

Virtual Learning Experiences Among Postgraduate Students in Namibia

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Abstract: Significant transformations in conventional learning have occurred due to the COVID-19 pandemic, underscoring the imperative for novel approaches to education. Virtual learning technology (VLT) offers an immersive and engaging education that can revolutionize teaching and learning paradigms and modern experiences. Thus, mobile devices are becoming more prevalent among university students when accessing virtual learning platforms. Moreover, many students in Namibia utilised mobile technology-supported learning during the COVID-19 pandemic. The perceptions of students regarding mobile technology are a subject of ongoing research. This study investigated postgraduate students' experiences and viewpoints regarding using virtual learning platforms to advance their studies. A total of 42 postgraduate students completed an online survey about their virtual learning experiences in Namibia. The findings show favourable and robust perceptions towards the importance of virtual learning technology in enhancing teaching and learning in Namibia. A consensus was reached among most postgraduate students that learning materials are easily accessible via VLT. Hence, virtual learning platforms offer postgraduate students novel learning opportunities. Isolated disparities were noted in relation to the postgraduate mode of study using VLT, where some postgraduate students still prefer a greater degree of integrated mode for face-to-face teaching approaches. This could be related to slow acceptance, with the possibility of a shift in preference and interest in pleasant VLT experiences over time.

Keywords: Virtual learning technology, COVID-19 pandemic, Virtual learning experience, E-learning platforms, Postgraduate education in Namibia

1. Introduction

Technological advancement and fostering innovation on process, organizational, industry and national levels is essential for growth and prosperity (Yu et al., 2023; Maxamadumarovich et al., 2012). In recent years, the internet revolution has elevated online learning to prominence globally, surpassing the preference for in-person instruction. The increase in global internet access is widely acknowledged as a significant factor that has propelled the advancement of the e-learning technology industry and the development of various educational technologies. E-learning technology encompasses extensive information, communication, and related technologies that augment instruction, learning, and evaluation processes (Atiku, 2018). Some instruments that facilitate e-learning are mobile devices, computers, online forums, and live online instruction (Kaisara et al., 2022; Kumar et al., 2021). Online education has garnered significant recognition as an educational innovation due to its adaptability and accessibility (Keller and Cernerud, 2002; Beldarrain, 2006; Milezi et al., 2023). Recently, the efficacy of classroom instruction has been substantially enhanced through the implementation of e-learning tools, which are crucial to the success or failure of academic institutions. As a

result, educators are progressively incorporating virtual learning platforms to extend the learning environment beyond the classroom and enhance students' learning experiences. Nevertheless, the efficacy of virtual learning platforms is contingent upon the student's inclination to embrace and participate in a virtual learning environment.

Based on data provided by the International Telecommunication Union (ITU), it is apparent that the global Internet user base has experienced a modest increase, rising from 4.1 billion in 2019 to approximately 4.9 billion in 2021. The adoption of e-learning platforms for courses or degrees may increase in tandem with the number of internet users (Liu and Yu, 2023; Ahmad et al., 2023). Recently, the impact of technology on education has unquestionably increased (Almahasees and Jaccopard, 2020). As a result of technological progress, approaches, methods, and strategies for teaching have been revised. In an attempt to incorporate technology into every facet of existence, EdTech firms have developed a variety of online platforms (Huang, 2019; Teräs et al., 2020). This means that technology is integral to all aspects of human existence, including formal education, professional pursuits, and personal interactions. Information can be disseminated and retrieved via the Internet or virtual learning platforms (Dlamini and Nkambule, 2020; Ritzhaupt, et al., 2020). In higher education, the increasing prevalence of online courses has significant ramifications for both classroom instruction and student academic performance. Many studies have established the relationship between students' engagement and academic performance (Abubakar et al., 2017; Delfino, 2019). In contrast, test scores were not significantly impacted by the quantity of time devoted to e-learning, as determined by Davies and Graff (2005). The learner's attitude in relation to the effectiveness of e-learning delivery methods is associated with students' engagement and academic performance (Alhumaid et al., 2020).

