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Unveiling the Future of Higher Education: TAM's Insights into Nigerian Lecturers' Perspectives on Technology Integration"

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ABSTRACT

It is crucial for educational institutions to incorporate technology. A number of things must be thought about for it to be fully utilized in educational institutions. Keeping this in mind, the purpose of this research is to put the perspectives of Nigerian university professors on the benefits and drawbacks of using technology in the classroom, as well as the obstacles they faced, into context. An explanatory descriptive theory called the Technology Acceptance Model (TAM) is used in this study. Educators' perceptions of technology's benefits in the classroom fell into two broad categories: compensating and potentializing. The first group includes the widening and improving of available communication channels; the latter includes doing away with obstacles that arise in person and promoting the development of theoretical concepts. There are a number of perceived drawbacks, including but not limited to the following: faculty training issues, a lack of technical support, infrastructure, administrative problems, and personal barriers, such as resistance to change and difficulty using the technology etc. The study shed light on the need for reform in Nigerian institutions by investigating the views, experiences, and worries of these professors. Looking into the advantages, disadvantages and obstacles they face.

Keywords: Nigerian university, Lecturers, TAM Theory, Technology Integration

1. INTRODUCTION

1.1 Technology Integration in Higher Education

Nations economic and social growth depends on a larger extent on its population and knowledge generated by its institutions. In this sense, enhancing higher education's capacity is crucial to creating and maintaining the nation's current knowledge base. The World Conference on Higher Education by UNESCO in 2009, which took place in Paris, concluded that higher education is a public good and that all government parastatals should be responsible for it as well as provide financial support for it (UNESCO 2009). Additionally, the conference's document views higher education as crucial for all educational levels since it provides the foundation for research, innovation, and creativity. Recent studies have demonstrated the potential benefits of higher education in promoting environmental sustainability and combating poverty (UNESCO, 2009).

Nigeria is a growing country dealing with several economic and social difficulties; therefore, access to higher education is critical for its citizens. Nigeria's higher education institutions are seeing an increase in student enrollment. According to the 2019 higher education census, Nigeria had 1.8 million full-time undergraduate university students (Statista Research Department 2022). The majority of them went to government universities, where 1.2 million people registered. Private universities had approximately 103 thousand students.

According to Santos (2014) and Daudt and Behar (2013), they opined that one of the factors responsible for a high percentage of drop out in students in higher education is the obsolete teaching methodologies and practices in most institutions, which is a result of lack of motivation and highlights the need for alternative methods that can meet the requirements of students who are highly connected to the digital age. The use of technology in post-secondary education is crucial for improving the quality of education as well as for facilitating collaborations and information sharing between higher education institutions on a national and international level, according to reports from the 2009 UNESCO conference on higher education, which was held in Paris.

COLL and his coauthors contend that technology's symbolic aspect is what gives it promise (COLL et al., 2010). Digital technology acts as a mediator between students and information and supports educators' instructional activities. Digital technology's use of symbols allows for the development of environments that expand on human search, access, presentation, representation, processing, transmission, and sharing capabilities while integrating established semiotic systems. According to numerous academics (M Vedechkina · 2021; S Schneider · 2021; Kozulin & Presseisen, 1995; Vygotski, 1984/2007, 1987/2008), digital technologies are psychological instruments that people employ to moderate their higher mental functions, such as memory, attention, perception, and reasoning.

Several research works have suggested that, considering technology's potential as a psychological tool, its incorporation into higher education should lead to modifications in the educational process, including reorganizing the teaching methodology, updating the curriculum, improving communication between teachers and students, and providing students with rich information, resources, and experiences (Munoz-Repiso and Tejedor, 2011; Dhillon, 2022; Yilmaz · 2021).

After analyzing two experimental curricula at a university in Europe, Silva and his co-authors came to the conclusion that these technologies had the potential to alter both lecturers and students. This was necessary because it would allow them to interact in new settings with different subject matter, build new relationships, share knowledge rather than accumulate it, and assemble and deconstruct information in order to reconstruct it in new contexts with new meanings and organizational strategies (Silva et al., 2003). Many critics contend that the introduction of technology into the classroom has changed the function of the teacher into one of a learning facilitator and empowered students to take a more active part in the creation of their own knowledge (MN Khan · 2021; J Zhang · 2022; Iniesta-Bonillo et al. (2013).

The modifications noted by Silva et al. (2003) have given educators several chances to rethink how they approach the teaching and learning process, but they can also present significant difficulties for instructors who can feel under pressure to incorporate technology into their lessons without sufficient assistance. The quality of internet access, the availability of resources, the knowledge of educators about technology, the readiness of educators to integrate technology, and the availability of technical support are just a few of the factors that must be taken into account to meet the requirements for a successful integration of technology in the educational context (Vilarinho-Pereiraa, 2022; Winter, 2021; Almahasees, 2021; Pelgrum, 2001). In addition to the previously listed factors, the professor's educational views also have an impact on the choice of whether or how to use technology. (Ertmer, 2005; Etmer & Ottenbreit-leftwich, 2010; Li et al., 2019; Sadaf et al., 2012; Teo et al., 2008). The results of numerous research done to determine if teachers' beliefs matter in the integration of technology in educational settings demonstrate that failure to incorporate teachers' beliefs into the planning results in little to no progress in integration. (Saunders, 2020; Tondeur et al., 2017).

1.2 TAM and Technology Integration in Higher Education

Following the abovementioned statement, this article attempts to elucidate how users (e.g., Nigerian professors) perceive technology through online learning as useful in their teachings by employing the technology acceptance model (TAM) proposed by Davis (1989). This theory, in particular, will help the current study understand why these Nigerian lecturers may have been resistant to implementing technology learning in the early phases.

Many technology acceptance models have been established to investigate and comprehend an individual's attitude toward a specific technology and intention to embrace it. Davis's (1989) technology acceptance model (TAM) is regarded as one of the most prominent models for explaining behavioural intention [Wong et al, 2013, S'anchez-Mena et al, 2019, Kanwal and Rehman, 2017, Weng et al, 2018, Scherer et al 2019, Salloum et al, 2019]. TAM argued that perceived usefulness, perceived ease of use, and attitude toward usage can all be used to predict a user's behavioural intention. TAM's prominence stems primarily from its adaptability to various samples and circumstances. Furthermore, according to Schecher et al. (2019), Grani´c and Maranguni´c (2019), G.M. Hoi and V. N. (2020), Antonietti et al. (2022), it is a reliable model for explaining the goal of teachers' technology adoption.

TAM's fundamental criteria, perceived ease of use and perceived usefulness, have been repeatedly demonstrated to be effective predictors of adoption of technology-based learning. The bulk of studies have found that users' intents to use learning technology may be described by applying or expanding the TAM research model with various relevant characteristics (predictive factors). Farahat (2012) and Chipps, Kerr, Brysiewicz, and Walters (2015) conducted a study on the application of the original Technology Acceptance Model (TAM) in educational settings. In a similar vein, Yu (2020) expanded the TAM by incorporating perceived enjoyment, conformity behavior, and self-esteem to examine the acceptance of WeChat usage in language learning. Lin and Yeh (2019) employed the concept of perceived playfulness as an internal motivator to examine the acceptance of virtual reality (VR) motion control technology for mental rotation learning. In contrast, Aburagaga, Agoyi, and Elgedawy (2020) utilized the extended TAM model to evaluate the requirements of faculty members for integrating social networks into educational environments. The constructs considered in their study were privacy, infrastructure, institutional support, and access devices.

