TEACHERS AND LEARNERS IN OTJIWARONGO CIRCUIT'S EXPERIENCES OF PEDAGOGY AND ONLINE PEDAGOGY DURING THE COVID 19 PANDEMIC

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ABSTRACT

Scholars and practitioners worldwide acknowledge that online pedagogy is one of the most effective instruments for developing a successful teaching and learning environment. This research sought to investigate how online learning and teaching may be applied in a resource-limited context to benefit both teachers and learners at two chosen schools in the Otavi town circuit. This study used Active Learning Theory and Experiential Learning Theory as its theoretical underpinnings. It used a multiple-case study methodology and qualitative technique. Participants were drawn from two schools in the Otjiwarongo circuit using a purposive sampling approach. Data collection instruments included semi-structured interviews, focus group discussions, and observation checking lists. The study examined the teachings of teachers and learners in grades 9, 10, 11, and 12 who employed online pedagogy during the COVID-19 epidemic. The findings showed that poor connectivity issues, a lack of computer literacy, and a lack of information technology devices presented challenges for both teachers and learners. Despite the fast growth of information and communication technology, the schools in this research were not equipped to accept it. This study contends that online learning in Namibian schools still has various problems that must be solved if it is to be successful. As a result, the study suggests that the Namibian government invest in providing information and communication technology infrastructure in schools, as well as capacity building in online pedagogies for teachers and learners, in order to create an effective online learning environment.

Keywords: Online pedagogy, Pedagogy, COVID-19 pandemic, implementation, Namibia, teachers and learner's experiences

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DEDICATION

This thesis is dedicated to my dearest daughter Mia Ndapandula Mwatilile.

To my parents, the only asset of my life and crown on my head. I appreciate your unique support, love, and prayers throughout the study.

DECLARATION

I, Silkka Katoole Iiyambo, hereby declare that this study is my work and is a true reflection of my research and that this work or any part thereof has not been submitted for a degree at any other institution.

April 2024

Silkka Katoole Iiyambo Signature Date

LIST OF ABBREVIATIONS AND ACRONYMS

ALT:	Active Learning Theory
AC	Abstract Conceptualization
AE	Active Experimentation
BLT	Behaviourist Learning Theory
CE	Concrete Experience
CLT	Cognitive Learning Theory
CLT	Constructivist Learning Theory
ELT	Experiential Learning Theory
FGD	Focus Group Discussion
ICT	Information Communication Technology
IT	Information Technology
LMS	Learning Management System
MEC	Ministry of Education and Culture
MoE	Ministry of Education
MoEAC	Ministry of Education Arts and Culture

MOODLE Modular Object-Oriented Dynamic Learning Environment

ODL Open and Distance Learning

RO Reflective Observation

UNAM University of Namibia

CHAPTER 1: ORIENTATION OF THE STUDY

1.1 Introduction

The development of information communications technology (ICT) has made online pedagogy a highly sought-after mode of learning across schools and universities around the globe. Online learning has recently become a requirement in most institutions of basic education, which was due to the lockdown instituted in many countries during the pandemic, particularly in developing countries such as Namibia (Gervasius, 2020). The introduction of new technology is providing educators with the opportunity to create a variety of online pedagogy; however, many teachers and learners, particularly those who are used to traditional face-to-face teaching and learning often experience challenges in adapting to online pedagogy due to the availability of reliable online learning platforms as well lack of technological knowledge (Gilbert, Whitelock & Gale, 2011). Online pedagogy has often been considered as possible solutions to the challenge of access, in part, because of the flexibility in terms of scheduling and delivery. However, some researchers suggest that online pedagogy present a different set of challenges (Bower & Hardy, 2004; Kawalilak *et al.*, 2012; Oye *et al.*, 2011). Very little research has been conducted, especially in developing countries, to explore how teachers and learners experience online pedagogies in general. The purpose of this study is to explore how online learning and teaching be implemented in a resources scarce environment to be positively experienced by both teachers and learners in two selected school around Otavi town in Otjiwarongo circuit.

1.2 Background of the study

Online pedagogy became a norm in this digitalized world (Gervasius, 2020). Most governments around the world, including Namibia, called for the implementation for emergency online teaching and learning in schools, as an alternative to the face-to-face mode of delivery during the pandemic (Gervasius, 2020). Namibian social-economic got disrupted since lock down and in order to address schooling during this period, the Namibian government established the National Emergency Response to Education Committee. During the lock down schools experienced shortage of funds for online resources and the cost of Internet in Namibia is expensive. While some teachers had experience with technology integration strategies fundamental to online teaching and learning, the majority of them did not (Boer & Asino, 2022). Previous researchers have found out that, since the introduction of online pedagogy the learning process has developed, and online assessment has upgraded the measurement of learner outcomes and made it possible to obtain immediate and direct feedback (Gilbert, Whitelock & Gale, 2011). Over the years, the evolution of information communications and technology has brought new opportunities in the education sector, but at the same time, placed high demands on teachers and learners who are challenged with a lack of technical skills and the users' computers hardware and software as tools to integrate ICT in classrooms (Karipi, 2019). Teachers now have to compete with the learner in accessing internet information and in using the hardware and software to enhance the teaching/learning process (UNESCO, 2009). The use of online pedagogy in basic education has brought significant changes in the teaching and learning processes in most parts of the world during COVID-19 pandemic. Oye, Salleh, and Iahad (2011) believe that as technology

improved, new devices were developed and created, specifically the microprocessor and personal computer, which changed the scenario of learning, leading to online learning, as we know it today (Shan Fu, 2013).

Proponents of online pedagogy argue that there is little literature in Namibia on online pedagogy education compared with what is obtainable from other parts of Africa such as East and Southern African countries, where online education started years earlier (Kamerika, & Matengu, 2006; Iipinge, & Katulo 2010; Quest, 2014). These authors identified some of the challenges experienced by both teachers and learners when implementing online pedagogy namely institutional obstacles, prior knowledge of learners before joining the online education programs, financial challenges, and support services.

Generally, there is still a wide gap between the developed and the developing nations in terms of the use of online pedagogy and multimedia as tools to deliver quality education (Karipi, 2019) In Namibia, although the government has made a continuous effort during the pandemic to introduce emergency online teaching and learning by provide technological infrastructure to schools, the involvement of teachers has been a challenge (Namibia Ministry of Information and Communication Technology, 2021). Currently, many teachers are conversant with the use of traditional tools such as textbooks, but their skills in the use of technology are yet to be determined and learners, on the other hand, may find it difficult to explore and take advantage of the available technology for their benefits without teachers' involvement (Ministry of Education, 2005).

To complicate the challenges of online pedagogy further, research suggests that access and success of online pedagogy in school are still real problems in most countries across the world (Sc, 2016). Mehanna (2016) observes that no nation in the world has accomplished giving access to education to all its citizens. A similar challenge, in terms of access and success in school online pedagogy, can be observed across many countries' higher education institutions. The literature indicates that without proper training for both teachers and learners online teaching and learning will remain incomplete (Shan Fu, 2013). The effectiveness of online pedagogy in education depends on how it is integrated, and teachers remain key to the success of online pedagogy in teaching and learning (Karipi, 2019).

Online pedagogy is often associated with extensive use of technology. Some scholars believe that the format of a course challenges or influences student success (Abramenka, 2015) These scholars are primarily concerned with identifying the best tools to use for successful learning in online pedagogies, and argue that student technical and non-academic skills are behind their success in online pedagogies (Abramenka, 2015). There is still a wide gap in Namibia, in terms of the use of online pedagogy in basic education. Although there is not enough evidence that teachers and learners use online pedagogy in their teaching and learning, there are no studies conducted in Namibia that specifically looked at teachers' and learners' experience with on online pedagogy. Studies conducted in Namibia focused on ICT integration in education in general (Kamerika, 2006; Iipinge, 2010; Matengu, 2006; Quest, 2004; Katulo, 2010). Online pedagogy seem to be well

established and researched at the higher education level but not at the basic level, although it was done in higher education, Karipi is if the opinion that he challenges are similar (Karipi, 2019). Most higher education institutions are still grappling with getting technicalities in places such as reliable network connectivity, information communication capacity, clear navigation to learning content, timetabling, and session scheduling, and reliable hardware and software required to access online learning platforms to keep teaching and learning afloat (Ngepathimo & Nyambe, 2021) during COVID-19. This development has prompted the researcher's interest to fill this gap by exploring how online learning and teaching be implemented in a resources scarce environment to be positively experience by both teachers and learners in two selected school around Otavi town in Otjiwarongo circuit.