At the postgraduate level, information, and communication technologies (ICT) have become a significant focus of higher education. To centralise and administer learning resources, educational services, learning activities, and institutional information, educational institutions worldwide have adopted virtual learning environments (VLE) (Ali, 2020). VLEs are technical and administrative tools in addition to being web-based systems utilised for monitoring and delivering online learning (Kusumojati and Mediawati, 2024). Nonetheless, the impact of teaching and learning approaches on learners' performance remains a central inquiry in higher education (El Said, 2021). Course instructors should evaluate the pedagogical value of digital technology in higher education to achieve learning outcomes (Kirkwood and Price, 2014; Nautwima et al., 2002 and 2022a). Although prior studies in Namibia have not established the influence of virtual learning technologies on postgraduate education and students' academic achievement, it is essential to enable instructors to provide higher-quality instruction that includes increased flexibility, time efficiency, and student engagement to enhance student experiences (Webb et al., 2017; Asa and Nautwima, 2021; Asa et al., 2022). Most postgraduate students are tech-savvy and enthusiastic about using interactive technologies in virtual classrooms (Nsouli and Vlachopoulos, 2021). Postgraduate students' affinity for technology may prove advantageous in an ever-evolving high-tech environment (Wang et al., 2018; Kabango and Asa, 2015; Asa et al., 2013; 2024). The COVID-19 pandemic has led to a significant surge in the utilisation of digital instruments for distance learning (Polianovskyi et al., 2021; Obrenovic et al., 2024). This generation of postgraduate students may have distinct learning expectations compared to preceding generations due to their propensity for extensive networking and multitasking. These students may emphasize adaptability and interactivity and request prompt responses from instructors (Stone and Springer, 2019). The necessity for a well-structured and appropriate course utilising virtual learning tools has increased in tandem with the accelerated technological advancements in the 21st century (Ahunjonov et al., 2013; Polianovskyi et al., 2021; Nautwima and Asa, 2021; 2022b).

2. Literature Review

The lifetime learning approach contributes to the growing popularity of virtual learning platforms. Many academic institutions offer virtual learning to fulfil the educational needs of students (Ali, 2020). Many students have participated in online education, either exclusively through digital platforms or hybrid models integrating in-person and virtual teaching (Xing and Saghaian, 2022). Multiple elements have played a role in the increasing prevalence of online education. These include its perceived effectiveness as an educational instrument, affordability, adaptability, and assurance that it will provide students worldwide with the highest quality of education (Arnhold and Bassett, 2021). The proliferation of virtual learning platforms has significantly impacted education in the twenty-first century (Aslam et al., 2021).

Classroom instruction has transitioned from traditional in-person to online delivery at all levels, from elementary to university (Novikov, 2020). To increase students' participation in online courses, it is necessary to establish an efficient virtual community. McNair et al. (2020) state that identifying and supporting student learning leadership is essential for the success of an online discussion community. This method of instruction encourages students to interact with one another more frequently and facilitates natural conversation (Lee and Yeo, 2022). Furthermore, it affords learners the chance to examine their own perspectives in a critical manner (Lee and Yeo, 2022). The integration of technology into educational environments has become an essential component for numerous individual and societal motives due to the alterations that have occurred (Archambault et al., 2022). Effective communication between students, instructors, and peers is critical for the success of online courses. The importance of learner engagement in resolving the challenges of student isolation, attrition, retention, and graduation rate in online education was underscored by Canty et al. (2022). The significance of student engagement in online learning is emphasised by Martin and Bolliger (2018). It serves as evidence of students' cognitive development and ability to generate their own knowledge, ultimately contributing to their academic achievements. Educators face the unprecedented challenge of fostering knowledge construction and designing an engaging VLE.

Research has demonstrated that integrating technology into educational settings has improved students' academic achievements (Jaiswal, 2020). It is believed that online education and learning via the Internet can prevent the proliferation of COVID-19 (Batubara, 2021). Therefore, significant domestic approaches that advocate for utilising technological devices (such as desktop computers, laptops, tablet computers, and mobile phones) to facilitate online education and learning due to the COVID-19 crisis are rapidly progressing (Waiganjo et al., 2021; Obrenovic et al., 2023; 2024). Technology-based devices encompass online platforms and Internet-based tools that are utilised in conjunction with computers or portable devices to facilitate online learning and instruction (Matthew et al., 2021). Thus, an increasing number of higher education institutions (HEIs) are integrating technological devices into their online teaching and learning processes, including netbooks, tablet computers, laptops, mobile phones, and collaborative online platforms like Zoom, Microsoft Teams, Google Meet, and Google Docs. Zoom and Microsoft Teams are popular application programmes (Apps) that facilitate virtual networking with family, friends, colleagues, and students in situations where in-person communication is unfeasible. However, although virtual teaching and learning strategies have existed for many years (Gillett-Swan, 2017), students and instructors must access the Internet, data, and technology-based devices to succeed with virtual teaching and learning. Moreover, it is imperative that they receive sufficient training in order to operate these technological devices (Matthew et al., 2021).