Research has consistently demonstrated that the Technology Acceptance Model (TAM) is the dominant and trustworthy framework for forecasting and elucidating user behavior in the acceptance and adoption of educational technology (Abdullah & Ward, 2016; Granić & Marangunić, 2019). Several studies on the acceptance of educational technology have presented empirical data supporting the predictive validity of the Technology Acceptance Model (TAM). Recent research has mostly examined electronic learning (Prasetyo et al., 2021), mobile learning (Lai, 2020), virtual reality environments (VLEs) (Fussell & Truong, 2021), massive open online courses (MOOCs) (Al-Adwan, 2020), and the open-source learning management system Moodle (Vanduhe, Nat, & Hasan, 2020).

In addition, several acceptance studies have investigated the suitability of the Technology Acceptance Model (TAM) for different supportive enabling technologies employed in education. These technologies encompass social media platforms (Al-Rahmi et al., 2021; Yu, 2020), virtual reality tools for learning (Lin & Yeh, 2019), augmented reality technologies (Jang, Ko, Shin, & Han, 2021), teaching assistant robots (Park & Kwon, 2016), simulators (Lemay, Morin, Bazelais, & Doleck, 2018), and various other technologies.

Various research has modified the Technology Acceptance Model (TAM) in order to enhance its applicability and validity. These studies include the works of Scherer et al. (2019), Murillo et al. (2021), and Sulaiman (2022). Salloum et al. [2019] highlighted the importance of broadening the scope of TAM by include more dimensions. Thompson et al. (2007) argued that the adoption of technology is influenced by characteristics such as perceived usefulness and usability, which are particularly important in the context of modern advanced technologies. It explains how individuals make decisions to

adopt and use a particular technology. Fig. 1 depicts the Technology Acceptance Model used in this study. The important factors are perceived usefulness and perceived ease of use.
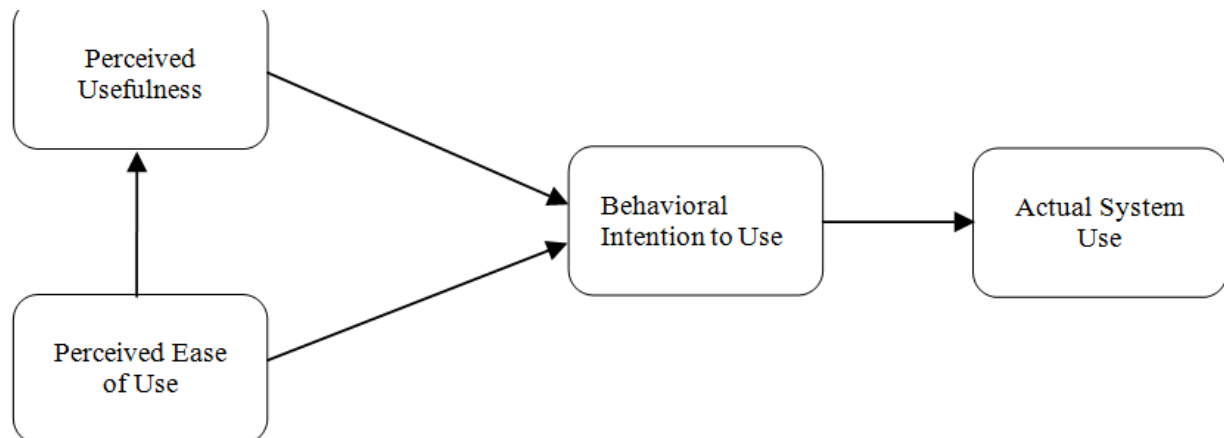
The constituents of this model The Technology Acceptance Model (TAM) is an adaptation of the Theory of Reasoned Action (TRA) specifically designed for the study of information technology. The Technology Acceptance Model (TAM) states that an individual's intention to use a technology is determined by their perception of its utility and simplicity of use. The TRA and TAM models operate under the assumption that individuals who establish performance goals will have unrestricted autonomy to pursue them. Various restrictions, including limited skill, time limits, environmental or organizational limitations, and unconscious biases, can restrict one's freedom to act.

This notion posits that consumers' views of the utility and user-friendliness of a newly acquired software package play a crucial role in shaping their judgments regarding its utilization and timing. Multiple studies have employed the Technology Acceptance Model (TAM) to examine the utilization of Information Technology (IT). Davis et al. (1992) conducted a comparative analysis between the Theory of Reasoned Action (TRA) and the Technology Acceptance Model (TAM) in order to identify the combined aspects of these two models that provide a more comprehensive understanding of the determinants of user acceptance. Information systems utilize a variety of theoretical perspectives. The Technology Acceptance Model (TAM) is considered the most renowned and extensively utilized theory for describing an individual's acceptance of information technology compared to other theories. TAM operates under the premise that an individual's acceptance and use of information systems is impacted by specific influential elements.

• This study assesses the perceived usefulness (PU) of computer software based on professors' perceptions of its learning value, social value, and impact on individual development.

 • The perceived ease of use (PEOU) of computer software is determined by professors' perceptions of its usability.

• The usage pattern (UP) in this study is determined by professors' reactions to the availability of computers, the Internet, and computer software, as well as their frequency of use.

Furthermore, it's crucial to always take teachers' beliefs and practices into account when making any significant pedagogical transition, not just the integration of technology. Give them the chance to share their perspectives and discuss the circumstances under which they will implement such integration in their classrooms. In order to increase awareness and shed more light on the changes required in the Nigerian institutions, the goal of the current study is to contextualize the perception of Nigerian professors regarding the benefits and drawbacks of using technologies in higher education as well as the challenges they encounter in doing so. The paper tries to understand the benefits participants see in employing technology in higher education, what drawbacks do they see in using this said technology and what problems the participants run through when attempting to use these technologies in the classrooms. The paper comprises the rationale of using TAM and the integration of technology in the higher education settings.

1.3 Statement of the problem

Unfortunately, despite the demands of the digital age, which calls for a technological approach to many problems, the majority of Nigerian academic institutions' output falls short of these expectations. The stark reality, according to (Abubakar, 2009), is that the value and quality of our human capital have decreased significantly, which has substantial long-term ramifications for the efficient administration of the country's affairs, its prosperity, and its competitiveness in the global arena. Abubakar emphasized that many people view universities as producers of stale and sterile information who produce products with only a weak foundation and no prospects for employment or any form of meaningful activity. Higher education in Nigeria has recently come under fire for the poor quality of its outputs. As a result, academic institutions in Nigeria must urgently catch up with advancements in educational processes in industrialized economies.

1.4 Purpose of the study

Following the abovementioned statement, this article attempts to elucidate how users (e.g., Nigerian professors) perceive technology through online learning as useful in their teachings by employing the technology acceptance model (TAM) proposed by Davis (1989). This theory, in particular, will help the current study understand why these Nigerian lecturers may have been resistant to implementing technology learning in the early phases.

1.5 Research Questions

1) What are the advantages of technology utilization in Nigeria higher education?

2) What are the disadvantages of using technology in Nigeria Higher education?

3) What are the obstacles to technology integration in Nigeria higher education?

2. LITERATURE REVIEW

2.1 Empowering Educators: Exploring Factors Affecting Lecturers' Adoption and Integration of Technology in Higher Education"

Several scholars have examined the utilization of technology in education and have regarded it as a powerful teaching tool that enhances students' academic achievement (Anderson & Horn, 2012; Anthony et al., 2020; Safar & Alkhezzi, 2013; Stanley, 2013; Tang & Austin, 2009; Haleem, 2022;). In addition, the incorporation of technology provides students with advanced educational opportunities beyond the limitations of conventional classrooms (Schindler et al., 2017; Wegner et al., 1999; Barrot, 2021).