1.3 Statement of the problem

As is the case in most African countries, Namibia's online pedagogy is associated with several challenges during COVID-19 pandemic. Not all learners and teachers have equal access to the necessary technology, such as computers. This is what is often referred to as the 'digital divide' (Ajadi *et al.*, 2008) that hinders instructional delivery. In some cases, the teachers and learners have poor knowledge of computers. Inadequate funding of online pedagogy is also a major problem, adding challenges in terms of access to Internet connectivity, hardware, and software which are not readily produced locally (Karipi, 2019). Teachers and learners, particularly those who are used to traditional face-to-face teaching and learning often experience challenges in adapting to online pedagogy due to a lack of technological know-how (Gervasius, 2020). There is a lack of research in the

literature to establish teachers' and learners' experiences in online pedagogy in Namibia, studies conducted in Namibia focused on ICT integration in education in general (Karipi, 2019). However, since this claim is generalized to the entire of Namibia, it is not clear whether it applies to Otjiwarongo circuit as well. Therefore, this study explored how online learning and teaching is being implemented in this resource scarce environment.

1.4 Objectives of the study

This study aims to explore teachers' and learners' experiences of online pedagogy and other approaches of teaching in the Otjiwarongo circuit during and after the pandemic. The objectives of the study are to:

(i) Examine the teacher and learners' experience with online pedagogy in Otjiwarongo circuit during and after the implementation of the emergency teaching in 2020.

(ii) Explore if and how teachers and learners used online pedagogy.

(iii) Identify training needs on how to use online pedagogy.

(iv) Identify teachers' and learners' challenges when using online pedagogy.

(v) Suggest how online pedagogy can be improved.

1.5 Questions of the study

The study research questions were:

1. The implementation of what online teaching and learning strategies were possible during the pandemic?
2. What challenges in terms of skills and resources should be addressed to improve online the learning and teaching experience in Namibia?
3. How can the current practice of online pedagogy be improved?

1.6 Significance of the study

The significance of the study is that it allows the teachers to see if their online pedagogy have been effective and may help teachers to identify and address challenges that may be in online pedagogy. It contributes to the body of knowledge in the field of online pedagogy in Namibian schools and beyond. It may inform policy formulation and review to enhance online pedagogy in Namibian schools, as well as inform the government on the need for investment in IT infrastructure as a means to enhance online pedagogy. It may also inform other similar studies in other education regions in Namibia.

In addition, the significance of the study and the findings may contribute to the research as the field since allow facilitators and policymakers to take suitable policy measures and

implement development plans that help create informed participants in online pedagogies endeavour.

1.7 Limitations of the study

The study was limited to only two selected schools due to resources, such as time and finances. As a mitigating factor, only schools around Otavi town were selected. Financial implications came to the fore in this study as visiting many schools required money for printing and traveling costs. Interviews can cause biases because they provide less anonymity. Therefore, some of the participants may not be comfortable providing accurate data. This limitation was mitigated by assuring participants of the highest degree of confidentiality of the data they are providing.

1.8 Delimitation of the study

There are fourteen educational regions in Namibia. Online pedagogies have been rolled out all over the country to supplement face-to-face learning and assessment. However, this study was conducted only in the Otjiwarongo circuit specifically schools around Otavi town only. Other educational regions did not form part of this study. The generalization of the findings will be confined to schools with similar settings.

1.9 Definition of the key terms

Computer hardware: is a collective term used to describe any of the physical components of a log or digital computer (Doug, 2002).

Computer software: a set of instructions, data, or programs used to operate the computer and execute specific tasks (Baran, 2011).

Circuit: Designates a group of schools clustered together, usually sharing the same scopes, schemes of work, and other relevant teaching materials (Ministry of Education Arts and Culture, 2012).

Development plan: is defined as deliberate government to implement, monitor, and supervise as well as coordinate economic decisions made on economic issues of a nation (Maree, 2007).

Face-to-face teaching and learning are instructional methods where the course content and learning material are taught in person to a group of learners (Gilbert & Whitelock, 2011).

ICT integration: is defined as the use of **ICT** to introduce, reinforce, supplement and extend skills (Creswell, 2014).

IT: is the use of any computers, storage, networking and other physical devices, infrastructure and processes to create, process, store, secure and exchange all forms of electronic data (Serdyukoy, 2015).

Information Communication Technology (ICT): is a broader term for information technology (IT), which refers to all communication technologies, including the internet, wireless networks, cell phones, computers, software, middleware, video-conferencing, social networking, and other media applications and service (Serdyukoy, 2015).

Implementation: the carrying out, execution, or practice of a plan, a method, or any design, idea, model, specification, standard, or policy for doing something (Kearn, 2012).

Online learning: is education that takes place over the Internet (Kearn, 2012).

Online pedagogy: A set of prescribed methods, strategies, and practice for teaching an academic subject in an online (or blended) environment, where learners are in a physical location separate from the teacher and or/other learners (Lynch, 2006).

Pedagogy: the study of teaching methods, including the aims of education and how such goals may be achieved (Oxford Dictionary).

Policy: a course or principle of action adopted or proposed by an organization or individual (Arend, 2007).

Personal computer: is a general-purpose computer whose size, capabilities, and original sale make it useful for individuals, and is intended to be operated directly by an end-user with no intervening computer operator (Doug, 2002).

1.10 Structure of the thesis

This thesis is organized in the following manner:

Chapter 1: Orientation of the study: This chapter includes the introduction, background to the study, problem statement, aims and objectives, research questions, the significance of the study, limitation of the study, delimitation of the study, the definition of the terms and the chapter's outline.

Chapter 2: Literature Review and Theoretical framework: The review of the literature

that discusses and conceptual framework that guided the exploration of the specific issues being studied was also presented.

Chapter 3: Research design and methodology: This chapter describes the research design, the researched population, sample and sampling techniques, and how data were collected for this study as well as the ethical.

Chapter four: Data analysis and presentation of data: This chapter contains a detailed presentation and analysis of the collected data. Detailed descriptions of the research findings were discussed. The findings were presented in tables and figures according to the emerging themes.

Chapter five: Data discussion and interpretation, summary, conclusion, and recommendation: In this chapter, the findings of the study are elaborated on and discussed. As the last chapter, the summaries of the findings were presented and conclusions were drawn from the findings based on the existing literature. The study's contribution and the gap it filled, which was identified earlier during the study, were also discussed. Recommendations and areas for further study were also presented.

1.11 Summary of the chapter

The introduction and the background context of this work were discussed in this chapter to highlight and explain the type of research problems that form the focus of the study. The delimitation clarified the focus of the research while selected definitions were given for a precise understanding of the conceptual terms used in the study. An outline of the

chapters was given to clarify the structure of the thesis. The next chapter provides a new review of related literature on teachers and learners in the Otjiwarongo Circuit's experiences of pedagogy and online pedagogy during the COVID-19 pandemic.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter provides literature on the research topic; teachers and learners in Otjiwarongo Circuit's experiences of pedagogy and online pedagogy during the COVID 19 pandemic. This chapter commences with a review of relevant literature to establish a framework for the study. The literature includes an overview of the strategies, challenges faced by teachers and learners of online pedagogies and best practices in online pedagogies primarily in Otjiwarongo Circuit's.

2.2 Theoretical framework

Many learning theories, including the Behaviourism Learning Theory, the Cognitive Learning Theory, the Constructivist Learning Theory, the Experiential Learning Theory, and the Active Learning Theory, are employed in online teaching and assessment (Richey, Klein & Tracey, 2011). The Active Learning Theory and Experiential Learning Theory of John Dewey were determined to be more relevant in this investigation. As a result, these ideas were employed as a lens to examine how teachers and learners in Otjiwarongo circuit pedagogical and online pedagogical experiences during the COVID 19 epidemic.

2.2.1 Using experiential learning theory and active learning theory as lenses to understand teachers' and learners' experiences on online pedagogy

These theories are closely related to the motivation behind teachers' and learners' experiences with online pedagogy, which is the heart of this study. They play a vital role in online pedagogy. Each of these theories will be discussed individually below.

