learning effectiveness. Students found the versatility and simplicity of online classes appealing, but issues with wireless connectivity in rural areas hinder their ability to benefit from online learning initiatives. The findings of this article could be valuable for developing curricula based on new standards, since numerous courses might necessitate a full transition from a practical agricultural education system to an online format and the establishment of a hybrid model.

The study by Vakasallah et al. (2019) focused on the perceptions and attitudes of undergraduate students in Kuala Lumpur regarding blended learning. A cross-sectional study was conducted to ascertain undergraduates' perceptions and attitudes across gender, years of study, and departments. This study took into account three areas: perception, blended learning concepts, and negative impression. From two university departments in Kuala Lumpur, 126 students from Years 1 and 2 were recruited as respondents. Students showed strong preferences for their perceptions and concepts of blended learning. Biomedical and

nutrition students exhibited a notable disparity in how they perceived the departments' approaches to blended learning. The results of the multivariate test indicated a significant difference between departments regarding domain negative expression and the concept of blended learning. The Centre for Learning Resources at Landmark University Omu-aran, Kwara State, performed a research on Nigerian students' adoption of blended learning in 2017 by Okocha, Eyiolorunshe, and Oguntayo. The research outlines the elements that affect Landmark University undergraduate students' acceptance of blended learning and their degree of acceptance of its features. The tool for gathering data was a questionnaire. According to the research, the acceptability of blended learning was greatly impacted by performance expectations and enabling circumstances. The student exhibits more interest in readings and course materials on the learning management system and less interest in class discussions and lectures when it comes to understanding the acceptability of blended learning features. Additionally, it was shown that there is no correlation between students' learning preferences and their desire to use blended learning.

In Pakistan, Ansar et al. (2020) investigated how people felt about online education during COVID-19. Consequently, Zoom app-based online courses emerged as the most popular teaching approach. A total of 78% of students expressed dissatisfaction with online learning, according to the measure that was constructed. Concerns were also raised by students about assessment procedures, teacher-student contact, test fairness, and conceptual difficulty. Eighty-one percent of respondents said they did not want to continue e-learning, and most students preferred classroom education. Students were unhappy with e-learning, according to the research's findings, which also highlighted several significant problems with the system. To provide high-quality education and preserve the future of Pakistani university students, the Chancellor and HEC should give this their highest priority.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This study used a descriptive cross-sectional survey research methodology to find out how Imo State University, Owerri public health students felt about the virtual learning system. Beat (1981) believed that the design allowed for the description of occurrences in their natural environments. Also, Nwana (1960) said that the design makes it easier to describe a scenario as it is and to get information straight from the respondents. Shahzad and Khan (2010), Yaghoubi et al. (2008), and Abbasi et al. (2020) have used this research methodology in their studies. Imo State University in Owerri State was home to the students that were exploited. At Imo State University in Owerri, Imo State, four tiers of public health students participated in the research. Because the information was gathered directly from the respondents and the respondents' conditions were described as they occur in their natural environments, the study's design is suitable.

3.2 Area of study

Students in the 100, 200, 300, and 400 level public health programs at Imo State University in Owerri participated in the research. In 1991, Imo State House of Assembly approved Law No. 4, which founded Imo State University in Owerri. On October 23, 1981, the university accepted 392 pioneer students as its inaugural intake. "Imo State University: An Events Chronology, July 13, 2011".

Imo State University operates as a fully operational institution. The National University Commission (NUC) of Nigeria has fully accredited the majority of the university's programs, including public health.

The outcome of the National Universities Commission's (NUC) 1999–2000 accreditation process attested to the university's excellent rating and widespread public acceptability in Nigeria. The university was rated 10th overall among state and federal institutions in Nigeria and first among all state universities. During the administration of former Governor Rochas Okoroca, Imo State natives were given free tuition at Imo State University; however, the practice was discontinued in 2016. Through the Registrar, Professor Emeka Ejinkonye, the then-acting Vice Chancellor of IMSU, Professor Aa Obasi, announced this, saying that students of Imo descent would henceforth pay a token for certain services at the institution.

The Alvan Ikoku Federal University of Education temporarily housed Imo State University in Owerri from May to December 1992. Later, the institution relocated to its own property, a four-story facility on the Lake Nwaebere campus of the Federal institution of Technology in Owerri. Imo State University later purchased the Lake Nwaebere campus of the Federal University when it relocated to its permanent home in Ihiagwa, Owerri West. In February 1993, JAMB assigned Imo State University to the first group of pupils. In 1992, the university was legally re-established at the Lake Nwaebere site with approval from the National University Commission. Many departments and faculties of Imo State University now graduate students annually. First-, second-, and third-class graduates are all produced by the university. These students complete a year of National Youths Service Corps (NYSC) before entering the workforce. The institution often gives awards and automatic jobs to the top graduating students.

3.3 Population of the Study

A total of 1351 public health students, both male and female, at Imo State University in Owerri make up the study's target group. Every student in the four public health courses that were chosen made up the study's accessible population. The accessible population is the group of study participants who are within the researcher's reach, while the target population

is all members of the designated group to which the inquiry pertains, according to Nworgu (2006).