An elucidation of the intricate interplay among technological integration, learning, and education is necessary. Teachers and researchers often lack a comprehensive understanding of technology integration and fail to recognize the importance of linking specific technological resources with course content, student learning outcomes, and instructional techniques (Okojie et al., 2006; H Akram, 2022; L Kopciewicz, 2021). The authors proceed to provide a comprehensive explanation of the term "technology integration," emphasizing that teachers must view it as a crucial component of their classes if they wish to enhance learning and improve students' academic achievements.

Technology integration is a crucial aspect of the instructional environment that educators who wish to incorporate technology in their classrooms must be knowledgeable with, as stated by Okojie et al. (2006), IM Karkouti (2021), and R Kimmons (2020). If the important relationship between technology integration, learning, and instruction is not considered, the standard of education in a technology-based learning environment will decline. This will also lead to inadequate utilization of technology for instructional and learning purposes.

Multiple studies highlight the importance of incorporating technology into teaching methods, suggesting that it offers advantages for both students and teachers in the learning process (Salam et al., 2019; Oliva-Córdova et al., 2021). The authors argue that incorporating technology in the classroom enhances teachers' proficiency in both pedagogy and subject matter. They also highlight that utilizing technological tools facilitates more effective learning for students and enables them to grasp concepts more easily. However, the successful integration of technology in teaching largely relies on teachers' technological and pedagogical competencies.

Modern educational technology, along with the underlying ideas and practices, are now an essential component of teaching and learning, and they have experienced significant (creative) expansion in the higher education sector (Henderson et al, 2017; Mercader & Gairin, 2020; Okoye et al, 2021). As a result, a lot of higher education institutions work to increase their investments in digital technologies to support the various teaching and learning methods as well as curriculum. Existing research claims that "digital technologies" are one of the enabling instruments that instructors, or even HEIs, can use to ease teaching-learning processes and improve/transform both faculty and students' learning experiences and participation (Barton & Dexter, 2020; Chiu, 2020; Livingstone & Livingstone, 2012; Sanchez-Mena et al., 2019; Tondeur et al., 2020). According to reports, digital technology has had a positive impact on higher education by increasing access to learning, promoting equal opportunities for all, and fostering lifelong learning (Juan et al., 2011; UNESCO, 2014, 2021).

While there is some evidence that pedagogical adjustments or transformation are not significant, it is undeniable that digital technologies are rapidly evolving in this technologically advanced era of the twenty-first century (Boninger et al., 2019, 2020; CONECTA, 2021; Cuban, 2020, 2021; Molnar & Boninger, 2020). Consequently, educators must consider the purpose and challenges associated with the utilization of these emerging technologies for educational purposes.

These days, students and faculty are expected to acquire or possess a variety of skills, including the digital literacy needed for employment and citizenship, self-education, lifelong learning, and acquittance (Barton & Dexter, 2020; Dede, 2010; Lin & Wang, 2021; Ma et al., 2021; OECD, 2021; Okoye et al., 2021; UNESCO, 2014, 2021b; Urbancikova et al., 2017). Students are able to learn and acquire sophisticated (learning) competencies that are required for prosperity, as well as effective time and content management, thanks to those multi-skills, which include creativity, problem-solving abilities, critical thinking and analysis, among others (Okoye et al., 2021; Seyfried & Reith, 2019; UNESCO, 2015, 2020).

The worldwide pandemic significantly disrupted all aspects of human life. Similar to how the closure of schools and the change of traditional education to an online model presented many issues to the educational sector (UN, 2020). About half of all students worldwide were impacted by this technological

change in terms of their education (UNESCO, 2020). The conventional university learning process has been put on hold. Universities are forced to create a flexible learning system that connects numerous geographic areas, different courses, and various time zones. In this environment, universities have benefited from autonomous online-based learning systems and mechanisms. Ideally, universities have created independent learning models that combine students' study plans with the shifting needs of the industrialized world. As a result, developing an empirical learning design pattern becomes essential. Currently, higher education is going through another revolution to adapt to the needs of a digital, international information economy. But there is profound disagreement over the shape that revolution will take. Therefore, it is crucial for institutions to develop their own distinctive independent learning model in order to motivate students to learn and increase employment chances (Sudirtha et al., 2021). As a result, the need of integrating technology into education is highlighted, and teachers must update their abilities to provide quality education and make appropriate adjustments to their curricula and instruction.

When it comes to prosperity, taking care of one's family, and addressing the most serious global concerns, higher education is today more of a requirement than a privilege held for a small number of members of society. Although traditional education has its role, we also need to provide individuals with access to lifelong, skills-based education that is appropriate for them at any stage of their lives (Prasetyo, et al. 2021). We must be aware of how swiftly technology advances and how severely the traditional approach limits access to education. Higher education professionals agree that there should be less rigid structure and more room for variation in the classroom. They push for more certificates, streams, and courses so that people can retrain as necessary and put their new skills to use right immediately (Ahmad, T. 2019).

The digital revolution is altering higher education. Higher education is changing as a result of the digital transformation, not merely in terms of teaching methods but also in anticipation of the modern skills that must be taught, such as previously overlooked non-cognitive, technological, organizational, and program administration features. In the era of digital transformation, noncognitive abilities, also known as digital skills, are more important than ever for professionals because they could aid in better decision-making, problem-solving, and team management (Goulart et al. 2022)

If stakeholders have a greater understanding of the abilities required in the future and how universities are training students to achieve those skills, then enhanced teaching, learning, and university operations will benefit all parties involved. It is imperative to have this perspective, especially given how swiftly the workplace is evolving. Technological progress is the primary driver of this change (Alenezi, M. 2021). The uncertainty posed by technological change must be accepted by university teachers, employers, and students. But nobody can predict the future, and prospective events are difficult to predict.

2.2 Catalysts of Change: Investigating the Role of TAM in Shaping Lecturers' Technology Integration Strategies in Higher Education

In order for a user to embrace a particular technology, they must regard it as beneficial in their daily lives, particularly in the context of general education. Another factor to consider for users is the usability, which refers to the extent to which a person perceives that using a specific system would need minimal effort. (Al-Maroof and AL-Emran, 2018). The obstacles are eliminated only if the user perceives the technology in question as user-friendly. This research aims to examine how the Technology Acceptance Model (TAM) might be used to predict the acceptance and adoption of technology by academics at higher education institutions in Nigeria.

TAM suggests that the adoption of technology by individuals is influenced by their perception of how easy it is to use and how beneficial it is. Perceived ease of use refers to an individual's belief in the simplicity and effortless application of technology to achieve educational goals, even in challenging conditions such as natural disasters or the global onset of the COVID-19 epidemic. Perceived usefulness refers to the understanding that technology has the potential to enhance performance and assist in activities, as stated by scholars in 1989. The Technology Acceptance Model (TAM) underwent a transformation into other approaches, namely TAM2 and UTAUT, as proposed by Venkatesh and Davis in 2000. The studies conducted by Venkatesh et al. in 2003, Venkatesh and Bala in 2008, and Lai in 2017 are relevant. The distinction among the three lies in the variables employed in the research framework. For example, TAM2 expands on subjective standards, voluntariness, and image in relation to TAM. Perceived usefulness is influenced by all three factors, as stated by Vankatesh and Davis (2000). Meanwhile, the UTAUT model developed by Venkatesh et al. (2003) investigated the impact of performance expectancy, effort expectancy, social influence, and facilitating factors on behavioral intention. This impact was further analyzed in relation to gender, age, experience, and voluntariness of usage.