Student-centred approaches to learning operate under the premise that learners actively construct and pursue knowledge (Baeten et al., 2016). Student engagement and active participation are fundamental to active learning (Hodges, 2020). Active learning occurs within social and instructional settings that facilitate interaction among individuals, as exemplified by exchanging tools and knowledge among peers (Nsouli and Vlachopoulos, 2021). When each student is challenged to apply theory in problem-solving and reflection, this constitutes the

constructivist cognitive component of active learning (Almulla, 2023; Vale and Barbosa, 2023). Conversely, prior experiences give adult learners a wealth of information from which to construct their knowledge. They are more driven by internal rather than external motivation and have a greater desire to construct meaning through comprehension (Almulla, 2023).

Academic institutions have identified an association between adopting VLEs and student satisfaction (Johar et al., 2023). The positive effects of technology integration on student engagement, self-directed learning, and intended learning outcomes have been supported by empirical evidence, as stated by Tang (2024). It is recommended that instructors strive to incorporate a wide variety of interactive experiences into the construction of their courses (Tang, 2024). As a result, substantial connections and active engagement among course modules may be improved by utilising virtual learning technologies (Rajabalee and Santally, 2021). Scholarly sources indicate that the storage and transmission of course materials constitute the fundamental purpose of virtual learning technologies (Alam, 2022). In order to identify efficacious approaches for augmenting online learning experiences, additional research is therefore necessary. A deeper comprehension of the virtual learning experiences of postgraduate students is imperative in light of the growing demands for student achievement, the more stringent course prerequisites, the heightened focus on postgraduate student-centred outcomes, and the widespread adoption of digital learning methodologies. The subsequent research question is: What are postgraduate students' experiences when utilizing VLE? This prompted the current investigation.

3. Research Methodology

This study adopted a qualitative approach to gain insight into the participants' experiences and meanings associated with their perceptions regarding the VLE integrated into postgraduate education in Namibia. The qualitative approach was integrated with a descriptive design and reflexive thematic analysis to gather and interpret data from an online survey of postgraduate students. The design is ideal for summarising postgraduate students' experiences (Urban et al., 2023). Using this strategy, the researchers remain near the data and the surface of words and events (Asa et al., 2023a; 2023b; 2023c). The freedom and ample time allowed for participants to partake in an online survey has the potential to improve data quality.

3.1 Participants

This research was conducted in Namibian public universities with postgraduate students in master's and doctoral programmes. The research included forty-two students enrolled in specific postgraduate programmes. Prior to completing the online survey, participants received written information about the research in the first section and requested their consent to partake in an online survey. We used intentional sampling (Patton, 2015) to recruit postgraduate students by sharing the information with them through the link. This paper aimed to seek individuals who could offer rich data regarding the VLE in Namibia, such as in-depth information and comprehension of users' experiences, rather than empirical generalization (Patton, 2015). The tabulation of participants engaged in this study is provided in Table 1

As indicated in Table 1, the majority (86%) of the participants were master's students, while the remaining 14 per cent of the participants were postgraduate students on doctoral programmes in the participating HEIs in Namibia. This shows that the master's students were more accessible and willing to share their learning experiences on the prescribed virtual learning platforms.

Participants' Level	Postgraduate	Number	Percentage
Master		36	86%
Doctoral		6	14%
TOTAL		42	100%

Table 1: Distribution of participants' postgraduate level
Source: Authors' compilation from an online survey (2024)

3.2 Data Analysis

The data were analysed using thematic analysis (Clarke and Braun, 2017). In order to assimilate the material and identify meaning units, the downloaded online surveys were read multiple times. The cyclical transition from sections of the text to the entire data set was necessary for coding and analysis using ATLAS.ti to conduct reflexive thematic analysis. The researchers identified and condensed meaningful units that were relevant to the study's objective while ensuring that the fundamental content remained uncompromised. The condensed material was evaluated after abstraction and interpretation in the form of themes and codes.