Table 3.1: Distribution of the Students Population

| S/N | Levels | Population of public Health students |
|-----|--------------|--------------------------------------|
| 1 | 100 Level | 361 |
| 2 | 200 Level | 350 |
| 3 | 300 Level | 339 |
| 4 | 400 Level | 301 |
| | Total | 1351 |

3.4 Sampling size / Sampling Technique

3.4.1 Sample Size

The sample size used for the study was estimated using the Taro-Yamane (1967) simplified formula for finite population proportions.

$$\text{Sample size, } n = \frac{N}{1+N(e)^2}$$

Where,

n = Sample size

N= Size of population

e = assumed error of 0.05

$$N = 361 + 350 + 339 + 301 = 1351$$

95% confidence level and $e= 0.05$ are assumed.

$$n= 1351 / 1+1351 (0.05)^2 = 308.6$$

$$\text{Attrition rate} = 10\% \text{ of sample size } (308.6) = 30.8$$

Therefore, sample size (n) + attrition rate = $308.8 + 30.8 = 340$ students.

3.4.2 Sample/Sampling Technique

Stratified random (proportionate) sampling was the sample method used in this investigation.

Purposive sampling was used to choose respondents from each stratum after the respondents were divided into strata according to levels.

The strata are;

100 level, 200 level, 300 level and 400 level

$$\text{Proportionate sampling} = \frac{N_s}{N} \times n$$

N_s =Total number of students in the level.

n = sample size

N = Total population.

$$\text{Proportional sampling for 100 level students} = 361 / 1351 \times 340 = 92$$

$$\text{Proportional sampling for 200 level students} = 350 / 1351 \times 340 = 88$$

$$\text{Proportional sampling for 300 level students} = 339 / 1351 \times 340 = 85$$

$$\text{Proportional sampling for 400 level students} = 301 / 1351 \times 340 = 75$$

$$\text{Total proportionate} = 92 + 88 + 85 + 75 = 340 \text{ students.}$$

3.4.3 Inclusion Criteria

1. Must be enrolled at Imo State University's Public Health department at any of the four (4) levels in Owerri, Imo State.

3.4.4 Exclusion Criteria

1. Must be a student within the four (4) levels in the department of Public Health, Imo State University, Owerri, who was not feeling well within the period of study.

3.5 Instrument for Data Collection

Upon doing a comprehensive literature analysis, the researcher created a data collecting tool named "the Attitude and Perception Towards Virtual Learning System Among Public Health Students Of Imo State University, Owerri, The questionnaire was divided into four parts, A, B, C, and D, and was written in English. The survey was created using a 4-point Likert scale, with the following choices: Agree, Strongly Disagree, Disagree, and Strongly Agree.

Section A includes the socio-demographic profiles of the respondents consisting of gender, age, ethnicity, level, monthly income with 5 items.

Section B includes information regarding virtual method of learning with 7 items.

Section C includes perception of students toward virtual learning system with 9 items.

Section D includes attitude of students toward virtual learning system with 10 items.

3.6 Validation of the instrument

The project supervisor authorised the questionnaire, and three (3) lecturers and professionals from the Department of Public Health verified it. Technology Federal University, Owerri (FUTO). The validators were asked to access the instrument in accordance with the study's goals to verify that they were suitable for supplying the precise answers required for the investigation. Their recommendations and critiques were taken into consideration while

changing the data collection tool. The project manager received the copies of the verified survey for final clearance.

3.7 Reliability of the instrument

The instrument's dependability was established using the retest procedure. Students from Federal University of Technology, Owerri (FUTO) who had traits in common with IMSU students were given twenty (20) copies of the test.

The administration was conducted in person. The single administration's findings were split into two equal halves, or odd and even numbers, denoted by (x) and (y). Spearman The correlation between the two distinct scores (x) and (y) was calculated using the rank order correlation coefficient. The instrument's reliability was assessed using an index score of 0.74.

3.8 Method of Data Collection

The Project Supervisor wrote a letter of introduction that was sent to the Vice Chancellor and the head of the public health department at IMSU via her secretary. This letter was intended to provide the research team permission to enter his department in order to gather data. To guarantee a high return rate, distribution and collection were carried out in person and on the spot.

3.9 Method of Data Analysis

For the research topics, the data were analysed using descriptive statistics of frequency counts and percentages, and the hypotheses were tested at the 0.05 level of significance using chi-square (2).

3.10 Ethical Consideration/ Informed Consent

The Department of Public Health at the Federal University of Technology in Owerri, Imo State, approved the research. Furthermore, approval was requested from the head of the

department of public health at Imo State University in Owerri, Imo State, as well as the university vice chancellor. Additionally, the participants provided their permission before to the collection of data.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Results

This chapter deals with the data analysis and presentation of results.