2.2.2.1 Active learning theory

The Active Learning Theory (Lunenburg, 1998) is a learning theory that is most commonly employed in online learning and assessment. This philosophy emphasizes improving learners' skills via knowledge and understanding rather than delivering information. According to the active learning hypothesis, in order to learn better, learners should be actively engaged or interested in the learning process. Interactivity, gamification, quizzes, and workouts are all online features that correspond to the active learning theory (Richey, Klein, & Tracey, 2011). According to Richey, Klein, and Tracey (2011), active learning is a method in which learners actively participate in the learning process by increasing their knowledge and comprehension. In schools, this is often done in response to learning opportunities designed by their instructor. Online tools such as Getting Started with Active Learning introduce teachers to new concepts and practices that connect theoretical knowledge with actual classroom implementation (Gilbert et al., 2015).

2.2.2.2 Experiential learning theory

Experiential learning theory provides a fundamentally different perspective on the learning process than behavioural theories of learning based on empirical epistemology or the more implicit theories of learning that underpin traditional educational methods, which are mostly based on a rational, idealist epistemology (Kolb, 2015). From this diverse point of view arise some quite different prescriptions for educational practice; the right linkages between learning, work, and other life activities; and the development of knowledge itself (Kolb, 2015).

2.2.2 Employing experiential learning theory to expand the learner's experiences with online pedagogy

Concrete or tactile experience (CE), reflective or deliberate observation (RO), abstract or intellectual conceptualization (AC), and active or practical experimentation (AE) are the four cyclic aspects of Experiential Learning Theory. It was extensively employed as a framework for this study since it was more learner-centred than cognitive theories of learning. ELT gives a comprehensive concept of the learning experience that places the learner at the centre and promotes a multi-lateral model of adult development that appears to be required for this task (Kolb, 2015). According to Tapfumaneyi (2013), holistic development should be able to touch the learners' bodies and minds.

The ELT model's principal use is to empower learners to govern and regulate their learning by creating individualized learning styles. This will aid in the selection and improvement of the set of learning abilities that each student brings to any given learning circumstance (Kolb, 2015; Miettinen, 2000). Because it includes the learner consciously applying experiences, experience is a constantly crucial component in learning. According to Carver et al. (2007), experiential learning gives an already existing framework within which to construct a new paradigm for online pedagogies, with the individual as the movable centre of gravity of the learning environment, either alone or in creative interaction. This is to emphasize that online learners require all four ELT talents in order to have the most successful learning experiences. The method the theory employed has cognitive initiative, perceived as the type of belief necessary to tackle the diverse challenges of online learners (Kolb, 2015).

Kolb's ELT was created by combining the learning principles of John Dewey, the creator of constructivism in education, Kurt Lewin, the father of social psychology, and Jean Piaget, a cognitive developmental psychologist. The theory is considered 'experiential' since it is based on the work of these three researchers (Richmond & Cummings, 2005). Kolb noted that his goal was not to create a new theory of learning, but rather to promote a holistic integrative approach on learning via ELT that integrates experiences, perceptions, cognition, and behaviour (Kolb, 2015:21). Every learner is related to all four cyclic stages of the model, according to ELT (Kolb, 2015).

According to Kolb (2015), learners must have four types of abilities in order to be effective: concrete experience abilities (CE), reflecting observation abilities (RO), abstract conceptualization abilities (AC), and active experimenting abilities (AE). That is, individuals must be able to engage in new experiences completely, freely, and without bias (CE). They must be able to reflect on and observe their experiences from a variety of angles (RO). They must be able to develop concepts that incorporate their observations into logically sound theories (AC), as well as apply these theories to make decisions and solve issues (AE).

The learning methods are depicted as a cycle in which the learners participate in experiencing, reflecting, thinking, and acting. Concrete experiences encourage observation and thought, which leads to new activities. This, in turn, leads to practical experimentation, which either regulates or results in new tangible experiences (Kolb & Kolb, 2005). Perceiving and processing, according to Kolb (1984), are two fundamental aspects of learning experiences. Perceiving refers to how learners perceive and interpret information from actual experiences in order to feed into reflective observation, whereas processing refers to how learners understand and process information from abstract conception to active experimentation. Finger 2.1 depicts Kolb's experiential learning cycle.

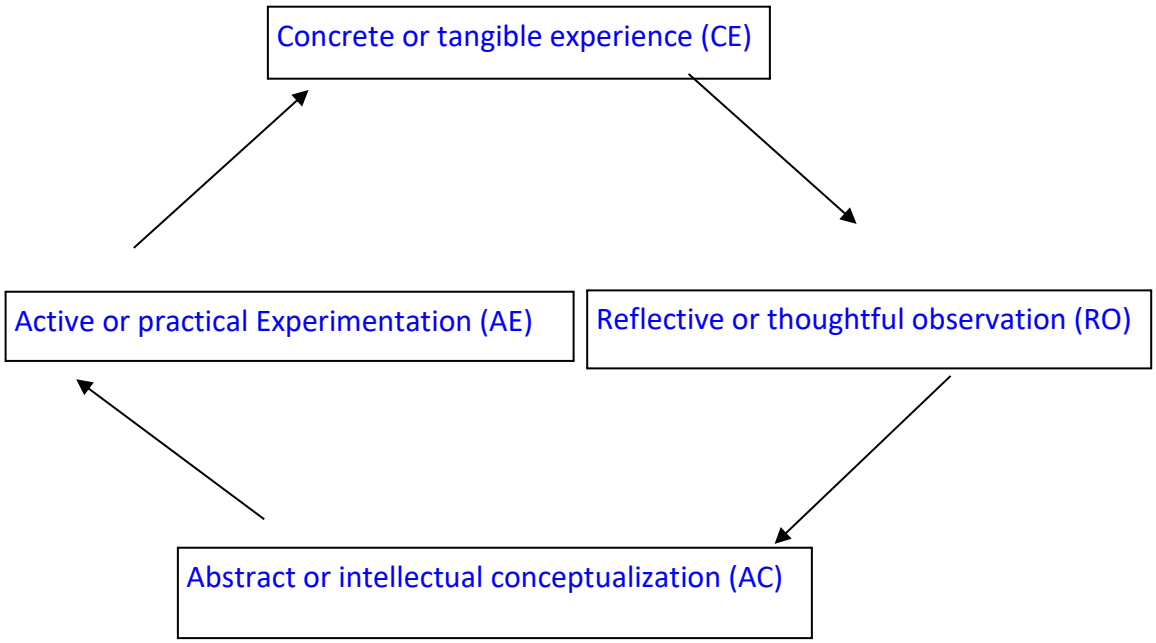

Figure 2.1: Kolb's adapted model of experiential learning

(Source Kolb, 1984: 141)

The concept is used to describe how experience is transformed into ideas, which then affect the selection of subsequent experiences. The practice of utilizing ELT to broaden learners' experiences with learning may be regarded as something personally significant to the learners in which they interact. Learning involves not only the brain but also the person's senses, sentiments, and personality (Andresen, Bound, & Ohen, 2000). Throughout the learning process, learners have the opportunity to write about their experiences and reflect on their thoughts. According to Kolb (2005), one of the most important and powerful aspects of experiential learning is that the images in our brains originate from the experience itself. As a result, learners should be encouraged to develop experiences that build on their prior experiences yet are relevant and useful. This theory's

selection aids in the exploration of teachers' and learners' experiences in online pedagogies and discloses teachers' and learners' experiences with online pedagogies.

John Dewey's constructivist theory of learning was one of the principles employed by Kolb in the creation of ELT. Merriam, Caffarella and Baumgartner (2007) define constructivism as a learning theory that allows learners to construct meaning and make sense of their experiences. Learners in this learning environment gain knowledge by observation, processing, and interpretation of data (Wilson, 1997). Cavanaugh et al. (2004) state that every learner generates "rules and mental patterns" that they may use to make sense of their experiences. Learning is thus a process of managing the mental mind in order to adapt to new experiences. The idea is learner-centred rather than teacher-centred, with learners taking an active role in and responsibility for their own learning. They build their knowledge based on prior experiences and interactions with their surroundings. Learners-centeredness fosters mental curiosity, problem-solving ability, creative imagination, leadership expertise, reasoning, and vigour. Merriam et al. (2007) state that engaging learners in experience-based learning is a crucial approach for them to generate new meaning. Instead of simply providing knowledge, the teacher supports and supervises learning. These sorts of learning activities enable successful online pedagogy in primary schools (Kolb, 2005).