4. Data Analysis and Interpretation

This section provides a description and thematic analysis of postgraduate students' experiences concerning using virtual learning platforms in Namibia. The results are visualised through networks of themes and codes, which were guided by the research questions from the online survey carried out on 42 postgraduate students in public universities of Namibia.

4.1. Challenges of Virtual Learning Platforms

Virtual learning platforms are growing rapidly in the digital age. Using educational technologies has some challenges in enhancing teaching and learning in developing countries. In Namibia, such challenges can be technical or non-technical based on students' experiences regarding using virtual learning platforms in postgraduate education. The advancement of the virtual learning platform coincides with a global movement to improve education and a shift in workforce training to keep up with the technological innovations in Industry 5.0. Virtual learning is widely used in higher education and corporate universities for professional development (Atiku and Boateng, 2020; Ganiyu et al., 2023). Thus, it is important to document the challenges of virtual learning in postgraduate studies to provide practical solutions for effectively implementing such educational technologies in Namibia. Figure 1 presents the technical and non-technical challenges experienced in the virtual learning environment.

4.2. Addressing the Virtual Learning Challenges

A virtual learning environment enables students to learn using a computer and the internet while interacting with a course instructor. Virtual learning is more effective in postgraduate studies since learners can access the appropriate devices to complete their learning activities in the VLE. –Some of the challenges of virtual learning can be resolved by providing the required IT infrastructure and promoting student-faculty engagement, which is essential for the student learning experience and academic performance. Students benefit from early and frequent engagement, which increases participation and learning. Specifically, assisting students with course material, providing assignment feedback, and participating in virtual