Table 4.1: Socio-demographic Data of the respondents.

| Age | Frequency | Percentage |
|--------------------------|------------------|-------------------|
| 15 – 20 years | 205 | 60.29 |
| 21 – 25 years | 89 | 26.18 |
| 26 – 30 years | 35 | 10.29 |
| > 30 years | 11 | 3.24 |
| Total | 340 | 100.0 |
| Gender | Frequency | Percentage |
| Male | 31 | 9.12 |
| Female | 309 | 90.88 |
| Total | 340 | 100.0 |
| Level | Frequency | Percentage |
| 100 | 336 | 100.56 |
| 200 | 350 | 102.94 |
| 300 | 339 | 99.71 |
| 400 | 301 | 88.53 |
| Total | 340 | 100. |
| Ethnic Group | Frequency | Percentage |
| Igbo | 311 | 91.47 |
| Yoruba | 15 | 4.41 |
| Hausa | 5 | 1.47 |
| Others | 9 | 2.65 |
| Total | 340 | 100.0 |
| Monthly Allowance | Frequency | Percentage |
| ₦20,000 – 30,000 | 185 | 54.41 |
| ₦31,000 – 40,000 | 84 | 24.71 |
| ₦41,000 – 50,000 | 51 | 15.00 |
| ₦51,000 and above | 20 | 5.88 |
| Total | 340 | 100.0 |

Table 4.1 shows the socio-demographic data of the respondents. As regards to the ages of the respondents, majority 205(60.29%) were within the age range of 15-20 years. This was followed by 89(26.18%) who were within the age range of 21-25 years, followed by 35(10.29%) who were in the age range of 26-30 years. The least was 11(3.24%) who were within the age range of >30 years (see table 1).

As regards to the variable gender, majority 31(9.12%) were females while 309(90.88%) were males (see table 1).

As regards to the level, majority 350(102.94%) were in 200 level. This was followed by 336(100.56%) who were in 100 level, followed by 339(99.71%) who were in 300 level. The least was 301(88.53%) who were in 400 level (see table 1).

As regards to the ethnic group, majority 311(91.47%) were from the Igbo tribe. Followed by 15(4.41%) who were from other groups in Nigeria, followed by 5(1.47%) who were Hausa's. The least was 9(2.65%) who were Yoruba's. (see table 1)

As regards to the monthly allowance, majority 188(54.41%) received between ₦20,000 – 30,000. This was followed by 84(24.716%) who received between ₦51,000 and above, followed by 51(15.00%) who received between ₦41,000 – 50,000. The least was 20(5.88%) who received between ₦31,000 – 40,000 (see table 1).

Table 4.2: information Regarding Virtual Learning System

| Have you ever been in virtual learning environment | Frequency | Percentage |
|---|------------------|-------------------|
| Yes | 304 | 89.41 |
| No | 36 | 10.59 |
| Total | 340 | 100.0 |
| If Yes which Platform | Frequency | Percentage |
| Zoom | 275 | 80.88 |
| WhatsApp | 45 | 13.24 |
| Google Meet Classroom | 12 | 3.53 |
| Telegram | 18 | 5.29 |
| Total | 340 | 100.0 |
| What device was used for the virtual learning? | Frequency | Percentage |
| Laptop | 46 | 13.53 |
| Smartphone | 254 | 74.71 |
| Tablet | 21 | 6.18 |
| IPad | 19 | 5.59 |
| Total | 340 | 100.0 |
| What was your source of internet connection? | Frequency | Percentage |
| Mobile Data | 315 | 92.65 |
| Wi-Fi | 25 | 7.35 |
| Satellite | 0 | 0 |
| Total | 340 | 100.0 |
| Do you like virtual learning system? | Frequency | Percentage |
| Yes | 306 | 90.00 |
| No | 34 | 10.00 |
| Total | 340 | 100.0 |
| if No, tell us why | Frequency | Percentage |
| Difficulty in hearing | 37 | 10.88 |
| Difficulty in Understanding the Content | 13 | 3.82 |
| Electricity Problem | 20 | 5.88 |
| Unstable Internet | 270 | 79.41 |
| Total | 340 | 100.0 |

Table 4.2 revealed the analysis of the responses of the respondents on the information regarding virtual system of learning among public health students in Imo state University Owerri

As regards to the responses of the respondents been in a virtual learning environment, majority 304(89.41%) have been in a virtual learning environment, while 36(10.59%) have not been in a virtual learning environment (see table 4.2).

As regards to the platform were the respondents received their virtual learning, majority 375(80.88%) used zoom. This was followed by 45(13.24%) who used WhatsApp. The least were 12 (3.55%) who used google meet classroom and telegram (see table 4.2).

As regards to the virtual learning device used, majority 254(74.71%) used smartphone. This was followed by 46(13.53%) who used laptop, followed by 21(6.18%) who used tablet. The least was 19(5.59%) who used iPad (see table 4.2).

As regards to the source of internet connection, majority 315(92.65%) used mobile data, this was followed by 25(7.35%) who used WI-FI. The least was 0(0%) who used satellite.

As regards to when asked if they have ever faced any challenge during the virtual class, majority 306(99.00%) responded 'yes' in affirmations to facing problems while 34(10.00%) said they have never faced any problem during virtual class.

As regards to the problems been faced by respondents who answered 'yes' during the virtual class session, majority, 270(79.41%) faced unstable internet connection. This was followed by 10.82%) who faced difficulty in hearing, followed by 20(5.88%) who faced difficulty in understanding the content. The least was 13(3.82%) who faced electricity problem.