2.2.3. Application and relations between John Dewey ELT and ALT, in online pedagogy

The growing demand for online pedagogy has prompted an urgent request to evaluate the impact and efficacy of teachers' and learners' experiences with online pedagogy of instructional delivery, as well as to assess and support services utilising current technology (Richmond & Cumming, 2005). To assess the quality of the experience and, ultimately, the outcomes of learners in online pedagogy. Kolb's learning styles, learning modes, and learning settings must all be considered. According to Richmond and Cummings (2005), Kolb's four basic learning styles are assimilative, accommodative, divergent, and convergent. These learning styles were combined with any two of the following learning modes: tangible experiences, reflective observation, abstract conceptualization, and active experimentation. According to Kolb (2005), the four learning environments that house the learning styles and learning modes are emotional, symbolic, perceptual, and behavioural environments. They also argued that there are links between learning modes, learning styles, and learning settings, and that a certain learning style may be merged with more than one learning mode.

Assimilative learners are good observers because they are more interested in concepts and abstract notions. Accommodative learners are more thorough in task preparation and completion, adapt well to change, and prefer working in groups. Kolb (1984) asserts that convergent learners can solve issues, make decisions, and apply their decisions to solve other problems. They often perform well in traditional exams because they can order their ideas to provide proper solutions to regular issues. Kolb (2005) went on to say that learners

with a divergent learning style are the greatest at visualizing and providing meaning to ideas because they are creative and can recognize physical and particular examples of concepts.

While many studies have been conducted to investigate the impact of learning styles in many fields of study, few have focused on online pedagogy (Jones, Reichard, & Mokhtar, 2003; Richmond & Cummings, 2005). According to Simpson and Du (2004)'s research on the consequences of learning styles and learners' satisfaction in an online environment, convergent learners appreciate online pedagogies more than divergent, accommodative, and assimilative learners. According to Terrell and Dringus (2000), there is no evidence that learning styles ensure success in online pedagogies. They also stated that while learners may operate in all four learning styles, their preferred learning style may be impacted by the material being taught.

2.2.4 Implication of ELT and ALT for online pedagogy

The integration of diverse learning styles in online pedagogy learning resources allows individuals to choose appropriate tasks based on their preferred learning style (Ally, 2004). Learners with concrete experiences prefer detailed examples that allow them to participate and interact with their classmates. They prefer learning support that allows them to interact with their classmates in a group setting. These learners regard their instructor as a resource and prefer to receive feedback from their classmates. Reflective observation learners love extensively watching before acting and prefer to have access to all learning resources. They regard the instructor as an expert and avoid interacting with

other learners. Learners who are good in abstract conceptualization prefer to deal with things and symbols and less with peers. They enjoy working with theory and doing rigorous, in-depth analyses of events. Active experimenting learners, on the other hand, excel at issue solving through group discussions. Despite their affinity for active learning techniques, they prefer to develop their own methods of assessing circumstances (Kolb, 1984; Diaz, 2000; Ally, 2004; Barker et al., 2012).

Support levels and procedures are critical actors in the online pedagogy of teachers' and learners' experiences, and they must fundamentally alter for learners with diverse learning styles. According to Ally and Fahy (2002), assimilative learners like the intense presence of a teacher far more than accommodating learners. Keeping learners active and engaged in meaningful activities in online pedagogy encourages high-level information processing, which aids in the creation of meanings that are highly personalized to each learner's experiences and cognition. The two theories utilized as lenses in this study encourage learners to develop their own knowledge rather than just accepting the knowledge provided by the teacher. Knowledge production is made easier in online pedagogy by well-planned interactions via online training. Murphy and Cifuentes (2001) agreed, arguing that interaction is essential in developing a feeling of presence and community for online teachers and learners. Interaction among online pedagogy learners improves transformative learning. This is because transformational learning enables learners to interact with the content, other learners, and teachers in this context. According to Ally (2004: 20), "the design of educational experiences includes the transformational nature of the relationship between 35 teachers, learners, and content" and is critical to learning

experiences. In online pedagogy, the learners set the learning agenda. As a result, they initiate learning and interaction with other learners and teachers (Moore, 1993; Murphy & Cifuents, 2001). Collaboration, which promotes constructivist learning, enables learners to collaborate in groups to build real-life experiences. Moore's research has shown that implementing excellent interaction and conversation is a key factor in overcoming hurdles to success in online teaching (Kolb, 1984; Diaz, 2000; Ally, 2004; Barker et al., 2012).

Another aspect is giving learners influence over the learning process in online pedagogies. The instructor is to act as a guide for the learners, while the learners decide on learning objectives through guided discovery. Time for reflection is required for individuals to integrate and internalize the knowledge gained from the material in order to improve their learning experiences (Ally, 2004).

2.3 Online pedagogy strategies

Online pedagogy has been broadly defined as teaching and learning that involves the use of information and communication technologies to facilitate access to learning; learning that is enabled electronically; learning that is empowered through the use of multimedia technologies; and/or any learning that is Internet-enabled or Web-based (Abaidoo, 2015; Thomas, 2014).

2.3.1 The use of online pedagogy by teachers and learners

Online learning has become the new normal in many educational settings, with the primary goal of preventing the COVID-19 pandemic (Ngepathimo & Nyambe, 2021). Online teaching has been identified as a potential strategy for minimizing the significant disruption caused by the COVID-19 epidemic. Given the epidemic, educational institutions had no choice but to employ digital platforms to provide their teaching and learning online (Kadhila & Nyambe, 2021). Online pedagogy allows for distant engagement between learners and professors (Ali et al, 2021). It has been maintained, however, that online teaching varies from traditional classroom pedagogies (Kirwan & Roumell, n.d.).

2.3.1.1 To enhance learners learning

Online pedagogy allows learners to interact in learning environments by participating in thoughtfully designed hands-on learning activities, collaborating with peers at various levels, participating in online learning communities, and creating learning environments that will assist them in developing lifelong learning skills (Baran, 2011). When the instructor poses a question in a typical classroom, only one student can answer (Kearns, 2012). Online pedagogy provides the teacher with a greater opportunity to evaluate overall learner knowledge. When a question is provided online, each learner must react before proceeding with the course (Robles &Braathen, 2002). This study investigates the use of online pedagogy to increase learning in the Otjiwarongo circuit.

2.3.1.2 Make assessment practices more authentic and flexible

Through the gathering, storage, and assessment of a learner's multimedia online pedagogical activities, digital learning can leave a lasting 'trace' in the form of learners' contributions to online conversation and e-portfolios of work. Peer evaluation include learners examining one other's work and offering relevant feedback that may be utilized in document editing and a better knowledge of concerns (Kearns, 2012). Learning analytics make it easier and more scalable to measure learning indicated by learners' digital activities. Such analytical input to learners can be ongoing throughout a course, resulting in early diagnoses that allow learners to focus on areas of weakness prior to a final exam. Teachers can also utilize analytics to analyse the quality and usefulness of course resources, as well as track learners' involvement and intervene as needed (Robles & Braathen, 2002).

Artificial intelligence research focuses on directing learners through learning programs with resources and at a speed that suits their requirements, interests, and capacities. New competency-based accrediting approaches promote better clarity and simplicity of transferability and recognition of credits and learning (Kearns, 2012). When opposed to traditional types of evaluation, the accessibility of such demonstrations of learning offers several benefits to both learners and teachers. New considerations arise regarding the sort of learning to assess, learners' acceptance for using technology for advanced demonstrations of learning, and exam security concerns. Not all learners are as comfortable and confident in their use of technology for learning and evaluation as their constant texting suggests (Learning & Situations, 2020).

2.3.1.2.1 Assessment methods in online pedagogy

Very few researches have reported on the sorts and distribution of assessments used by teachers in online pedagogies to contribute to learners' total grades. Swan (2001) analysed 73 approaches to online teaching and found methods such as discussion, papers, other written assignments, projects, quizzes and assessments, and group work among those that exist. Almost three-quarters of the courses in the Swan study employed online discussion as a graded activity. Written assignments and examinations or quizzes were employed in around half of the courses. Arend (2007) discovered comparable results in a survey of 60 courses. Online conversation, tests, written assignments, experimental assignments, problem assignments, quizzes, journals, projects, and presentations were among the ways she mentioned. She discovered, like Hoover, that a high majority of the courses used online teaching as a graded activity. At least 83% of the courses employed quizzes and examinations, whereas 63% used written assignments (Kearns, 2012).

Gaytan and McEwen (2002) asked teachers to select evaluation approaches that they thought were especially helpful in online pedagogy. Projects, portfolios, self-assessments, peer evaluations, peer evaluations with feedback, timed examinations and quizzes, and asynchronous conversation were all included. Based on their findings, they advocated for the administration of a wide range of regularly paced tasks as well as the provision of timely, relevant feedback (Kearns, 2012). They emphasized the need of reviewing the written record of learner discussion postings and e-mails to stay current on growing learner comprehension.