Venkatesh et al. (2003) also examined the impact of behavioral intention on behavior usage. Conversely, TAM3 is an advancement of TAM2, with the addition of a factor that impacts the perception of ease of use. This approach can provide a comprehensive nomological network for determining the adoption and acceptance of technology (Venkatesh and Bala, 2008). This paper focuses on using the primary Model-Final version of TAM (Technology Acceptance Model) developed by Davis and Venkatesh in 1996. The model specifically examines the impact of perceived usefulness and perceived ease of use on the behavioral intention to use technology. While there are other methods available to predict behavioral intention determinants, this paper specifically selects the TAM model for analysis. The Technology Acceptance Model (TAM) was primarily developed to elucidate an individual's behavior in regard to the utilization of computer-based systems or technologies (Davis et al., 1989). This methodology is appropriate for evaluating both the favorable and unfavorable aspects of a specific technology (Lai, 2017).

It is important to note that the intricacy of technology often hinders its adoption and acceptability. An individual's perception can influence their decision to employ this technology. This is the data that has been collected by TAM. The perception of the technology being easy to use will motivate users to adopt and utilize it. Perceived utility is a motivating factor for humans to use technology, since they believe that technology will assist them in completing a task. However, the issue arises when humans are compelled to embrace and embrace the technology due to a lack of alternatives. In this instance, educational establishments in Nigeria made the decision to embrace and use new technologies to facilitate and enhance teaching and learning endeavors. However, the presence of new technology does not guarantee that professors will readily embrace it. Consequently, there is a need for training to support

numerous lecturers, including those from Nigeria, in embracing and embracing technology (Sugar et al., 2004). Keengwee and his co-authors emphasized that the success or failure of adopting and accepting new technologies in higher education institutions depends on the training and support provided. Similarly, Hubbard (2013) conducted a study which found that training enhances the efficiency of technology utilization. According to this, it is important to note that user training and support can moderate the impact of perceived ease of use and perceived usefulness on behavioral intentions to utilize technology.

2.3 Enhancing Online Education: Exploring Lecturers' Perceptions and Adoption of Technology through TAM"

Davis and his co-authors devised the Technology Acceptance Model (TAM) to scrutinize individuals' behavior and perception when it comes to embracing new technologies. This study focused on the author's observation of the process of adopting and accepting computers. TAM developed two theoretical frameworks to forecast individual perception and behavior in the adoption of technology. TAM asserts that the perception of how easy it is to use and how valuable it is to utilize technology assumes the adoption of business intelligence. Considering these two principles, it is worth noting that online teaching has quickly gained popularity as a preferred method of learning among students worldwide due to their perception of its user-friendliness and the benefits it offers in completing their duties. According to Chu and Robey (2008), technology is crucial for facilitating online teaching and learning. Some scholars predict a significant shift towards incorporating the TAM concept into long-term institutional strategies for online teaching (Brach, 2020; Allen and Seaman, 2005).

Online teaching refers to the use of technology as a means to convey knowledge, without being restricted by time or location. The contact between teachers and students is crucial during online teaching (Ni, 2013). The teacher has the ability to create both synchronous and asynchronous learning (Beldarrain, 2006; Dhawan, 2020). Synchronous learning is an educational method that involves real-time interaction between the instructor and students. Asynchronous learning allows for a distinct approach to the learning process between the teacher and students (Chen et al., 2005). Similarly, asynchronous learning enables students and teachers to make use of resources from free sources.

Based on the above, as a way of people responding to TAM, a theory that emphasizes on perceived ease of use and perceived usefulness presume by the BI of users to use technology, there have been a growing emphasis on the advancement of information technology generally, the internet, to develop online teaching methodologies, thereby offering opportunities for people, especially teachers to transcend spatial and temporal constraints (Fincham, 2013). As a way of people responding to TAM, online teaching is one of the teaching trends and method widely adopted and accepted in the academic institutions, especially in Nigeria.

As a way of people responding to their perceived ease of use and perceived usefulness presume by the BI of users to use technology, online teaching according to Allen (2006) is about enabling brand-new and more productive behaviors. It entails offering more advantageous was to assist people like African professors and organization or educational institutions like the ones in Nigeria the opportunity to adopt new learning skills as well as accessing updated knowledge. In line with this and as a way of responding to TAM in line with people emphasizes on perceived ease of use and perceived usefulness presume by the BI of users to use technology, some studies stated that online instruction provides flexibility and convenience to complete learning unit when and where a learner desire. Furthermore, with emphasizes on perceived ease of use and perceived usefulness of technology proposed by TAM, integrating computers and other new technologies into a cohesive conceptual framework should be seen as opportunity for countries to boost their educational sector. This is because with a lot of early success in line with how users perceived the ease and usefulness of using technology for teaching, online teaching can provide prospects for doing away with physical barriers as a prerequisite for learning and also provide alternative platform for countries to continue learning during unforeseen situations like the pandemic. Due to the fact that TAM emphasizes on perceived ease of use and perceived usefulness presume by the BI of users to use technology, the usage of online teaching must increase over time, especially in higher education. Based on this assumption, no wonder study shows online teaching has the highest year-to-year rate rise to date with 30 percent of higher education students enrolled in at least one online course in 2009, up from 21 percent of enrollment in 2008. On the other hand, traditional enrollments surge by less than 2 percent in the same year (Seaman, 2008). As a way of people responding to their perceived ease of use and perceived usefulness presume by the BI of users to use technology, majority of university, if not all, take part in online learning (Arabasz and Bake, 2003).

In the past several years, a modest number of studies undertaken by scholars looking to pinpoint the dimensions of professors' perceptions of their happiness with online teaching have surfaced. Some of these scholars have affirm that, as a way of people responding to TAM, a theory that emphasizes on perceived ease of use and perceived usefulness presume by the BI of users to use technology, online learning has provided a new dynamic and has reenergized interest in the topic (Dziuban and Moskal, 2011; Arbaugh, 2007). Fredrick (2004) mention that students' motivation in taking online learning can be assessed by how they participate in ongoing learning. Participation in online teaching and learning requires three dimensions, namely cognitive participation, emotional participation, and behavioral participation driven by TAM that emphasizes on perceived ease of use and perceived usefulness presume by the BI of users to use technology.

As a way of people responding to TAM, a theory that emphasizes on perceived ease of use and perceived usefulness presume by the BI of users to use technology, motivation is generated through effective teaching. Effective that is in line with emphasis on perceived ease of use and perceived usefulness online teaching requires effective instructional design and procedures based on the concept of a good education. This concept of good education that is in line with emphasis on perceived ease of use and perceived usefulness tend to positively impact the online teaching instructions if the plan is correct. For instance, it is crucial to take into account the approach, time flexibility, student participation in activities, and material presentation when creating a teaching plan (Barbera et al., 2016).

So, the advent of online teaching is a noteworthy development that could have an effect on pedagogy and assessment. Most institutions agree that participating in online activities improved the standard of their education. Higher education institutions have realized how crucial it is to create and maintain efficient infrastructure systems to support students' perseverance as they transition to online study (Wright, & Zhou, 2015). Although there are benefits for teachers from the expanding use of technology in online teaching, the major concern is the resistance to change, not the convenience it provides for teaching. (Nayak, 2020). Shen, D., Cho, M. (2021).