Table 4.3: Attitude of Students Towards Virtual System of Learning

| S/N | STATEMENTS | SA N (%) | A N (%) | D N (%) | SD N (%) | Mean \pm S. D |
|-----|---|----------------|---------------|---------------|--------------|--------------------|
| 1 | Students who study online get more used to technology. | 74 (49.0) | 46 (30.5) | 13 (12.6) | 12 (7.9) | 3.21 \pm .947 |
| 2 | The issues with online and virtual learning are increasingly numerous. | 29 (19.2) | 61 (40.4) | 36 (23.8) | 25 (16.6) | 2.62 \pm .978 |
| 3 | Virtual learning is ineffective when computers are slow and internet connections are bad. | 59 (39.1) | 61 (40.4) | 19 (12.6) | 12 (7.9) | 3.11 \pm .910 |
| 4 | Virtual learning adds excitement and enjoyment to the learning process. | 49 (32.5) | 46 (30.5) | 24 (15.9) | 32 (21.2) | 2.74 \pm 1.128 |
| 5 | I may ask my instructor questions about the topic and get a prompt answer online. | 42 (27.8) | 49 (32.5) | 24 (15.9) | 36 (23.8) | 2.64 \pm 1.128 |
| 6 | The efficiency of computer-mediated/online learning is ensured by computer proficiency and usability. | 39 (25.8) | 48 (31.8) | 28 (18.5) | 36 (23.8) | 2.60 \pm 1.115 |
| 7 | I have trouble understanding the instructor when I use the virtual learning approach. | 67 (44.4) | 53 (35.1) | 23 (15.2) | 8 (5.3) | 3.19 \pm .882 |
| 8 | I normally have a positive attitude towards learning via virtual means. | 55 (36.4) | 65 (43.0) | 23 (15.2) | 8 (5.3) | 3.11 \pm .850 |
| 9 | Online education is more convenient and superior than traditional classroom instruction. | 50 (33.1) | 28 (18.5) | 23 (15.2) | 50 (33.1) | 2.52 \pm 1.259 |
| 10 | I feel confident whenever I use virtual learning platform | 39 (25.8) | 61 (40.4) | 25 (16.6) | 26 (17.2) | 2.75 \pm 1.028 |

Table 4.3 sought to provide answer to research question 4. The table's data showed that items 1 through 10 had a cluster mean of 2.85. This score is higher than the benchmark of 2.50 on a 4-point rating system. This suggests that respondents' opinions of the virtual learning system among Imo State University Owerri public health students were favourable.

Strong agreement was expressed by the largest percentage of respondents, 74 (49.0%). This was followed by 46 (30.5%) who agreed, 13 (12.6%) who opposed, and 12 (7.9%) who strongly disagreed that pupils get more used to technology via online learning.

About 61 (40.4%) of the respondents agreed. This was followed by almost one-quarter 36 (23.8%) who disagreed, followed by 29 (19.2%) who strongly agreed and 25 (16.6%) who strongly disagreed that there are more problems associated with virtual/online learning.

Majority of the respondents 61 (40.4%) agreed. This was followed by 59 (39.1%) who strongly agreed, followed by 19 (12.6%) who disagreed and 12 (7.9%) who strongly disagreed that slow computer and poor internet connections makes virtual learning inefficient.

About one-third 49 (32.5%) of the respondents strongly agreed that virtual learning makes learning enjoyable and interesting. This was followed by 46 (30.5%) who agreed, followed by 32 (21.2%) who strongly disagreed and 24 (15.9%) who disagreed that virtual learning makes learning enjoyable and interesting.

Approximately one-third of the respondents (32.5%) agreed with the statement that I may ask my instructor questions about the topic and get a prompt answer online. The statement that I can ask my instructor pertinent questions and get a prompt answer online was followed by 42 (27.8%) who strongly agreed, 36 (23.8%) who strongly disagreed, and 24 (15.9%) who disagreed. Table 4.

The majority of 48 (31.8%) respondents felt that computer proficiency and usability guarantee the success of computer-mediated/online learning. This was followed by 39 (25.8%) who strongly agreed, followed by 36 (23.8%) who strongly disagreed and 28 (18.5%) who disagreed agreed that the Usability and computer proficiency guarantee the efficacy of online and computer-mediated learning. (see table 4).

The highest fraction of respondents 67 (44.4%) strongly agreed. This was followed by 53 (35.1%) who agreed, followed by 23 (15.2%) who disagreed and 8 (5.3%) who strongly disagreed to the statement that I find it difficult to understand the lecturer with virtual system of learning (see table 4).

Of the respondents, around 65 (44.0%) agreed with the statement that I have a generally positive attitude towards employing virtual learning methods. Table 4 shows that 55 (36.4%) strongly agreed with the statement that I have a generally positive attitude towards utilising virtual learning systems, followed by 23 (15.2%) who disagreed and 8 (5.3%) who severely disagreed.

About one-third 50 (33.1%) of the respondents strongly agreed and strongly disagreed to the statement that online learning is easier and better than classroom learning. This was followed by 28 (18.5%) who agreed, and 23 (15.2%) who disagreed to the statement that online learning is easier and better than classroom learning (see table 4).

Majority of the respondents 61 (40.4%) agreed. This was followed by 39 (25.8%) who strongly agreed, followed by 26 (17.2%) who strongly disagreed and 25 (16.6%) who disagreed to the statement that I feel confident whenever I use virtual learning platform (see table 4).