2.3.2.2 Online pedagogy assessment techniques

The transition from the traditional classroom to an online environment significantly alters human interaction, communication, learning paradigms, and evaluation approaches. Before establishing an effective assessment method, the instructor must be academically competent in the course subject. Teachers must modify the methods they show teaching and learning efficacy since the delivery method has changed (Robles & Braathen, 2002).

2.3.2.2.1 Pedagogical Considerations

Learners are expected to initiate the learning process while using online pedagogy. Learners must be accountable for reading the information, exploring the connections, participating in the conversation, asking questions, choosing to learn the objectives, and making time to study. The emphasis of online teaching shifts away from the teacher and allows for more sharing among learners (Kearns, 2012). Online contact is similar to that of a small group conversation. The educational experience, as opposed to the typical lecture, can be more exciting and inspire more critical thinking (Robles & Braathen, 2002).

Online teachers must be skilled at engaging learners in communication through synchronous (simultaneous presence, real-time, e.g., chat rooms) or asynchronous

(sequence, anytime, anyplace, e.g., email, threaded discussion forums) channels (Baran, 2011). Online educators must also be able to engage learners who are afraid of technology. Many of the Internet classes taught by the teacher rely primarily on email and chat room platforms. Chat rooms are utilized to stimulate social contact between participants, while electronic mail improves the learning experience by strengthening the learner-teacher relationship (Robles & Braathen, 2002).

2.3.2.2.2 Assessing interaction

One common topic in discussions about assessing the efficacy of online teaching is the loss of the face-to-face contact between an instructor and a pupil. Many people assume that a lack of face-to-face interaction will have an influence on learners' learning and perceptions of learning (Kearns, 2012). Where there is no face-to-face contact, teachers must find a means to give engagement, especially for learners who need incentive from the teacher (Kearns, 2012).

Teacher/learner contact is an important component of interaction assessment since it facilitates the teaching and learning process and can improve learners' communicative abilities (Draves, 2000). In the typical classroom, the instructor stands at the front of the room, lecturing or taking notes and imparting information to the learners. Instructional notes, audio, video, and conversation are also used in online delivery. According to Draves (2000), online pedagogy fosters greater interaction between and among learners and teachers than traditional education. Learners are more likely to ask questions and participate in an online threaded discussion group than in a public forum. Asynchronous

online discussion allows learners to participate fully at their leisure. The instructor may go over the discussion notes and gather the findings of learner comprehension, which will lead to the evaluation of learning outcomes. The Rubric for Assessing Interactive Qualities of Distance Learning Courses created by Roblyer and Ekhaml (2000) is one evaluation device intended exclusively for online pedagogies. This rubric assists in assessing the amount of interactivity in a course by examining four distinct areas of interaction: social objectives, educational goals, kinds and uses of technology, and the influence of interactivity changes in student behaviours.

According to Draves (2000), learners will learn more, better, and quicker than they do in today's traditional classroom since they will have access to the foremost experts as well as greater personal attention, interaction, and personalized feedback from the teacher. Online evaluation is more than merely counting the number of views or "hits" a site or student receives. In other words, showing up" does not equal "learning. What the learners do online is what should be measured. Participation is easier to track online since online course software can track how many times a student visits a certain page, how long the learner spends on the site, and so on. Learning outcomes, on the other hand, are more difficult to quantify (Draves, 2000).

2.2.2.2.3 Self-assessment

Self-evaluation should be an important part of online education. Even while we as teachers desire to examine learners' learning, learners must also engage in the assessment of their

own learning (Robles & Braathen, 2002). Learners will then be able to decide whether or not they are reaching the needed learning objectives, and if not, they will be able to repeat the training to their advantage. Learners can monitor their learning and achievement by engaging in online self-testing. Online pre-tests are useful for learners' self-assessment since they provide rapid feedback. Learners may take a pre-test at the start of the course to identify their present level of knowledge, then study the subject and retake the exam to measure their progress. A pre-test allows learners to choose the topics they will study. It informs them of their current position in the learning/knowledge process for that content (Robles & Braathen, 2002). Perhaps they are already familiar with most of the material or set of learning objectives for that phase of the course. Most crucially, a pre-test provides teachers with a means of measuring learning outcomes after the learners have completed the post-test or final examination (Baran, 2011).

2.3.2.3 Advantages of online assessment

Online pedagogy questions provide the teacher with a greater chance to evaluate overall student knowledge than would be accessible in a regular classroom (Wade,1999). When the instructor poses a question in a regular classroom, only one pupil can respond. Unless the instructor actively engages with each of the other learners in the class, the teacher has no way of knowing if they all comprehend the topic (Robles & Braathen, 2002). When a question is asked online, each learner will react before proceeding with the course. In some aspects, the nature of online pedagogies will assist in providing a mechanism to

handle evaluation concerns (Wade,1999). Written communication needed by online pedagogy can be utilized to assess a learner's progress and learning. Teachers can assess learners' improvement in language, organization, and concept development. Threaded conversations allow faculty to analyse the sorts of questions offered by learners, the types of replies made by learners, and the depth of observations between teacher and student and learner and learner (Wade,1999).

2.4 Challenges of online pedagogy

While several concerns have been raised about learners' and teachers' participation in online pedagogy, one of the most prevalent organizational issues is a failure to recognize the time required to properly create and manage online pedagogy (Gilbert et al., 2015). Converting a face-to-face lesson to an online format may be a difficult process since developing online pedagogy takes extensive planning and specialized training (Khan et al., 2017). Furthermore, establishing online pedagogy takes a large amount of work. The online pedagogical environment presents several problems that must be handled and overcome with patience, skills, and expertise. For example, the Internet's bandwidth might cause the connection to slow down, generating congestion and dissatisfaction for teachers and learners.

In addition, a shortage of resources, such as technology and staff, can lead to unhappiness among teachers and learners. The technology employed and the tools are the two most critical aspects that have a substantial influence on online pedagogy (Kampov,2010). The lack of resources increases the time and effort required by both teachers and learners.

Resistance to interactive online educational strategies is another source of dissatisfaction for both teachers and learners. To avoid unrest and opposition among teachers and learners, it is critical to give enough resources and training, support from the Ministry of Education Arts and Culture, and set clearly clear goals and expectations (Ministry of Education, 2006). If the learners do not understand their roles and expectations, this can lead to animosity on both the teachers' and the learners' sides. Both learners and teachers must be aware of their roles and responsibilities (Ministry of Education, 2006).

2.4.1 The isolated learners

External learners may encounter participation hurdles in collaborative learning activities such as group work, group presentations, and group evaluations (Davidson, 2015; Graham & Misanchuk, 2004; Jaques & Salmon, 2007). Some of the issues encountered are personal in nature, such as anxiety associated with using technology; being out of one's comfort zone; (perceived) inequity in assessment, particularly in "group" assignments; and (perceived) inability or difficulty in peer interaction, particularly in presentations. Despite their best intentions to provide equitable and beneficial learning experiences for all learners, regardless of enrolment mode, many teachers are hesitant and under-equipped to teach entirely (or mostly) online, especially if they are still learning to use some of the platforms (Gillett-Swan, 2017). This can isolate learners, who may have varying levels of competency and proficiency with various forms of IT and are thus somewhat on their own when it comes to the online learning environment via different Learning Management Systems (LMS) (Gillett-Swan, 2017).

This is especially true in collaborative learning tasks, where individuals may be barely navigating the system on their own, let alone navigating the complex environments of group interaction and social negotiation (Davidson, 2015; Graham & Misanchuk, 2004; Jaques & Salmon, 2007). While group work is an important component of education that aids in the development of numerous interpersonal and transferable employable skills, an increasing number of potential barriers to achievement beyond those commonly associated with traditional group work experiences may serve to further alienate isolated learners, resulting in their disengagement, withdrawal, or eventual exclusion from engaging with and accessing course materials and associated learning activities.

While online pedagogy expands the ways, education is offered and accessed by learners, assessment methods are frequently restricted in the variety and modes in which they are assigned in online pedagogy (Williams, Cameron & Morgan, 2012). For example, where traditional tertiary group presentations have been conducted primarily through face-to-face mediums (Gilbert et al., 2015), online pedagogy provides additional opportunities for summative assessment with group presentations (Gillett-Swan, 2017) that are not limited to a solely live option. Nonetheless, online group presentation evaluations do not appear to be a regular practice, which may be related to some of the problems that both learners and teachers have in using an online delivery platform (Jaques & Salmon, 2007). This is where the sharing of 'good practice' and 'lessons learned among members of the basic education community can help teachers concentrate on effective uses of technology while avoiding unnecessary duplication of effort and expense (Jaques & Salmon, 2007) comes into play.