2.4 Examining the Relationship Between Perceived Usefulness and Technology Adoption among Professors in Higher Education

Individuals who hold the belief that technology is beneficial for them are more likely to utilize it. This notion has been explored in numerous research on the adoption and acceptance of technology. Davis (1989) explained that the level of perceived utility directly influences the likelihood of adopting technology. The perceived usefulness of teachers refers to their attitude towards the assessment of their educational experiences utilizing online platforms as a way of learning, which is determined by their perception of how easy it is to use. (Khong, 2022; Saleem, 2023).

Some scholars discovered that perceived usefulness positively affected behavioral intention of teachers to use online teaching method (Tseng, 2022; Saidu, 2022; Tao, 2022). This is why some previous studies assumed that when technology is in line with the user's perceived ease of use and perceived usefulness, them usage is imperative. Consequently, when talked about teachers' perception about satisfaction in technology, teacher's satisfaction goes up when stress is low and satisfaction goes down when distress is high, in order to measure the satisfactions of teachers' use of technology in higher education (Chen, 2022; Padmanabhanunni, 2022; Raymond, 2018)

As a way of people responding to TAM, a theory that emphasizes on perceived ease of use and perceived usefulness presume by the BI of users to use technology, some scholars detailed the important of being satisfied in online teaching and learning (Pera, 2013; Greer et al, 2010). Kauffman (2015) and Saeler (2015) both explained the need on perceived ease of use and perceived usefulness as it relates to the quality and effective online teaching learning environment. The adoption of tactics to achieve learning outcomes, particularly in the online setting, has been the subject of studies based on the notion of teachers' perception. As a way of professors responding to TAM, a theory that emphasizes on perceived ease of use and perceived usefulness presume by the BI of users to use technology, when professors are happy with their instructional design progress, they appear to be more engaged, motivated, and receptive, contribute to a productive learning environment, and do better on impartation of instructions.

2.5 Evaluating Technological Tools in Nigerian Universities Using the Technology Acceptance Model''

Many colleges throughout the world are quickly integrating smart technology into their school programs in order to improve teaching and learning. In many European countries, these technologies are conventional practices in the higher education system. The rate at which universities in Nigeria are adopting these technologies, as well as their availability and level of use and ease for teaching and learning, is unclear. However, in order for Nigerian universities to prosper like universities in developed nations, the government should provide smart technology in the universities in order to enhance the educational system, achieve the National Philosophy of Education, and prepare a workforce that is capable of addressing the challenges of the twenty-first century.

Findings from Onyia's (2019) research on the accessibility of smart technologies at Nigerian universities led to a conclusion on the proportion of respondents who reported having access to these devices frequently. According to the responses, there are 100, 67.6, 92.5, 66.8, 92.5, and 67.7 percentage responses for smart phones, iPads, laptops, tablets, and internet and e-library availability, respectively. This suggests that the availability of these smart devices in universities was acknowledged by both instructors and students. The percentage of responses, on the other hand, is 1.56, 0.99, 1.80, 0.02, 0.06, and 1.04 for the presence of phablets, smart boards, digital cameras, smart tables, projectors, and smart classrooms. That suggests that these sophisticated technologies are not accessible. These indicate that Nigerian higher education does not have access to as sophisticated educational technologies as that found in other industrialized nations. The available technology, including but not limited to the following, will be explained in context to the TAM theory perceived usefulness and ease of use.

2.5.1 Smart Phones

The smartphone offers numerous advantages, such as immediate communication and easy access to information through a user-friendly graphical interface that can be used with one's finger, regardless of location. A multitude of devices, such as a telephone, digital camera, audio speakers, wireless adapter, and global positioning system, can be substituted with a solitary smartphone. By utilizing a smartphone, an individual has the ability to acquire and execute software applications (apps). Sensors integrated into the device can collect measurements and contextual data. By including communication capabilities into an application, users do not require expertise in networking (Bauer et al., 2020; Masalimova et al., 2022). The Technology Acceptance Model (TAM) is a theory that focuses on the perceived ease of use and perceived usefulness of smartphones as determined by the beliefs and intentions of users. Ismail's (2016) hypothesis reveals that there is a strong and meaningful relationship between perceived compatibility and perceived usefulness, as well as between perceived compatibility and perceived ease of use, and between perceived ease of use and intention to use. However, the perceived utility in relation to the intention to utilize is not statistically significant. The motivation for possessing cellphones may be solely for status, with customers not fully comprehending the benefits of its functionality.

2.5.2 Laptops

Laptops, similar to desktop computers, possess audio and video functionalities alongside productivity software such as Word, Excel, Access, and PowerPoint. A laptop can function as a voice communication tool and a video communication tool by simply adding a microphone, a video camera, and an Internet connection. Additionally, there are other types of application software that enhance the functionality of a laptop. The portability, wireless connectivity, and advanced capabilities of laptop computers have provided users with enhanced mobility and expanded options for decision-making. The utilization of laptops is giving rise to a novel learning format.

Educators use the term "M-learning" to emphasize the cognitive, pedagogical, and social aspects of incorporating mobile technology into education. Many universities and companies such as Microsoft, Apple, and others have initiated programs to promote the adoption of laptops in educational settings. The references cited are from Day et al. (2021), Xiaopeng (2004), and Sana et al. (2013). In their study, Moses et al. (2015) employed the Technology Acceptance Model (TAM) to examine science and mathematics instructors in specific schools. The study revealed that instructors' views towards laptop use were strongly influenced by their perception of utility, but the perception of convenience of use did not have a direct effect. The outcomes were comparable for academics in both the fields of Science and Mathematics.

2.5.3 Internet And E-Library

Academic libraries are increasingly engaging in scholarly research in various areas such as digital humanities, data curation, integrated library system evolution, learning analytics, open access, research data services, digital pedagogies, machine learning, and artificial intelligence. This research is being conducted by scholars such as Uzwyshyn (2018), White (2017), Lewitzky (2020), Saib et al. (2022), and McAllister et al. (2022). Furthermore, it is said that academic libraries have assumed a more proactive and interconnected role in higher education due to the emergence of the internet and the rapid progress of technology. Consequently, the internet and technology have both played a role in fostering innovative progress in the digital landscape of academic libraries. Several academics have argued that the impact of perceived usefulness on user acceptance is greater than that of simplicity of use. This implies that the acceptability of internet-based subscription databases and e-libraries by users mostly rests on the usefulness they provide. The findings suggested that user training did not provide a noteworthy impact on the levels of utility or convenience of use. This highlights the necessity to reassess the efficacy of user training in the specific setting of internet-based subscription and e-library databases. Clear and accessible terminology were identified as crucial factors for ensuring the ease of use of the databases. The findings also indicated that while subjective norm may not have a direct impact on intended use, it does have a beneficial effect on user beliefs regarding the usefulness of Web-based subscription databases. (KIM, 2005; Wibowo, 2019)

2.5.4 Projectors

With the implementation of projectors in educational settings, numerous educators hold the belief that traditional chalkboards are becoming obsolete. Projectors enable teachers to utilize PowerPoint presentations, graphics, and video as instructional tools instead of manually writing notes on a board. Consequently, projectors are a valuable educational tool for both educators and students. Teachers have the ability to create PowerPoint presentations using bullet points or other meticulously arranged lesson notes, which can then be displayed using projectors. Students with classroom access to projectors have an advantage in note-taking as they can discern the most useful material. Rather than individual students accessing information on small personal computers, projectors can be used to display online content to an entire class. Many projectors also have exceptional audio quality, which enhances the experience of watching nature documentaries or listening to music.