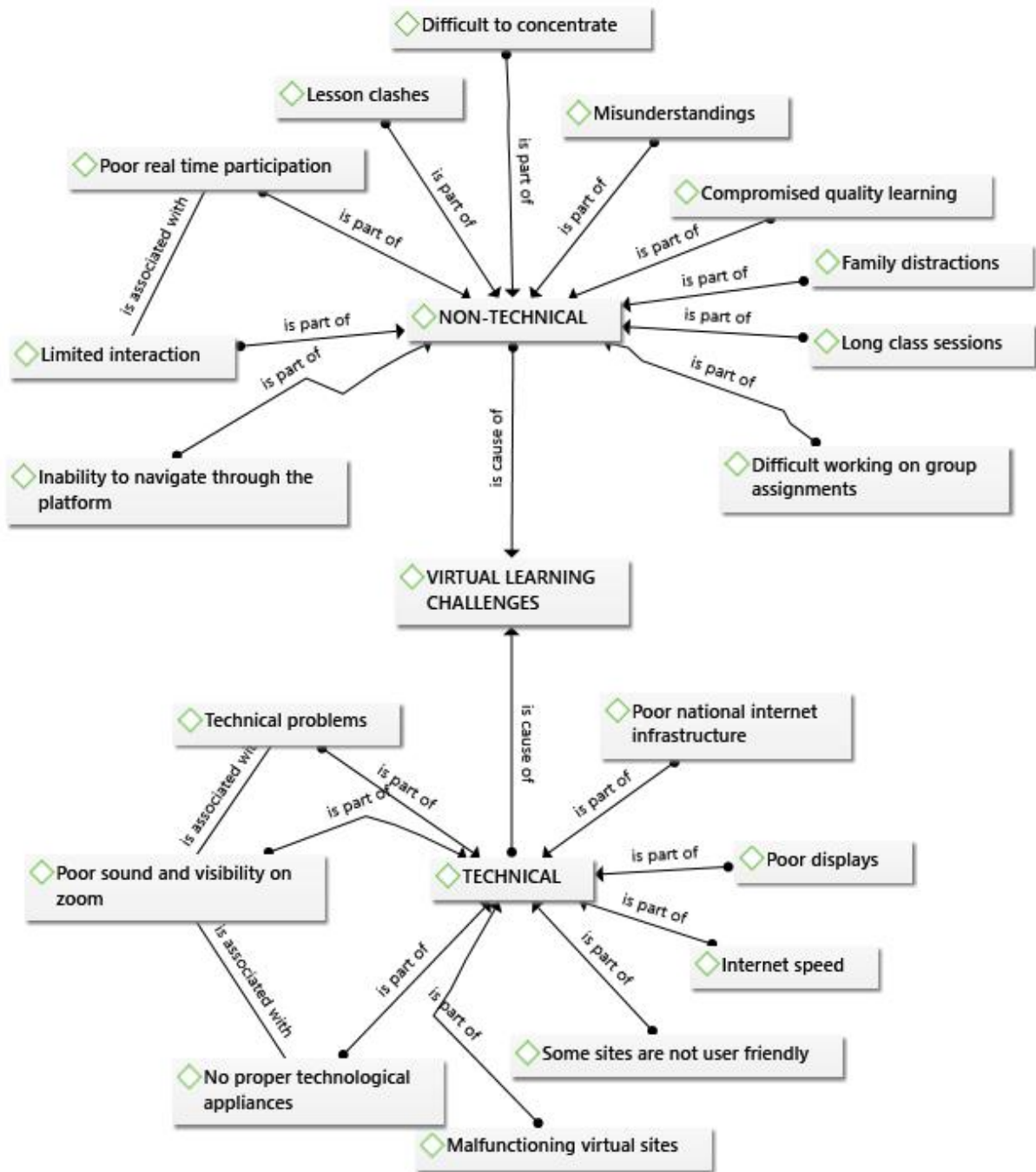


Figure 1: Technical and non-technical challenges of virtual learning environments
Source: Authors' development (2024)

interactions also help students achieve their learning objectives. There are various practical techniques for increasing instructor presence and social interaction. Computers and the internet can help distance learners gain knowledge, especially when paired with a good teacher/lecturer. Figure 2 presents the mitigating strategies suggested by the study's participants.

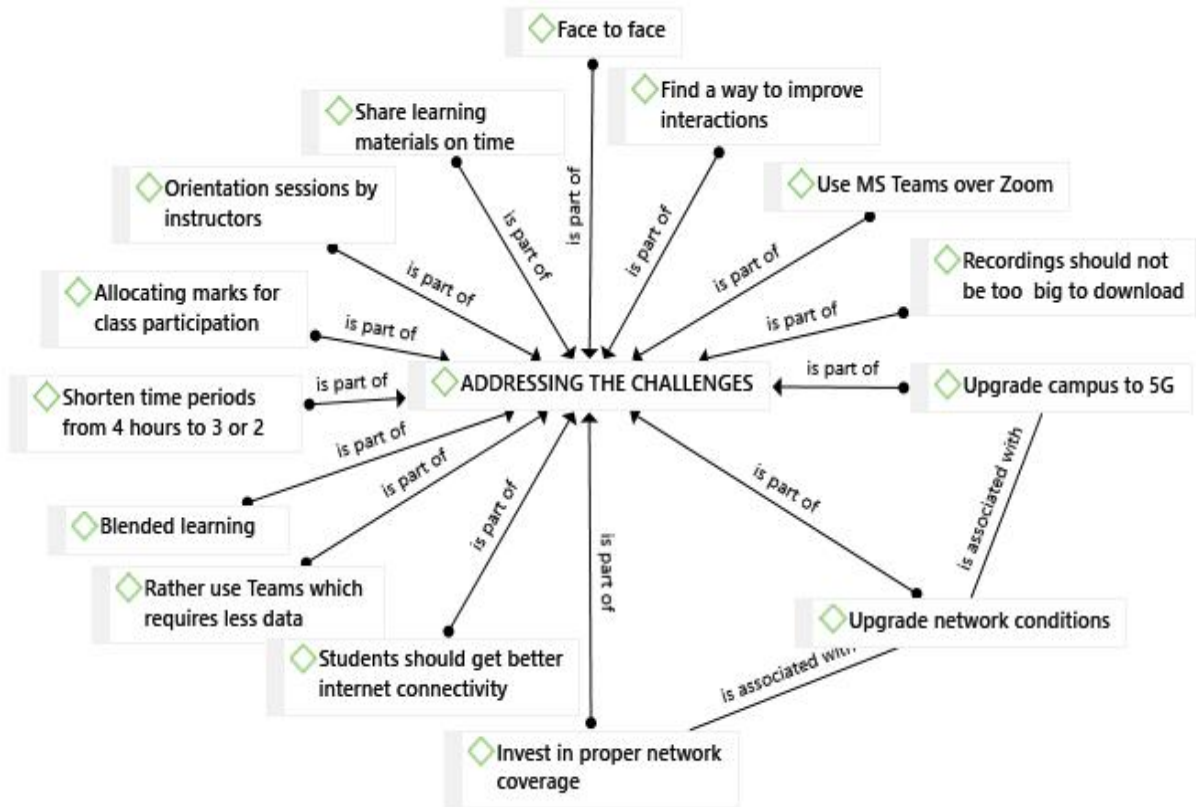


Figure 2: Strategies for addressing virtual learning challenges
Source: Authors' development (2024)