2.4.2 Designing and structuring the online pedagogy

According to Baran (2011), teachers spend a significant amount of effort designing online courses. Depending on whether the course is being taught for the first time, reproduced from a face-to-face course, or replicated from a previously taught online course, the course design methods differed. All professors acknowledged the effort required preparing for online pedagogy, according to Baran (2011).

2.4.3 Technological barriers

The primary technological hurdles are due to a lack of Internet access and smart gadgets. This issue may exacerbate disparities by limiting learners' and teachers' access to necessary technologies. Indeed, not all learners have access to the essential tools, such as a fast Internet connection and a powerful computer, to benefit from online education (Gilbert et al., 2015).

2.4.3.1 Availability of Internet connection and ICT resources

The Internet connection is at the heart of online education. Because Internet access is required, smart televisions, cell phones, mobile technology, electronic learning platforms, web-based technology, and video conferencing are among the technologies that may be used by online pedagogy (Sife, Lwoga, & Sanga, 2007). According to Zakaria and Daud (2013), Internet access and computers are vital in education since they allow for greater flexibility in studying and improve the learner's learning experiences. As the newest

teaching platform, web-based course management systems (CMS) are an important aspect of the academic system in online pedagogy and can only be accessible when there is Internet connectivity. For example, one of the learning management systems (LMS) utilized to facilitate online pedagogy delivery is Modular Object-Oriented Dynamic Learning Environment (MOODLE) (Sife, Lwoga, & Sanga, 2007). It allows online teachers to design and assign tasks to learners, allowing them to engage in discovery learning and collaboration (Zakaria & Daud, 2013). Through the right use of technology, the four learning styles mentioned in this work: assimilative, accommodative, divergent, and convergent, may be better developed in online pedagogies. Teachers who lack appropriate understanding on how to employ modern technologies for online pedagogy will prevent learners from reaping the full benefits of learning (Snyder, 2009). According to Zakaria and Daud (2013), one of the obstacles cited by teachers about the use of new technology in online pedagogies is a lack of Internet access and training in how to utilize it. Teachers use whatever technology tools they have available to aid in online pedagogy.

According to Simataa (2015), in order to properly use or even discuss online pedagogy, one needs have access to a variety of ICT equipment and Internet connectivity. There is nothing teachers and learners can do without such tools. The lack of ICT resources, which are critical in the process of online education, has a direct impact on teachers' ability to continue teaching away from physical classrooms, as well as learners' ability to continue studying. According to the literature, a shortage of ICT resources and Internet access makes it difficult for teachers to utilize online pedagogy and for learners to study while using online pedagogy (Emily & Simataa, 2022).

2.4.4 Pedagogical barrier

According to Mohamedi (2020), the process of transitioning to the use of information and communications technology (ICT) to provide programs online for teachers and learners has shown the African continent's digital divide. This progress has also revealed systemic imbalances that must be addressed in order to provide fair access to high-quality online basic education. According to Amemado (2020), practically all basic education institutions throughout the world sought to apply online pedagogy during the epidemic, and the majority of the schools encountered challenges in terms of technology instruments and know-how. According to Kadhila and Nyambe (2021), despite the government's support in the form of online training for teachers, internet service, smart television in some schools, and laptops for the teaching and learning process, technical support for teachers' and learners' online pedagogy remains a challenge in schools. As a result, the evaluation of learners and academic integrity in the setting of online pedagogies remained a major problem.

They go on to say that, in order for online pedagogy to be successful, professional instructional designers must prepare the teaching materials, teachers must be pedagogically trained for developing and delivering online programs, and learners must be exposed to the dynamics of online pedagogies. Unprepared online pedagogy, according to Mohamedi (2020), degrades the quality of teaching and learning. Furthermore, it is a mistake to expect that just uploading a teacher's notes online or producing a video clip of a teacher would result in good online teaching.

2.2.4.1 The knowledge of teachers in online delivery and the uses of technology

Namibian schools must have at least ICT development level 2 according to the Tech/Na! Implementation Plan. This implies that every school should have at least one room equipped with at least 20 computers, a few projectors, and audio-visual materials. within the very least, internet connectivity is available within the school, mostly in the administration buildings. Furthermore, all teachers would be required to complete ICT Literacy training or Foundation level ICT Literacy, and the school would be required to schedule ICT training for learners at least one class each week in order to enable online pedagogies. Despite numerous attempts to create infrastructure in schools, connection is available in more than 80% of the country, but technological infrastructure disparity remains a challenge for the Ministry of Education, Arts, and Culture (MoEAC) to address (Wilder, 2012). Furthermore, the socioeconomic context influences the readiness infrastructure of online pedagogies in terms of whether the school has electricity, whether the classrooms and school are secure, whether there are enough storage cabinets, and whether the desks are large enough to accommodate a computer. Furthermore, the sorts of Internet connectivity were critical for using online pedagogy. Furthermore, connectivity and availability to professors are issues. Teachers must examine if the learners and their parents have access to energy, technological equipment, and so on (Boer & Asino, 2022).

Despite the fact that many of these ICT literacy skill development programs are geared toward teachers, it cannot be assumed that even if teachers are proficient in technology literacy, they have the pedagogical skills to integrate technology into the classroom (Kacelo et al., 2019) or create online content if they have not been trained to do so (Boer,

2020). The assessment of e-readiness in influencing integration practices is a critical aspect in the quick spread of adoption in developing nations (Ndung's, Maweu, & Mwenja, 2017). The context of the teachers' online pedagogies experiences and decisions is defined by limited technical resources, inequalities in digital access among Namibian teachers, and maybe a lack of proper technology training.

2.4.5 Learner's barriers

The literature research found that, despite chances for all basic education institutions to rapidly enhance and maximize their ICT operations, many basic education institutions, particularly in Africa, face many problems (Ngepathimo & Nyambe, 2021). When emergency online education had to be adopted quickly during the COVID-19 pandemic, there were technological and quality-related issues (Andersson & Grönlund, 2009). It is possible to conclude that the provision of online pedagogy in basic education institutions around the world, particularly in Africa, faced technological challenges exacerbated by, among other things, bandwidth and 528 connectivity issues, a lack of technical support for learners, issues with technology infrastructure, technological difficulties, and a lack of technological experience.

2.4.5.1 Affordability of data

Internet access remains a barrier for most learners, particularly those who cannot afford to purchase data, cell phones, or laptop computers (Wilder, 2012). In addition to issues with access to equipment and a stable Internet connection, impediments linked to learning

circumstances, such as access to course study materials, were identified owing to a shortage of data. These findings are consistent with Tamrat and Teferra's (2020) assertion that learners in basic education institutions in Africa encounter barriers to accessing online pedagogy. Despite the rise of online pedagogy in schools, there have been few conversations about teachers' and learners' experiences with the Otjiwarongo circuit's online pedagogy, which is the topic of this study.

2.4.4 Guiding learner's learning

Another difficulty mentioned by some professors was the instantaneous interchange of discourse that would be seen in face-to-face classes, noting that the latency of online teaching might lead to misconceptions (Baran, 2011). Teachers said that because they couldn't see learners' emotions straight away during a live dialogue, they had to interpret learners' messages, which lacked sensory signals. The 116 teachers were challenged by the lack of these audio-visual aspects in determining when learners required their assistance and acting quickly to fulfil those requirements (Baran, 2011).

Teachers employed a variety of techniques to address the issue of immediacy. In several of the courses, for example, extra time was spent providing personalized comments to learners. They commonly utilized phone discussions to assist learners in overcoming their disenchantment with online education. While some lecturers liked to schedule call sessions when learners may phone them. When some of the teachers spotted a problem and wanted to remedy it right immediately, they phoned their learners. Teachers utilized phone conversations to interact with their learners on a more personal level and steer their

learning by providing feedback and directly addressing their queries (Baran, 2011). While personalized attention was provided to learners via phone and e-mail chats, teachers discovered that they needed to repeat the same answer or topic each time they answered to a student. Furthermore, there was no group synergy in one-on-one conversations. Teachers overcame this difficulty by using discussion boards or group e-mails (Robles & Braathen, 2002).