3. METHODOLOGY

3.1 Research Design

The study is qualitative and focused on the material aspect. As a result, the analysis identified variations in the occurrence without quantifying them. Using a qualitative methodology, as outlined by Creswell (2007), the author acquired knowledge by engaging in direct, in-person communication and phone conversations with individuals. Face-to-face interviews offer valuable advantages as they enable researchers to perceive social indicators such as voice, intonation, and body language. Additionally, they facilitate the opportunity to go deeper into respondents' answers by asking more probing questions. However, phone interviews also had other advantages that were widely acknowledged as a legitimate instrument for modern research. The benefits encompass its accessibility, reduced financial resources, and lower journey time (Bryman 2016: 484). Conducting phone interviews provided a sense of ease for the respondent and reduced the formality of the session. Conducting phone interviews has the drawback of not being able to perceive physical cues, such as the informant's body language (Bryman 2012: 488). However, the body language of the participant in this particular study was not highly relevant, as the knowledge had by the participant was of much greater significance than other qualities. Both interview strategies, nevertheless, successfully yielded the necessary data to address the research inquiries of this study. Hence, the chosen methodology for this investigation prioritized the expression of viewpoints and perspectives rather than providing explanations. It focused on presenting reasons and identifying causes. By facilitating the inclusion of numerous perspectives, a diverse range of viewpoints might be examined, hence enhancing people's awareness and utilization of technologies in higher education. This study in higher education in a specific region in Nigeria focused on understanding experiences, meanings,

perceptions, and sentiments. The material was obtained from multiple respondents. As a result, it was challenging to draw generalizations and broad conclusion

3.2 Population of the Study

The population of a study in organized research is determined by the problem being investigated (Nworgu 1991; Kassu, 2019 Johnson et al., 2020). A population consists of selected elements for a study. The term "population" can be defined as the entire group of individuals who are eligible to be included in a survey (Barridam, 2001). The study specifically focused on professors in higher education or universities as its target group. Four professors from distinct higher education institutions in Nigeria, all located in the same geographical region, took part in this study. These academics were recommended by unit administrators, such as department heads or institute directors, based on their utilization of technology in their teaching methodologies. Three individuals were male, with ages ranging from 43 to 55 years. Their mean teaching tenure exceeded 18 years. Two professors instructed courses in the field of Sciences within the realm of education, while another professor specialized in teaching Educational Technology, and the other professor focused on teaching pure Arts courses. In order to maintain the confidentiality of their identities, the participants are assigned the labels P1-P4.

3.3 Sampling and Sampling Techniques

The study utilized purposeful sampling, a non-probability approach, to select the sample. This methodology assumes that the sample selection was not based on a random process (Bryman and Bell 2007), resulting in the selection of certain authorities and organizations over others. The reason for selecting these authorities and organizations for the study is their expertise and extensive experience in the subject of education and integration, as demonstrated by their professional background. The objective of the sample was to accurately depict a collective understanding and encounter among a somewhat uniform population.

The sample size of 4 responders was enough for this paper. The chosen participants possess diverse educational backgrounds and areas of expertise. However, they all share a common objective: to provide a comprehensive understanding of their views on the integration of technology. Qualitative research often centers on relatively small samples that are investigated in greater detail, making the intentional sampling method appropriate for this particular study.

3.4 Sources of Data

The study adopted primary and secondary sources. Primary sources of data were gathered through semi-structure interview which was open ended. The aim of the open-ended questions was to encourage the participants to answer freely as the interviews were conducted with the experts in the field of education. Secondary sources include journals articles, books, government publications, and newspaper articles. There were also sources from institutional and official documents from organizations. United Nations reports and other related documents that concern the research problem were used.

3.5 Instrumentation

The author conducts an exploratory semi-structured interview with the professors. The objective of this interview was to investigate the participants' viewpoints on the pros and cons of utilizing technology in the educational setting, as well as the obstacles they faced while incorporating technology into their teaching methods. The interview protocol comprised the subsequent guiding inquiries: (a) "what advantages of Technology Utilization in Higher Education?"; (b) "What are the disadvantages of using technology in higher education?"; (c) "What are the obstacles to technology integration in higher education?".

3.6 Validity/Reliability of Data Instrument

To ensure the validity of the research instrument a pilot study was conducted between two Nigerian professors who relocated back to Nigeria after years of teaching out of the country. During this process, an interview guide which was further developed with the assistance of the study Supervisor. Based on the supervisor's advice, the research instrument, the semi-structure was given to an expert in qualitative methods who scrutinized and approve the instrument. After the analysis, the findings were discussed with some of the respondents. During the process, the representative from each of the experts were selected. Furthermore. the respondents contacted were able to agree with the findings of the study.

3.7 Method of Data Analysis

During the research, data was generated through qualitative methods. As for the analysis of the qualitative data, thematic analysis was adopted. The thematic analysis was used to analyze the semi structure interview based on the themes that were raised in the discussions, it was done in line with the objectives of the study. Moreover, the utilization of qualitative methods in data collection and analysis allows researchers to conduct studies with individuals in their natural environments and focus on the subjective interpretations they assign to events within their surroundings (Denzin and Lincoln, 2000; Spicer, 2004). Therefore, this approach facilitated a comprehensive understanding of the personal viewpoints and encounters of these academics regarding the incorporation of technology in higher education. Eckstein (1975:121) defines this emphasis on interpreting meanings as "comprehending

the significance of actions and interactions" from the perspectives of individuals. The research mostly relied on the participants' genuine perspectives instead of the researcher's preconceived ideas and classifications by utilizing this approach.

Furthermore, Spicer (2004: 299) has concluded that qualitative methods are advantageous in capturing the intricacies and dynamics, as well as the variety and inconsistencies, of the human and social world within specific local contexts. More precisely, it facilitates the examination of unexpected ideas and procedures that arise during the research phase and enables the study of social behaviors within their particular circumstances. Quantitative methods have traditionally been esteemed for their perceived rigor and scientific superiority. In contrast, qualitative methods have been employed to reveal meanings, relationships, and interactions that may elude measurement through quantitative approaches.

4. Results

4.1 Identifying the Advantages of Technology Utilization in Higher Education

The author of this analysis attempts to integrate the TAM theory, which was utilized in this study, with the perspectives expressed by the participants regarding the utilization of technology in higher education. During the study, participants were surveyed on their perceptions of the advantages of integrating technology in higher education. Each professor recognized the advantages and offered illustrations of how incorporating digital tools enhanced or could have enhanced their instructional approaches. Multiple studies on the utilization of technology in the classroom are also employed to corroborate the responses obtained from the participants.

Regarding the reduction of space-time barriers, two professors highlighted the advantage of digital technologies enabling students to access course materials at any given time and place. According to the statement, this benefit enhanced students' learning by facilitating efficient time management and providing many exposures to the same information. They can access the curriculum at any time of day by watching the video classes on their mobile devices. They may optimize their time use, and if they require to review the content, they can do so often as needed (P1). Many researchers have expressed the view that technology eliminates all educational obstacles, enabling students and instructors to engage in real-time communication and learn in ways that surpass limitations of time and place. Technology-based classrooms offer students a distinct learning environment that facilitates the comprehension of complex subjects with ease (Tortorella et al., 2021; Petrides, 2002; Mosely et al., 2021).