Table 4.4: Perception of Students Towards Virtual System of Learning.

| S/N | STATEMENTS | SA N (%) | A N (%) | D N (%) | SD N (%) | Mean \pm S. D |
|--|--|----------------------|----------------------|----------------------|----------------------|----------------------------------|
| 1. | Assess to the internet is the most important component for virtual learning. | 85 (56.3) | 46 (30.5) | 12 (7.9) | 8 (5.3) | 3.38 \pm .85 |
| 2. | The primary source for learning with the virtual technique is an assessment gadget. | 37 (24.5) | 62 (41.1) | 30 (19.9) | 22 (14.6) | 2.75 \pm .99 |
| 3. | One effective teaching strategy is virtual learning. | 64 (42.4) | 67 (44.4) | 12 (7.9) | 8 (5.3) | 3.24 \pm .81 |
| 4. | Utilising a virtual learning environment requires highly developed technical skills | 56 (37.1) | 32 (21.2) | 28 (18.5) | 35 (23.2) | 2.72 \pm 1.19 |
| 5. | Students need to be trained before they undergo any virtual learning activity | 42 (27.8) | 46 (30.5) | 28 (18.5) | 35 (23.2) | 2.63 \pm 1.12 |
| 6. | Students learn more easily when they use online learning resources. | 46 (30.5) | 38 (25.2) | 32 (21.2) | 35 (23.2) | 2.63 \pm 1.15 |
| 7. | Virtual learning environment increases students creativity, thinking skills & is time saving | 72 (47.7) | 59 (39.1) | 16 (10.6) | 4 (2.6) | 3.32 \pm .769 |
| 8. | A virtual learning environment improves one's ability to solve problems. | 60 (39.7) | 71 (47.0) | 16 (10.6) | 4 (2.6) | 3.24 \pm .746 |
| 9. | Virtual learning lowers the cost of education for students. | 64 (42.4) | 42 (27.8) | 20 (13.2) | 25 (16.6) | 2.96 \pm 1.10 |
| Cluster mean of the Respondents | | 58 (38.7) | 51 (34.1) | 22 (14.2) | 19 (13.0) | 3.00 \pm .97 |

Table 4.4 sought to provide answer to research question 3. Data from the table revealed that the cluster mean of items 1 – 9 was 3.00. This is above the bench mark score of 2.50 of a 4 – point rating scale. This implies that the respondents had a positive perception towards toward virtual system of learning among public health students in Imo state University Owerri.

The highest fraction of respondents 85 (56.3%) strongly agreed. This was followed by 46 (30.5%) who agreed, followed by 12 (7.9%) who disagreed and 8 (5.3%) who strongly disagreed to assess to the internet being the most important component of virtual learning.

About 62 (41.1%) of the respondents agreed. This was followed by one-quarter 37 (24.5%) who strongly agreed, followed by 30 (19.9%) who disagreed and 22 (14.6%) who strongly disagreed to assess to a device is the main source for getting education via the virtual system.

About 67 (44.4%) of the respondents agreed that Virtual learning is an efficient teaching method. This was followed by 64 (42.4%) who strongly agreed, followed by 12 (7.9%) who disagreed and 8 (5.3%) who strongly disagreed to virtual learning being an efficient teaching method.

56 (37.1%) of the respondents, or almost one-third, strongly agreed. This was followed by 35 (23.2%) who strongly disagreed, followed by 32 (21.2%) who agreed and 28 (18.5%) who disagreed that virtual learning environment needs advanced technical knowledge to use.

Majority of the respondents 46 (30.5%) agreed. his was followed by 42 (27.8%) who strongly agreed, followed by 35 (23.2%) who strongly disagreed and 28 (18.5%) who disagreed that Training is required before students participate in any virtual learning activities.

Majority 46 (30.5%) of the respondents strongly agreed that the use of online learning methods makes learning easier for students. This was followed by 38 (25.2%) who agreed, followed by 35 (23.2%) who strongly disagreed and 32 (21.2%) who disagreed to the motion that the use of online learning methods makes learning easier for students.

About half 72 (47.7%) of the respondents strongly agreed. This was followed by 59 (39.1%) who agreed, followed by 16 (10.6%) who disagreed and 4 (2.6%) who strongly disagreed to the statement that virtual learning environment increases student's creativity, thinking skills & is time saving.

About half 71 (47.0%) of the respondents agreed that virtual learning environment enhances problem - solving skills. This was followed by 60 (39.7%) who strongly agreed, followed by 16 (10.6%) who disagreed and 4 (2.6%) who strongly disagreed that virtual learning environment enhances problem-solving skills.

Majority 64 (42.4%) of the respondents strongly agreed that virtual learning reduces students' educational cost. This was followed by 42 (27.8%) who agreed, followed by 25 (16.6%) who strongly disagreed and 20 (13.2%) who disagreed that virtual learning reduces students' educational cost.

4.1.1 Testing Hypotheses

A corresponding hypothesis formulated to further address the research question 3 is;

Hypotheses One

H₀ . There is no significant difference between the mean score of male and female students and their attitude toward virtual learning system in Imo State University, Owerri, Imo state.

H₁ - There is significant difference between the mean score of male and female students and their attitude toward virtual learning system in Imo State University, Owerri, Imo state.