Teaching quality or instructional delivery is critical in online pedagogical education and cannot be compromised. In most situations, quality is determined by the attitude of Open and Distance Learning (ODL) institutions, teachers, and learners. According to Doug (2002), data from a 1999 study conducted by Elliot Inman and Michael Kerwin revealed that teachers had inconsistent perspectives of online education. They indicated that many were ready to teach again after having taught a course, but that the quality of the course delivered to online pedagogy learners was equivalent to or worse than that of face-to-face courses. It appears that the teachers believe that technology will improve the quality of the class on its own, however technology does not teach learners; effective teachers do (Palloff & Pratt, 2002). They emphasized that it is the design and delivery of online pedagogy that is important, not the technology. Most online pedagogy learning professors do not develop course materials using the most relevant technology. This has an impact on the quality of teaching and learning. Teachers should understand the demands of their learners while creating learning resources to provide the most beneficial influence on the entire online pedagogical experience. Online learners require skills and methodology that differ from those employed in traditional face-to-face settings (Bower & Hardy, 2004).

According to Murphrey (2010), the nature of online pedagogy delivery offers obstacles in terms of developing experiential encounters. According to Karatas and Simsek (2009)'s experiential study comparing face-to-face and online pedagogy delivery, limited time for online learners to state their thoughts and read and write on computers are possible reasons they score slightly lower than learners in the face-to-face learning mode.

2.4.5 Cost of online learning and teaching

The funding of online pedagogy is a significant aspect in the program's implementation in primary school. Researchers have demonstrated that the potential cost-efficiency of adopting online technologies in online education is still questionable, and that the concepts of cost and effectiveness are not as straightforward as they look (Bower & Hardy, 2004). According to Brower and Hardy (2004), a program can be efficient but not cost-effective if the outputs produced do not contribute to the program objectives and learners' experiences. Start-up capital, teacher and technician training, and the acquisition and maintenance of technical equipment are all areas that require finance. Acquiring multimedia equipment for online pedagogies can be expensive, especially if it needs to be imported and is developed for a different system (Ajadi et al., 2008: 68; Adu et al., 2013).

According to research, technology is a significant barrier to accessing online teaching. Aside from the cost of adopting technology, there is also the risk of inexperienced teachers underutilizing its potential. It is also critical to have connection to the Internet in order to obtain online teaching and information that will lead to enrolment in an educational

program. According to Ajadi et al. (2008), the cost of using the Internet in West Africa remains relatively expensive when compared to what is available in other industrialized nations. Furthermore, not every student has access to personal computers (PCs) at home, forcing them to rely on shared computers at local community or learning centres, which are sometimes expensive (Kawalilak et al. 2012). According to Lynch (2006), access to technology is becoming a critical problem in terms of equitable distribution among learners. In affluent nations, the portrayal is of more technologically advanced classrooms with favourable learner-to-computer ratios. Despite this positive assumption, research have indicated that learners' knowledge and comfort with technology in nations such as the United States and Australia are nevertheless restricted (Kennedy et al., 2006). Online pedagogies are not likely to be as effective in underdeveloped nations with challenges with unpredictable electrical and communication infrastructure (Hawkrige, Jaworski & McMahon, 1990: Lynch, 2006).

Technicians play an important role in the actual delivery of online education, however Doug (2002) pointed out that instructor levels are sometimes insufficient to maintain the system, making it costly for the few learners who have PCs to maintain them when a technical problem emerges. According to Kawalilak et al. (2012), the educational system does not make appropriate arrangements to suit the distinct learning styles of online teaching. They said that merely offering technology access to online pedagogical programs is insufficient to assure learner success, but that cultural sensitivity to online learners' learning styles and linguistic traditions is essential. Other difficulties encountered in the delivery of online pedagogy include widespread ignorance, low computer literacy

levels, energy-related issues, and teachers' and learners' attitudes toward the technology of online pedagogy environments (Doug, 2002; Ajadi et al., 2008; Kawalilak et al., 2012). Other research highlighted a lack of feedback, annoyance with technology, and fear as elements impacting the experiences of online pedagogy teachers and learners (Hawkrige, Jaworski, & McMahon, 1990; Lynch 2006).

Technical concerns, inadequate learning surroundings, solitude, and well-being and mental health issues are also problems linked with online education. Teachers are challenged in online pedagogy, where there is no face-to-face interaction, to transmit their intentions effectively and offer relevant feedback to assist learners accomplish the specified learning objectives (Kearns, 2012). The study investigates the difficulties that teachers and learners have while adopting online teaching and evaluation activities.

Despite the obvious benefits of online pedagogy in basic education learners' teaching and learning experiences, the system nevertheless confronts several problems in carrying out these procedures. According to Carver et al. (2007), despite the rapid expansion of experiences in online pedagogy, the difficulty is that it is hampered by classroom learning patterns. The concerns raised here are obstacles associated with distance and online teaching in general, which may also apply to the Otjiwarongo circuit.

2.4 Best practices in online pedagogies

A best practice, according to Luscinki (2018), is a method that has been deemed more effective than other alternatives due to the positive outcome produced. A best practice is a technique or methodology that has been demonstrated by experience and/or research to result in the desired outcome. There is extensive debate of best practices of online teaching" in the educational literature; nevertheless, what is labelled best practice in the pedagogical literature vary depending on disciplinary content, education level (bachelors, masters, and doctorate), curriculum, and instructional style. As a result, it is likely that there is no "best practice," in which case further study to uncover this non-existent instructional entity may divert our attention away from our capacity to actually enhance online pedagogy.

According to Serdyukoy (2015), we lack an appropriate theory or practice of pedagogy for the online classroom. Pedagogy encompasses nearly any method that improves the learning experience (including instructional tactics, engagement with technology, material delivery vehicles, and so on), and stresses the context and interactions of the teaching and learning dynamic. With all of these elements in place, teachers should consider the following:

1. If a "best practice" exists, why shouldn't it be applied across domains to guide pedagogy?
2. If the learning environment (i.e., the learning management system and/or related educational technology) influences an online teaching and learning "best practice" or pedagogy.

Online pedagogy is more than just placing classroom materials on the internet (Baran, 2011). The use of a distribution mechanism, such as the Internet or Blackboard, should not be seen as a defining aspect of educational practice. The technology should allow the online educator to use the best pedagogies for that particular course or topic (Learning & Situations, 2020). The online educator must use technology to improve the course material. Using the benefits of technology, the online educator can provide a high-quality educational learning experience. Effective online pedagogy, according to Gilbert et al. (2015), is learner-centred learning with active learning activities. Bill Pelze (2009), a psychology professor and Sloan Consortium Award recipient for Excellence in Online Teaching, offers three principles of effective online education:

- Principle 1: Allow the learners to do (most of) the work. The more engaged learners are with the topic, the more they will learn.
- Principle 2: The heart and soul of good asynchronous learning is interaction.
- Principle 3: Aim for social, cognitive, and instructional presence.

2.4.1. Effective teacher

In online pedagogy, learner communication is based on timely and clear interactions using a range of media such as email, chat, live class questions, and assessment and feedback giving (Easton, 2003). In the absence of more quick feedback techniques from teachers (for example, face-to-face consultation), evaluation and feedback supplied in online learning must be as clear and valuable as feasible to increase learners' comprehension (Roddy et al., 2017). Online teacher assistance includes excellent monitoring of learners'

progress, anticipating and resolving crucial learning questions, and establishing and maintaining rapport. Collectively, these abilities affect the success of online teachers and, as a result, the experience of learners. Because teachers are frequently the "face" of online pedagogy, effective online teachers have a direct and significant influence on the learner's experience. Previous research has identified teachers' presence as one of the most important aspects influencing learners' online performance (Roddy et al., 2017).

International Board of Standards for Training, Performance, and Instruction, institutional and research-based efforts to characterize the competencies required for effective online instruction, suggest a degree of overlap in the conceptualization of the core teacher competencies required for effective online instruction. The following are some of the most significant online teaching abilities identified by the aforementioned research (Baran, 2011):

- Communication skills;
- Technological competence;
- Provision of informative feedback;
- Administrative skills;
- Responsiveness;
- Monitoring learning;
- Providing learners’ support

Teachers who lack basic technological abilities risk being unable to fix technology-related difficulties during live classes, thereby limiting learners' access to learning resources. Communication abilities are also essential (Roddy et al., 2017). The established teacher competence frameworks in online pedagogy are shown in Table 2.1.

As can be seen in Table 2.1 shows the established teacher competency frameworks in online pedagogy that are most important for an online teacher.