For communication. The utilization of digital technology has resulted in significant changes in teacher-student and student-student communication methods. Teamwork and communication skills are essential qualities that contribute to the growth of a prosperous professional. Digital technologies are crucial in the development of these talents (Lukyanov et al., 2021; Vlieghe, 2014; Anderson and Blackwood, 2004; Syed et al., 2021). The reports of three participants examined the impact of this modification on communication with students, highlighting its enhanced flexibility and fairness. P4 specifically highlighted one of the benefits: "Enhanced communication agility and equitable treatment of students, as there are no barriers in the classroom." I prioritize certain students above others, providing them with more attention and allocating less attention to the remaining student. (...) Through the utilization of technology, I am able to treat all individuals in a uniform manner and provide equal access to available knowledge (P4).

Regarding Diversification, a participant mentioned the advantages of online sharing and the Internet in terms of providing a wide range of information and means of expression. The participant also highlighted how the use of technology leads to greater diversity in courses, as observed by P3. "By implementing this strategy, you can optimize your working hours and deliver more captivating lessons." I feel that besides being faster, the transmission of ideas is conducted with more accuracy. (P3) Some scholars have provided further insight into these findings, suggesting that classroom learning has become more engaging and interactive as a result of digital education. Children are growing more cognizant of it. They not only actively engage in auditory comprehension of the teacher's words, but they also visually observe the content being shown on the screen. It enhances visual learning for children. The educational material utilized in practical sessions within digital classrooms enables students to focus more intently on specific aspects by means of interactive online presentations. Technology in the classroom has provided students with increased opportunities and autonomy in shaping their learning experiences. Learning technologies have additionally offered professors with increased autonomy in delivering lectures or conducting laboratories. Students have the option to attend live-streamed lectures at a specific time, or they can watch recorded lectures at their own convenience if they are unable to join the live session. In addition, online learning courses that offer real-time instruction may enhance students' engagement and motivation (Clift et al., 2001; Harry and Khan, 2002; Johnson et al., 2021; Kamel and Wheeler, 2007; Al-Anezi and Alajmi, 2021).One of the advantages: "Improved ability to communicate quickly and effectively"

Regarding the reduction of the technological gap. P2-4 discussed the issue of insufficient university resources, including a scarcity of computers and poor internet connectivity in classes, was mitigated by students utilizing their personal electronic devices. Consequently, students who did not possess smartphones were compelled to get one in order to match the progress of their peers. According to certain academics, addressing learning gaps early and improving growth might increase each student's ability to personalize their learning sequences, leading to greater success in education (Polly et al., 2021; Aoki, 2012; Gorbunova, 2019; Qashou, 2021). Parents can utilize interactive activities to enhance their child's enthusiasm for learning, as gamification renders the process more entertaining and captivating. Parents can utilize online educational activities to enhance their children's academic work. Digital learning tools and technology provide children an enjoyable and wide range of advantages for their holistic growth. Digital learning enables students to access a greater amount of information and guarantees that the content may be personalized and adjusted to their individual needs. The paramount benefit of digital learning is in its capacity to facilitate individualized instruction, allowing each student to progress at their own pace and follow their own learning path.

Facilitates the development of technical expertise. P1 asserted that employing technology in the classroom offers the benefit of skill enhancement and expanded educational opportunities. Other scholars endorse this perspective, as evidenced by numerous research. Utilizing digital learning tools and technology enhances student engagement and fosters a greater desire for knowledge acquisition. They may be unaware that they are actively acquiring knowledge while they engage in stimulating methods such as peer education, teamwork, problem-solving, reverse teaching, idea mapping, gamification, staging, role-playing, and storytelling. Digital learning offers a more immersive and memorable experience compared to large textbooks or one-way lectures. It provides a deeper understanding of the subject matter, a wider perspective, and more engaging activities than traditional teaching methods. Consequently, pupils can enhance their ability to establish connections with the learning knowledge. According to some experts (Harris et al., 2002; Ergashev et al., 2021; Goodyear et al., 2019; Anwar et al., 2022; Jin and Bridges, 2014; Yadova et al., 2016), they argue that multimedia often offers a more stimulating and captivating way to information processing.

4.2 Disadvantages of using technology in higher education

All participants acknowledged the drawbacks of employing technology in education and provided examples of instances where digital technologies hindered instruction. The research uncovered certain drawbacks associated with the utilization of technology in higher education, as indicated by the participants. This was classified into the following categories:

Maintaining a physical distance between students and teachers. P1 noted that the usage of remote technology can create a slight sense of distance in the teacher-student connection. Two participants voiced apprehension regarding the potential disruption of the teacher-student connection and communication caused by the usage of technology. When a student is in your presence in class, you identify them by their name and face, and you have a general understanding of their behavior. Engaging in remote work necessitates a certain level of detachment. Researchers have observed that a significant drawback of e-learning is the absence of direct interpersonal communication, not only among students but also between instructors and students (Islam, Beer, & Slack, 2015). Due to the focus on student-instructor connection, student-student interaction is often overlooked, leading to a lack of community in the online learning environment. According to research by Arkorful and Abaidoo (2015), students often don't engage in e-learning since it's too abstract and requires too much thought on their part. Since there is no direct interaction between students and instructors, e-learning has the potential to be less effective than the current educational system.

As for copy-paste technique all participant agreed that students become very lazy in learning, Students may consider technology as a means to assist learning, leading them to exert less effort in studying and completing tasks. Additionally, they may rely on "copy and paste" techniques instead of independently doing the prescribed work. According to scholars such as Sarkar (2012) and Sarrab, Al-Shihi, and Rehman (2013), students who lack self-motivation and independence have lower success rates. Additionally, learners who lack self-regulation tend to not allocate enough time for completing assignments, resulting in submitting poor quality work or late assignments.

As for divided attention two participants raised the disadvantage that teaching-learning process may be considered as incidental rather than the course's primary goal because of the students' potential fascination with technology; as P4 observed: "(…) students when using technology get easily distracted in the cause of their school work going through mails, chatrooms, replying personal messages and viewing social media platforms. According to Fried (2008), the use of technology can be seen as disruptive when students struggle to manage both learning the lesson's content and avoiding its use. Studies suggest that the utilization of computers in the classroom often leads to students engaging in multitasking, which has a negative impact on their academic performance.

Addiction to technology was mentioned by three participants, p1-3 they observed that students get addicted to technology when screen time is not being measured which can also lead to other complications due to the overstimulating impacts of technology, students may suffer from mental or physical health issues, or they may develop addicted behaviors that cause them to lose control over how much time they spend using it. The excessive exposure and excessive utilization of technologies can lead to significant mental health problems, including anxiety, depression, suicide, and behavioral disorders (Becker, 2015). The prevalence of adverse effects resulting from the utilization of technologies in higher education classrooms has been steadily growing over time, raising doubts about the commend ability or acceptability of incorporating technology into teaching (Qurbani, 2022).

4.3 Obstacles to Technology Integration in Higher Education

The participants were asked about the difficulties that Nigerian universities confront in integrating technology into the classroom. According to the comments, there are two explanations for these impediments to technology integration, giving individual and university obstacles.

4.3.1 The capacity to follow:

The participants acknowledged that technology had become a part of life and that its significance was obvious, but they also acknowledged that it was challenging to stay on top of all teaching-related technologies, as new ones were constantly being developed. P2 noted: (...) we keep hearing about and seeing new educational technology every day, and it's difficult to focus when it's being updated frequently; it's difficult to keep up with these technologies. Studies on technology integration indicate that faculty members are more inclined to incorporate technology into their teaching if they are confident that doing so will provide employment benefits, boost their performance, and promote student learning (Rogers, 2000a, 2000b; Spotts, 1999).