Table 4.5: T-test Analysis of male and female students on their attitudes towards virtual learning system.

| Respondents | N | \bar{X} | SD | DF | t.cal | P-value | Remarks |
|--------------------|----------|-----------------------------|-----------|-----------|--------------|----------------|----------------|
| Male | 32 | 2.82 | .437 | | | | |
| | | | | 149 | .301 | .764 | NS |
| Female | 119 | 2.86 | .635 | | | | |

The data in Table 4.6 indicates a t-calculated value of .301 and significant p-value of .614. Since the p-value of .764 is greater than 0.05 level of significant, the null hypothesis is therefore accepted and the alternate hypotheses rejected. Consequently, there is no significant different between the mean score of male and female students' and their attitudes toward virtual learning system in Imo State University, Owerri, Imo state.

Hypotheses Two

H₀. There is no significant difference on the mean score perception of male and female students toward virtual learning systems in Imo State University, Owerri, Imo State.

H₁ - There is significant difference on the mean score perception of male and female students toward virtual learning systems in Imo State University, Owerri, Imo state.

Table 4.5: T-test Analysis of male and female students on their perception of virtual learning system

| Respondents | N | \bar{X} | SD | DF | t.cal | P-value | Remarks |
|--------------------|----------|-----------------------------|-----------|-----------|--------------|----------------|----------------|
| Male | 32 | 3.03 | .600 | | | | |
| | | | | 149 | -.506 | .614 | NS |
| Female | 119 | 3.00 | .492 | | | | |

The data in Table 4.5 indicates a t-calculated value of -.506 and significant p-value of .614. Since the p-value of .614 is greater than 0.05 level of significant, the null hypothesis is therefore accepted and the alternate hypotheses rejected. Consequently, there is no significant different on the mean score perception of male and female students toward virtual learning systems in Imo State University, Owerri, Imo state

4.2 Discussion of the findings

The Objective of this study was to determine the attitude and perception of students towards virtual learning system among public health students in Imo state University, Owerri, Imo state. This study is guided by three (4) specific objectives. The respondents involve both male and female students of public health, Imo state University Owerri with a total sample number (n) of 340.

4.2.1 Socio-economic Variables of the respondents

The socio-economic data derived from this study's findings illustrates the age distribution, gender, ethnicity, students' level and monthly allowance. The information indicates that most of the surveyed students were female (78.8%) and the rest were males (21.2). The majority of those surveyed were in the 15–20 age bracket (67.5). This is in consonance with the study

from Chaney(2020) were majority (70.5) of the respondents were females and about one-third (29.5) were males The data further showed that most of the students sampled belonged to the Igbo tribe (82%) , few were from the Yoruba tribe (14.6), few from other tribes (27.2%), and from the Hausa tribe (4.0%). This is in contrast with findings from Adijaya et al (2018) were majority (70.5%) were from the Yoruba tribe. The respondents were predominantly 200 level students (58.3%). This is in contrast with the findings from Kennedy & Victor (2020). The data also shows that most of the students surveyed received ₦20,000 – 30,000 as their monthly allowances. The results of this research based on the respondents' ages are consistent with those of Alam et al. (2012), who found that young students under 30 favoured this remote learning method (virtual learning).

4.2.2 Information regarding Virtual Learning system.

Analysis of the responses of the respondents on the information regarding virtual system of learning among students in Imo State University, Owerri, Imo state revealed that majority of the respondents 137 (90.7%) have been in a virtual classroom environment, this is in line with Oladele et al (2022) were most of the respondents have attended virtual learning class. However, the study further showed that the platform were the respondents received their virtual learning were mostly zoom platform 98 (64.9%). Similarly, majority of the students surveyed 89 (58.9%), used Smartphone as their virtual learning devices. According to a research on views and preferences of virtual learning under COVID-19 in India, the majority of respondents (80.2%) chose to use a smartphone for online learning. This is consistent with the results of Muthuprasad et al., (2021). Additionally, mobile data 118 (78.1%) was seen to be the students' major sources of internet. Majority of the students 138(91.4%) agreed that they have faced challenges during virtual learning and 52(27.8%) indicated unstable internet as their major problemfaced during virtual learning session. This is similar to the findings

from Yassine (2021) were majority had unstable internet and almost one-third had problem with electricity.

4.2.3 Perception of students towards virtual learning system.

Data from the study revealed that the respondents had a positive perception towards virtual learningsystem among public health students in Imo state University Owerri, Imo state.

A corresponding hypothesis formulated to further address the research question 3 showed that there is no significant different on the mean score perception of male and female students toward virtual learning systems in Imo State University, Owerri, Imo state.

. This conclusion runs counter to that of Adijaya & Santosa (2018), who found that students thought online learning did not provide the best opportunity for interaction between students and lecturers when compared to conventional classroom settings. The reason for this might be because those students prefer in-person instruction over online learning. Because the directions were clear, they were able to change after only encountering challenges at the start of the meeting. The results of this investigation also go counter to those of Abbasi et al. (2020), who found that students feel negatively about online education.

4.2.4 Attitude of students towards virtual learning system.

According to the study's findings, public health students at Imo State University Owerri generally had a favourable opinion of virtual learning.

At Imo State University in Owerri, Imo state, there is no discernible difference in the mean scores of male and female students and their opinions on the virtual learning system, according to a related hypothesis developed to further answer research question 4.

According to Muthuprasad et al. (2021), students had a positive attitude and were eager to pick their online course throughout the pandemic. This is consistent with their results. The majority of respondents said they preferred using their smartphones for online education.