4.3. Virtual Learning Environment Experience

The use of the VLE signifies a movement towards a more student-centred approach to learning and away from didactic instruction. This strategy has genuinely benefited postgraduate students who need a work-study balance. Rather than a one-size-fits-all learning strategy, students may more easily establish their own speed and monitor their progress. The VLE can benefit students, but the technology's potential should not be overestimated. A typical mistake educational institutions make is to assume that technology drives change. The reality is suitable modifications in curriculum and practice must accompany that technology. The full promise of technology will be realised only if there is a fundamental shift in the approach to teaching and learning. The ability to teach and learn effectively in a virtual environment requires the development of a variety of new skills, tools, and pedagogies. Figure 3 exhibits the virtual learning environment experiences for postgraduate students in Namibia.

4.4. Popular Virtual Learning Platforms

The public institutions of higher education in Namibia have implemented virtual learning technologies (applications), which are therefore prevalent in Namibian higher education. A wordcloud representation of the most prominent platforms for virtual learning success is shown in Figure 4. The aforementioned list was culled from the web survey. As seen in Figure 4, Microsoft Teams, Zoom and Moodle E-learning platforms are the most popular platforms in Namibian higher education institutions.

4.5. Universities' Effectiveness in Adopting Virtual Learning Platforms

This part of the study focused on assessing whether higher education institutions in Namibia have effectively implemented virtual learning platforms. The results show mixed results and experiences. Some postgraduate students believe it is partially effective (5/10), while others feel it is ineffective. On the positive side, postgraduate students believe it is valuable, very effective, improves teaching and learning, and is well executed. The positive experiences of virtual learning platforms outweigh the negative experiences.