4.3.2 Change- resistance:

According to two participants, there is a significant problem because they are digital immigrants and the students are digital natives. The Change resistance talked about their peers' resistance and the elements that contributed to it, such as age differences, the idea that technology is a trend, reluctance to try to learn anything new, and conservative views. P3 claimed that his peers liked the traditional method of instruction and that, since it was how they were taught and they did well, there was no need to alter now that it was working. In their report, Vilarinho-Pereira (2022) provided further support for this assertion by describing the resistance exhibited by their colleagues and the underlying reasons for such behavior. These reasons include intergenerational conflicts, perceiving technology as a passing trend, a lack of willingness to invest effort in acquiring new knowledge, and adherence to conservative mindsets.

4.3.3 No enthusiasm:

Some of these lecturers are uninterested in the new technology hype because they see it as a distraction from the core teaching. P1 believes that when these lecturers anticipate few challenges in using these technologies, they completely lose interest in them. They also appear to lose interest when there is little to no change in the expected results of using these technologies. Furthermore, there is evidence that improved incentives are required for instructors. They have the ability to educate but lack the motivation to do so. Although education has historically extended outside the conventional classroom, the current shift towards digital and remote contexts requires significant adjustments, readiness, assistance, and engagement. Considering different strategies for engagement, communication, and instruction, while also taking into account individual needs, student motivation, time management, and limited resources, can all enhance the effectiveness of learning and teaching (Temberger and Konrad, 2021; Mifsud, 2002; Gromova, 2021).

4.3.4 Maintenance is costly:

Some of these technologies are costly to maintain because they necessitate a greater upgrade of data plans, sophisticated personal gadgets, and monthly upgrade costs. P4 is reported as noting that keeping technology for personal use in teaching costs a lot of money and that it is better to stick to what costs them little or nothing at all. According to Moemeke (2019), the expensive nature of high-tech gadgets such as powerful PCs, iPads, iPods, and other mobile devices, along with the required programs and web tools for learning, is a significant concern. The majority of these devices are inaccessible to both students and their educators. The majority of schools lack unrestricted internet access for students.

As for the university barriers all the participants are of the opinion that the university where they worked lacked the fundamental prerequisites for realizing the full potential of digital technologies. Some of these barriers are;

Training: The majority of Nigerian lecturers lack technological training. Three of the participants opined that teachers are reluctant to adopt and use technology and are ambivalent about it. The majority of instructors lack the requisite knowledge and abilities to innovate in the classroom, create and use blogs, access the internet, use Google, wiki, and high-tech devices like mobile phones. Teachers in Nigerian schools are ineffectual at implementing contemporary technologies because they lack adequate digital literacy skills as a result of subpar teacher preparation methods. P2 observed that he doesn't know much about MOODLE or MOOCs as no one taught him how to use them but it seems it has large number of things to offer he will only do what he knows. According to Mueller et al. (2008), teachers must receive proper training on how to design contemporary lessons that are appropriate for learning through technology, how to use learning technology devices, how to communicate and access information in the modern age, how to disseminate knowledge using contemporary technologies, and how to reap the educational benefits of contemporary technologies (Vilarinho-Pereiraa, 2022). Furthermore, this challenge was not solely attributed to insufficient instruction, but also encompassed the caliber of training they were provided. Based on his investigation, the university only provided a limited number of courses that did not adequately instruct students on utilizing the cutting-edge aspects of the technology available at these colleges.

Infrastructure: Sustainable energy sources are essential for supplying power to instructional technologies. The intermittent power supply has deterred users of technology from integrating it into the educational system. The cost of advanced educational equipment, such as contemporary computers, iPads, iPods, and other mobile devices with the necessary web 2.0 software, is quite high. Most of these gadgets are beyond the reach of both students and teachers. Most schools do not provide kids with unrestricted internet access. Both educators and learners experience frustration while utilizing internet-based devices due to the unpredictable nature of transmission signals (Moemeke, 2019). Hazwani et al. (2020) did a study that found that institution's infrastructure is crucial for the successful operation of online learning. Inadequate infrastructure will impede students capacity to access the internet. Participant 4 is quoted here saying when you decide to use the technology available in the classroom there would be no electricity and when there will be electricity the access to the network is limited, since the infrastructure can't be trusted it makes using it very tiring and waste of teaching time. The lack of Power supply, access to internet, high price of high-tech learning tools, such as laptops to educational system

Curriculum: A participant highlighted the university's curriculum. The current curricular framework severely limits the opportunities for teachers and students to demonstrate innovation and originality. The curriculum is characterized by a strict time constraint and a strong emphasis on sequencing and teacher-centeredness. P4 asserts that the school's curriculum is designed in a manner that renders the use of technology futile, as the sole task is to impart knowledge to pupils regarding a specific topic, without any opportunity for incorporating any form of technological integration. Moemeke (2019) argues that the curriculum of the 21st century should incorporate multi-dimensional learning through varied activities and gadgets in order to cater to the demands of students.

Rigid practices: Three of the participants are of the opinion that there are strict assessment procedures including school schedules, time tables, and a fixed place/space concept for the learning environment. Overly depending on traditional paper and pencil assessments to assess cognitive learning disregards digital literacy and the valuable knowledge gained from it. Additionally, it prevents the educational system from harnessing the extensive resources offered by modern learning technologies.

5. CONCLUSION

These professors reported a slew of things they considered were the benefits, drawbacks, and barriers to implementing technology in the classroom, noting both personal and external barriers. Overall, incorporating technology into instruction was viewed as a complex process driven by a variety of internal and external elements to the professors. These characteristics are consistent with Davis' (1986) TAM and the literature on technology integration in higher education (Karkouti, 2016).

It is worth noting that all participants felt both benefits and restrictions, with the perceived disadvantages leaning more on the learners than the instructors. The participants clearly exhibited a profound dichotomy of perspectives toward technology, with some viewing it as the ultimate solution to all of humanity's issues, while others saw it as a force that may potentially undermine the welfare of society. The ability to distinguish the advantages and disadvantages of technology can promote its utilization for educational purposes. This study suggests that professors can fully exploit its potential by avoiding excessive use or insufficient assistance, thus mitigating any negative effects.

According to Okojie et al. (2006), technology-based learning occurs when higher education institutions take technology into account before "developing learning objectives, methods of instruction, feedback, and evaluation and assessment strategies including follow-up activities". This viewpoint is consistent with the findings that were stated earlier in relation to the elements that make it easier to incorporate technology into the classroom setting. To put it another way, by considering technology in advance, schools are able to tailor specific technological tools to the learning preferences of students, the instructional goals, and the learning outcomes of the students.

We categorized the ways in which technology can be beneficial to the learning process that were presented by the participants. These categories represent the ways in which the participants integrated technology to solve problems related to teaching conditions. These problems include lowering the space time barrier, diversification, reducing the technology gap, communication method, and growing technical capacity.

Modern technology has revolutionized the educational landscape. Various resources are used to teach today's students. Teachers nowadays must adapt to the changing needs of their students by taking use of the opportunities presented by the digital revolution. The traditional classroom model, in which students learn exclusively via interaction with teachers and the materials they offer, is obsolete. Distance between teacher and student need no longer be an impediment to learning. As well as being an effective method for encouraging independent study, this method also encourages students to pursue activities like knowledge-gathering and the sharing of that information through networks and partnerships. Teachers and students should therefore keep up with the learning technologies of the time by re-engineering and innovating in system structure, perceptual change, instructional, administrative, and assessment practices that are compliant with the literacy skills of the 21st century. This will allow teaching and learning to continue to be relevant.

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