4.3 Implication of findings to Public health

The implications of this study could be quite significant. Since the study finds that public health students in Imo state University Owerri have a positive attitude and perception towards virtual learning systems, it could lead to increased adoption of these systems in public health education. This could ultimately improve the quality of health education and help to prepare public health students for the modern healthcare environment, which increasingly relies on technology. This implies that since public health personnel are receptive to virtual learning system, it could lead to an increase in the number of online public health programs available. These programs could make it easier for public health to continue their education, which could ultimately improve community care. Additionally, the use of virtual learning systems could help to address the shortage of public health education faculty, as these systems could allow for more efficient use of faculty time and resources.

The study also highlights the need for public health students to be comfortable with technology and to have the skills to use virtual learning systems effectively. It also highlights the need for public health educators to be trained in the use of virtual learning system, so they can effectively teach and support public health personnel in their use.

Another implication of the study could be an increase in the use of virtual reality (VR) and augmented reality (AR) in public health education. These technologies could provide a more immersive and interactive learning experience for public health students, which could lead to improved learning outcomes. VR and AR could allow public health professionals to practice and learn in a safe and controlled environment, which could reduce the risk of mistakes in the

real world. It could also help public health to develop their clinical judgment and decision-making skills. Furthermore, by understanding public health students' attitudes and perceptions towards virtual learning system, it is possible to develop strategies to increase their use and to improve the quality of public health education. This can contribute to enhancing community outcomes and the overall quality of healthcare.

4.4 Limitations of the Study

The major constraints faced during the study are;

1. **Financial constraints:** One of the major drawbacks experienced during the course of this research work was the limitation of funds. There weren't enough funds for the bulk printing of the research work.
2. **Paucity of literature:** As this concerns student's perception and attitudes towards virtual learning systems, being that it isn't really a straight forward activity in retrieving relevant information for accomplishing the objective of this study from students.
3. **Data / Statistical constraints:** The study was a small-scale study, so the results may not be representative of all public health students and this was a result of the outcome of the sampling technique used.
4. **Geographical constraints:** As the study focused solely on students from Imo State University in Owerri, Imo State, its findings may not be relevant to other schools, states, or countries.
5. The study only looked at attitudes and perceptions towards virtual learning systems, and not their actual use.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

In conclusion, this study highlights the attitudes and perceptions towards virtual system of learning among public health students in Imo State University, Owerri, Imo State.

The majority of the respondents have been in a virtual classroom environment and possesses the required information for virtual learning. This study also showed that students have positive attitudes and perceptions about the virtual learning system. As the study's findings indicated, for students to engage effectively in this learning system and enhance their skills, they must be adequately equipped with the requisite knowledge and skills, and provided with basic infrastructure like computers and internet access. This intervention can also help to reduce the challenges students will face from this system of learning

5.2 Recommendations

Based on the findings of the study the following are recommended;

- i. Public health associations and other stakeholders in the health sector should always Incorporate more virtual learning systems into their programs, use a variety of virtual learning systems, including online learning, VR, and AR, provide support and training for students and faculty to use virtual learning systems effectively and evaluate the effectiveness of virtual learning systems to ensure they are meeting the needs of students
- ii. It is important that Public health personnel that will want to adopt the virtual learning platform for students to learn should endeavor to make sure that the virtual learning content is of high quality and is aligned with learning objectives. They should also

ensure that they provide training and support for students to use virtual learning systems effectively.

- iii. Public health personnel should also encourage collaboration and communication between public health personnel and educators to promote the use of virtual learning system. They should also make virtual learning easy by making virtual learning systems more accessible and user-friendly for Public health professionals.
- iv. Promoting the use of virtual learning systems can be done through marketing and communication campaigns and providing incentives for public health professionals to use virtual learning systems, such as continuing education credits or recognition for professional development.
- v. It is also important to include virtual learning systems in public education accreditation standards. Incorporating virtual learning systems into public health curricula at undergraduate and graduate levels, and conducting more research on the effectiveness of virtual learning systems in public health education is also important.

5.3 Contribution to Knowledge

The study showed that majority of the respondents have been in a virtual classroom environment and possesses the required information for virtual learning. This study also showed that most public health students of Imo state university students have positive attitude and positive perception towards virtual learning system. The students also showed that majority of the participants make use of smart phones and they engage in online learning platforms regularly. The result finally showed that poor network/ internet connection is a key factor that contribute in students not participating in an online learning system as it demands.

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OPERATIONAL DEFINITION OF TERMS

PERCEPTION: It refers to the way in which virtual method of learning is regarded, understood and interpreted

ATTITUDE: It refers to the way of thinking or feeling regarding virtual system of learning that affects a person's behavior

VIRTUAL: It refers to the absence of traditional (physical) classroom environment

LEARNING: It refers to the knowledge or skill acquired by set of instructions

VIRTUAL LEARNING: It refers to the acquisition of knowledge or skill in the absence of traditional (physical) classroom environment

STUDENTS: It refers to people who are in various levels of education in the department of public health Imo State University, Owerri, Imo State.

APPENDICES

Appendix A: Introduction and Consent Letter

Department of Public Health
Federal University of Technology, Owerri,
Imo State.

25th August, 2024.