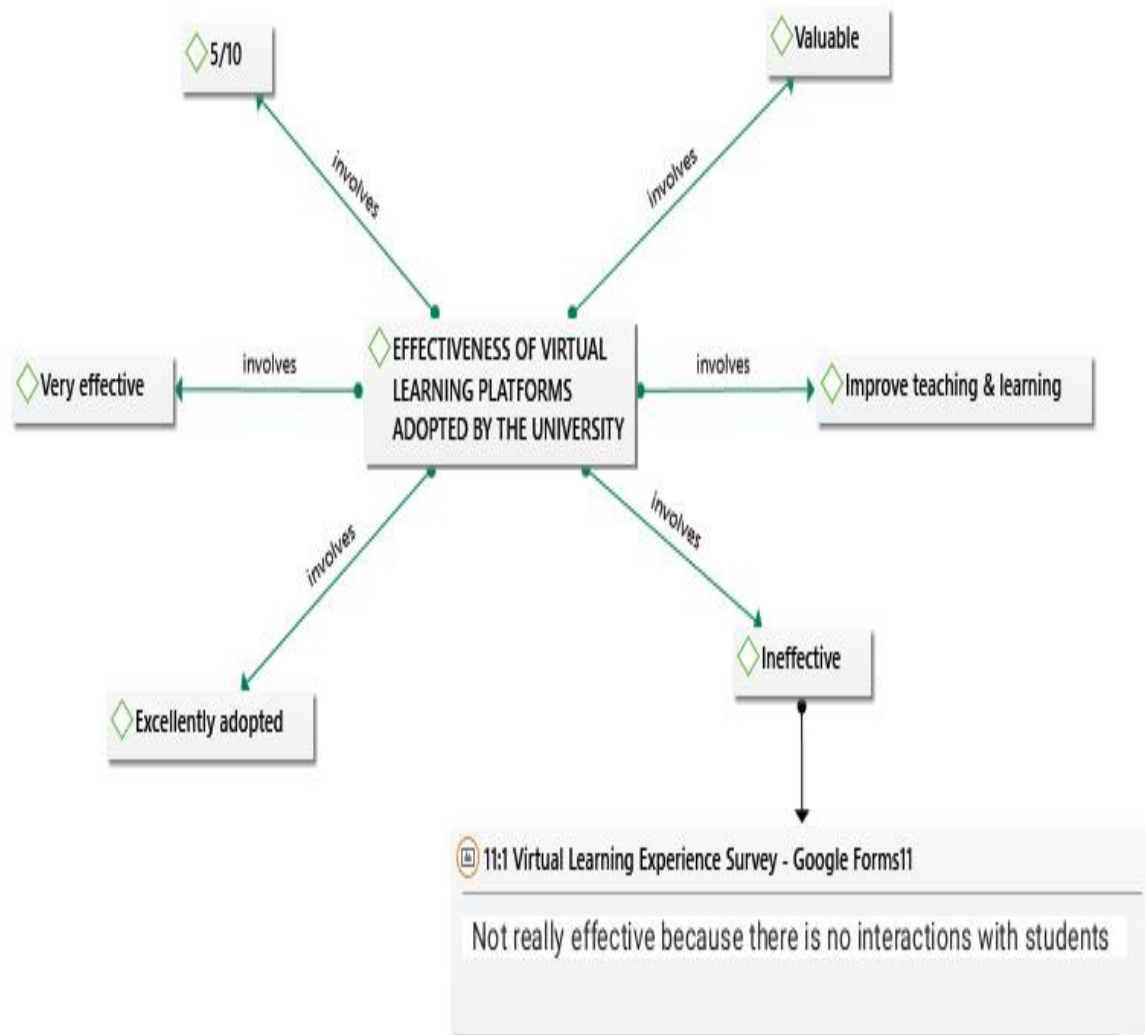


Figure 5: Universities' effectiveness of adopting virtual learning platforms
Source: Authors' development (2024)

4.6. Factors Important for the Success of a Virtual Learning Environment

Table 2 provides an extract of participants' opinions regarding the factors influencing the effectiveness of a virtual learning environment.

Table 2: Factors important for the success of a virtual learning environment

Distance learning, real-time learning
Learning at my own pace in my own comfort zone
Online library and access to various study materials and research papers
Accessibility, convenience
Including more discussions and engagements in class
eLearning and TEAM
Taking assessments on e-learning platforms
Online classes
Teams as it is.
Interaction
The time slot was perfect.
Lectures and students are most of the time available.
Teams because it can accommodate many users
Wifi
Technology knowledge and usage of different programs
Sufficient and organized information as per the course outline to ensure the flow and alignment of information sharing
Proper network or good internet
A quieter environment will be conducive... attending classes from home, especially during the hours that classes are conducted (18-22H00), which is typically during family times, is at times challenging!
..... to provide more or accessible ICT Support, especially on weekends and peak periods for submissions on the E-Learning platform that seems to be problematic at times!
Connectivity and know-how aspect.
Minimize distraction and a positive atmosphere, I like what prof Asa does, he always crakes some jokes, short stories of encouragement, short videos of motivation, or a song
Internet connectivity and real participation
all along as there is connectivity
Accuracy of dates of classes and assessments
Wi-fi
Recording of sessions is of the essence and a go-to for students in terms of clarity if need be.
Convenient and it is optional
1. Recording of the sessions.
2. Flexibility
Zoon and Team
Effective network
Availability of the right study materials or links
Good internet reception
Quality of the presentation
eLearning and TEAMS
I am able to attend class in the comfort of my work and home
Recording and sharing of screens
Cheap and easy compared to face-to-face
The ability to attend virtually
Recordings
Recorded
Focus, office environment with no distractions, better bandwidth
The group assignments and individual presentations are really helpful and help improve a person's individual performance.
User-friendliness and easy navigation.

Source: Authors' compilation from extracted verbatim responses (2024)

4.7. Strategies for Improving the Virtual Learning Experience in Namibia

Table 3 identifies a set of strategies recommended by participants to improve the virtual learning experience in Namibia.

Table 3: Strategies for improving the virtual learning experience in Namibia

<i>Get students better internet devices.</i>
<i>Virtual learning will give them the chance to improve their knowledge. The strategy to improve virtual learning is to add recorded courses to the platform with students, which can let students self-learn first, then have a discussion and conversion engagement.</i>
<i>Develop an online campus with everything we need</i>
<i>I would still like to access study material from previous years.</i>
<i>None. I appreciate the university's efforts to accommodate learning opportunities for students all over the country.</i>
<i>Zoom</i>
<i>The university must supply the students with technological appliances.</i>
<i>Provide orientation on accessing online resources.</i>
<i>Maybe we can put more of the proscribed information, textbooks, etc.</i>
<i>Please try to fit in something like Microsoft Teams on e-learning. In this way, students fully interact and engage and do not have to use two platforms.</i>
<i>Have weekend classes virtual, too</i>
<i>Online exams</i>
<i>Negotiate on behalf of students with telecom or MTC for a good package, and the network should be reliable.</i>
<i>Face to face</i>
<i>Issue internet devices</i>
<i>Conduct more awareness sessions for all stakeholders in order to get and maintain buy-in. Offer and support those that are not in the position - social responsibility.</i>
<i>The eLearning system needs to be upgraded because it is off, and students are unable to access it sometimes.</i>
<i>Virtual learning platforms must be made compulsories for all postgraduate students so we can start using them.</i>
<i>Motivation is essential for efficient learning, and the perceived relevance of the course is likely the single most important factor in motivation. As a result, it is critical to address the course's utility, value, and application from the start. Help your students realize how your course provides a necessary basis for more advanced courses, how it will assist them in acquiring certain abilities, or how it covers problems that they find especially appealing. Collaboration throughout the institution is essential to integrate and embed assistance, allowing it to be delivered to students when needed. When academic and professional personnel cross conventional boundaries to collaborate more closely, a more comprehensive student experience may be offered, including incorporating assistance within the curriculum.</i>
<i>What about having virtual classes while a few students attend the class? It seems the human element needs to be enhanced.</i>
<i>to make sure all learning materials are uploaded on e-learning on time</i>
<i>Have online classes and assessments and have 1 week of face-to-face contact lessons. e.g. Thursday Module 1, Friday Module 2 and Saturday Module 3</i>
<i>Offer portable wi-fi</i>
<i>To provide more video and Zoom classes</i>

5. Discussion

Flexibility is VLE's key benefit. Accessing course materials at a convenient time and place allows more and different students to participate in learning. For instance, distance and work-based learners can use various learning tools conveniently. Instead of traditional teaching and learning, they can interact with other students and staff (Atiku and Anane-Simon, 2022). The learning experience is also improved. Allowing students to share their thoughts and experiences using virtual learning platforms can boost their motivation and comprehension (Kaisara et al., 2022).

Virtual learning courses without pilots are problematic. Hence, thoroughly assessing student needs and resources and creating a convenient course component, such as a virtual conference, may be beneficial. The tight deadlines for postgraduate students for Namibian postgraduate students make exam-work balance challenging. Students normally have about two weeks to finish and submit assignments. This helps urban students but is critical for rural postgraduate students who lack proper connectivity infrastructure in their respective areas regardless of affordability. Issues such as electrical outages sometimes delay the submission of assignments. Virtual learning is beneficial but can be risky if not managed properly.

Virtual learning environments are improved by the availability of modern learning technologies and strategies that give structure and stimulate social or collaborative learning. Postgraduate programmes should embrace modern teaching and learning methodologies that emphasise knowledge application through exploration, synthesis, and the utilization of case studies to improve learning (Chigbu et al., 2023). They can be taught in person or online, including the case, related resources, and virtual lessons. Single or group projects allow students to explore their interests or apply their studies to real-world problems in a flexible setting.

6. Conclusion and Recommendations

This study explored the virtual learning experiences of postgraduate learners in Namibia. The results provide an understanding of virtual learning enhancers among postgraduate students in Namibia, which is understudied yet educationally beneficial. Students at the postgraduate level are familiar with e-learning, electronic resources, and virtual learning platforms, particularly remote learning. This study suggests that virtual learning could replace traditional learning in higher education, continuing education, and professional development. This study concludes that virtual learning enablers for postgraduate students include ICT skills, virtual interactions, time and pace of learning, student evaluation, a supportive learning environment, and the freedom to learn. The courses can be completed online or as part of a blended learning approach, with clear instructions, criteria, and formative feedback to improve student experience and academic performance. Effective distance supervision, clear instructions, criteria, and formative evaluation are critical for postgraduate research projects and practical courses. Future studies should focus mainly on practical postgraduate programmes and their influence on students' academic performance through a mixed-method approach rather than a general inclusion of postgraduate students irrespective of their study programmes relying on a mono-method approach.

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