TOPIC:

**ATTITUDE AND PERCEPTION TOWARDS VIRTUAL LEARNING SYSTEM
AMONG PUBLIC HEALTH STUDENTS OF IMO STATE UNIVERSITY, OWERRI,
IMO STATE**

Dear respondent,

The researcher is a postgraduate student of the Department of Public Health, School of Health Technology, Federal University of Technology, Owerri, Imo State carrying out a research on the: attitude and perception towards virtual learning system among public health students of Imo State University, Owerri, Imo State.

I hereby request you to kindly complete this questionnaire for the study and to answer the questions truthfully. The researcher is just carrying out academic study and has nothing to do with governmental, political or religious affiliations. Please note that every information supplied will be treated with absolute confidentiality. Please you are requested to respond to each of the questions as objectively as possible.

Thanks for your anticipated co-operation.

Yours Sincerely,

Iwunze Chideraa Judith

REG NO: 20134873868

Student

Dr. (Mrs) U.W. Dozie

Project Supervisor

Appendix B: Questionnaire

SECTION A: SOCIO-ECONOMIC PROFILE OF RESPONDENTS

Instruction: Please circle (○) the alphabet that best represent your answer:

1. Which of these represent your age bracket?

- a. 15 – 20years
- b. 21 - 25years
- c. 26 – 30years
- d. 31 and aboveyears

2. Gender?

- a. Male
- b. Female

3. Which level are you?

- a. 100 Level
- b. 200 Level
- c. 300 Level
- d. 400 Level

4. What is your religion?

- a. Christianity
- b. Islam
- c. African Traditional Religion
- d. Free thinkers

5. What is your Marital Status?

- a Single
- b Married
- c Separated
- d Divorce
- e Others (specify)

6 What is your allowance per month?

- a Below ₦20,000
- b ₦20,000 – ₦30,000
- c ₦41,000 – ₦50,000
- d ₦50,000 an above

SECTION B: INFORMATION REGARDING VIRTUAL SYSTEM OF LEARNING

1. Have you ever been in a virtual learning environment / platform?

a. Yes

b. No

2. If yes, which platform did you use?

- a. Zoom
- b. WhatsApp
- c. Google meet classroom
- d. Telegram

3. What device was used for the virtual learning?

- a. Laptop
- b. Smartphone
- c. Tablet
- d. iPad

4. What was your source of internet connection?

- a. Mobile data
- b. Wi-Fi
- c. Satellite

10. Have you faced any problems during the virtual class?

- a. Yes
- b. No

11. If yes, what was the problem?

- a. Difficulty in hearing
- b. Difficulty in understanding the content
- c. Problem of electricity
- d. Unstable internet.

SECTION C: ATTITUDE OF PUBLICHEALTH STUDENTS, IMO STATE UNIVERSITY, OWERRI TOWARDS VIRTUAL LEARNING SYSTEM

Score Scale:

Strongly Agree (SA) – 4 points

Agree (A) – 3 points

Disagree (D) – 2 points

Strongly Disagree (SD) – 1 point

| S/N | Statements | Strongly Agree | Agree | Disagree | Strongly Disagree |
|-----|--|----------------|-------|----------|-------------------|
| 21. | Online learning makes the students more accustomed [familiar] to technology | | | | |
| 22. | There are more problems associated with virtual/online learning | | | | |
| 23. | Slow computer and poor internet connections makes virtual learning inefficient | | | | |
| 24. | Virtual learning makes learning | | | | |

| | | | | | |
|-----|--|--|--|--|--|
| | enjoyable and interesting | | | | |
| 25. | I can ask subject-related questions to my teacher and receive a quick response quickly online | | | | |
| 26. | The usability and expertise in computers ensure the effectiveness of computer-mediated/online learning | | | | |
| 27. | I find it difficult to understand the lecturer with virtual method of learning | | | | |
| 28. | I have a generally favorable attitude towards using virtual method of learning | | | | |
| 29. | Online learning Is easier and better than classroom learning | | | | |
| 30. | I feel confident whenever I use virtual learning platform | | | | |

SECTION D: PERCEPTION OF PUBLICHEALTSTUDENTS, IMO STATE UNIVERSITY, OWERRI TOWARDS VIRTUAL LEARNING SYSTEM

Score Scale:

Strongly Agree (SA) – 4 points

Agree (A) – 3 points

Disagree (D) – 2 points

Strongly Disagree (SD) – 1 point

| S/N | Statements | Strongly Agree | Agree | Disagree | Strongly Disagree |
|-----|--|----------------|-------|----------|-------------------|
| 12. | Assess to the internet is the most important component for virtual learning. | | | | |
| 13. | Assess to a device is the main source for getting education via the virtual method | | | | |
| 14. | Virtual learning is an efficient teaching method | | | | |
| 15. | Virtual learning is a learning environment which needs advanced technical knowledge to use | | | | |
| 16. | Students need to be trained before they undergo any virtual learning activity | | | | |

| | | | | | |
|-----|---|--|--|--|--|
| 17. | Use of online learning methods makes learning easier for students | | | | |
| 18. | Use of virtual learning increases student's creativity, thinking skills and time saving | | | | |
| 19. | Virtual learning environment enhances problem-solving skills | | | | |
| 20. | Virtual learning reduces student's educational cost | | | | |

Appendix C: Charts