Table 2.1 Established teacher competency frameworks in online pedagogies

Source	Key competencies
Dennis et al. (2004)	• Pedagogy • Communication • Discipline expertise • Technology
The International Board of Standards for Training, Performance, and Instruction (Beaudoin, 2015)	• Applying situational leadership • Managing change to enable innovation • Persevering through slow or incremental periods of change • Willingness to advance the online education agenda for the next generation of distance education professionals.
UNESCO ICT Competency Framework for teachers (UNESCO, 2011)	• Ability to teach technological literacy • Encouraging knowledge deepening • Knowledge creation **Intended outcomes** • Increased technological literacy • Ability to apply learning to real-world problems • Help learner • Handle challenges of being active citizens

2.4.1.1 Teachers must have technological skills

Because lessons are delivered through the Internet, online teachers must be tech-savvy and familiar with the newest online tools and technologies (Roddy et al., 2017). Using technology on a regular basis in their daily lives can assist teachers in staying current with the newest advances. Teachers may need to assist learners and parents in learning new tools, especially at the start of the school year. The most important piece of technology for online teachers to understand is their school's learning management system, or LMS. Throughout the year, schools employ a variety of online tools and education technology platforms to provide courses and interact with families. Many teachers also utilize data visualization and analysis technologies (such as spreadsheets and pivot tables) to track learners' progress and construct data-driven individualized learning plans. A competent instructor should not only understand the fundamentals, but also be willing to continue studying as technology advances (Roddy et al., 2017).

2.4.1.2 Let the learners do the work

Learning seeks to keep learners interested in the topic for as long as possible, thus you must provide opportunities for this to occur. In his "Principles of Effective Online Pedagogy" paper, Professor of Psychology Bill Pelz emphasized how the more time learners spend engaged in the topic, the more they will learn. To provide many opportunities for your learners to engage with the topic and with one another, invite them to identify and discuss resources, evaluate their papers, and host student-led discussions in online forums (Savery, 2010).

2.4.1.3 Visible

There is a high degree of two-way visibility in a face-to-face classroom when learners and teachers meet in the same place at the same time for a shared experience (Savery, 2010). While the learners sit and listen, the teacher faces the class and talks verbally. Learners can see and hear the instructor and generate judgements on his or her organization, vocal quality, speaking patterns, and so on (Robles & Braathen, 2002). Larger courses (30+ learners) make it harder for the instructor to get to know the learners as individuals, especially if the transmission form of instruction is utilized. There are few possibilities for one-on-one connection, and the silent instructor is often overlooked.

Printouts, a PowerPoint presentation, and maybe audio or video may be used to support verbal training. The dynamic is considerably different in online pedagogy, where learners and teachers meet for a shared learning experience in the same place (an online classroom) but at separate times (Robles & Braathen, 2002). Text has mostly overtaken spoken communication. For learners and teachers who are new with the online classroom, it may be a frightening place. Long periods of time might pass during which the instructor is gone from the classroom. If a learner sees that the teacher is not participating, the learner may conclude that the teacher is uninterested in teaching/learning. As a result, learners are more prone to take a passive role for themselves (Savery, 2010).

The idea of visibility is inextricably related with the concept of social presence (Robles & Braathen, 2002). Walther (1992) defines presence as the degree of awareness of another

person in an interaction and the consequent appreciation of an interpersonal relationship. Social presence is the degree of sensation, perception, and reaction to being connected to another intellectual being, and it influences online engagement in the context of an online learning environment (Robles & Braathen, 2002). Gunawardena (1995) contends that social presence is required to increase successful education in both traditional and technology-based classrooms, and that when social presence is low, interaction is likewise poor. A lack of social presence may result in a high level of irritation, a critical attitude toward the instructor's efficacy, and a lower level of affective learning (Robles & Braathen, 2002).

2.4.1.4 Organised

When teaching in an online context, it is critical that the teacher - and, by extension, all components of the course - be meticulously structured (Simon, 2000). Adults who select online pedagogy (right or erroneously) believe that it will be simpler to fit an online course into their already overburdened schedules. This is equally true for high school learners, whether they are taking AP classes or courses designed to augment or replace conventional face-to-face classroom teachers. Learners who choose an online format will want to know what is expected of them, how many assignments are assigned, and when assignments are due so that they may plan their time accordingly. The increasing responsibility put on the student to become a better time management and self-directed learner is an intriguing by-product of online teaching and learning (Smith, 2002).

Organization also implies foresight. Experienced classroom teachers - those who have taught a grade or subject area several times - prepare 'bulletproof' instructional materials for their learners, which means that directions for all assignments are clear, instructional materials have been thoroughly reviewed, and problems that arose during previous teaching sessions have been addressed (Savery, 2010). It is preferable to have extra supplies on hand than may be required. Given the possibility for time delays in posing questions, receiving responses, and wasting effort, online education requires a high level of clarity. Most learning management systems (LMS) provide a shared calendar function that allows teachers to set assignment due dates or online events such as a chat session with a guest speaker. If the online course is more linear in nature, this 'calendar' element can be substituted with a document that just lists the assignments and their due dates (Smith, 2002). Whatever approach is employed, learners must be able to get schedule information in ONE location and maintain that one source updated and correct (Savery, 2010).

2.4.1.5 Analytical

Teachers must manage online pedagogy and guarantee that learners complete assignments and achieve the desired learning outcomes. More essential, learners must get timely feedback on their performance and progress toward course objectives (Roddy et al., 2017). Being organized requires the preparation and dissemination of a well-defined evaluation plan and assessment activities. Being analytical includes collecting and assessing student data. Fortunately, most learning management systems provide methods and tools to assist assessment activities and offer data on each student to teachers. Some online testing forms

may or may not be acceptable depending on the course assessment strategy, subject domain, and targeted learning goals (Gilbert, 2015). Most LMS allow you to easily design an online quiz with multiple choice questions, true/false questions, or short answer replies. The issue here is with the type of data being tested. Because the online learner has access to all course resources (books, papers, websites) while taking the quiz, giving recall-type questions is worthless (Sc, 2016). Questions that assess a learner's capacity to synthesize material and apply it to a specific situation or circumstance might tell a lot about how effectively they are integrating concepts learned in class. Through learner login authentication, the LMS controls access to the quiz, and the instructor may decide when and for how long the quiz will be offered to the student. After completing the quiz, scores for binary-type questions (M/C and T/F) can be provided to the student and the teacher. The brief answer replies may need to be scored independently by the teacher. One type of evaluation is online exams. A teacher can also use the LMS to post assignments with explicit instructions, clearly defined evaluation rubrics, and reference resources to help learners. The LMS controls access to the quiz, like with a quiz, using learner login authentication, and the teacher may define when and for how long the assignment will be available to learners (Savery, 2010).

2.4.1.6 Leader-by-example

Everything a teacher does in the classroom and online should be an example of great teaching practices (Savery, 2010). Learners will take the lead from the instructor in terms of visibility, organization, and compassion. Early in the course, the teacher establishes the tone for the online learning community and maintains it until the last class. Lunenburg

(1998) discussed in detail six general ways for supporting learner performance through teacher-learner interactions.

1. Modelling - offering non-verbal behaviour for imitation,
2. Contingency Management - rewarding desired behaviours through praise/encouragement, or controlling undesirable behaviours through punishment in the form of reprimand/censure.
3. Feedback - responding to learner performance about a given standard or set of criteria including grades.
4. Instructing - direct teaching/telling and assigning of tasks. Often embedded in other means of assistance it occurs whenever the teacher assumes responsibility for assisting performance.
5. Questioning - assisting the learner as a prompt, to assess as in a test question, to stimulate thinking, or to provoke creations by the learners.
6. Cognitive Structuring - to help the learner organise 'raw' experience by providing a structure for

2.4.2 Facilitation and support of online pedagogy

Facilitation in online pedagogy may be defined as the practice of encouraging interaction or discourse among learners via the use of supporting multimedia technologies to increase online engagement and learning (Kearns, 2012). They went on to say that adopting 'facilitation' in online pedagogy is advantageous since it adds learner-centred methodologies to teaching and emphasizes learners' active participation in the learning process rather than merely being passive recipients of knowledge. According to Baran and

Correia (2009), facilitation is a shared obligation of the teachers and the learners. The traditional model, in which the instructor had sole control of the delivery environment, has given way to including learners as fellow learners, emphasizing the learners' autonomy as self-supported and self-directed managers of their time and the learning process. Facilitating online education allows learners to build meaning by connecting with one another and blending new information with past experiences (Rourke & Anderson, 2002). It is so critical to make the learning experience good for the learners.

Some scholars have identified the issues influencing online education. Bennett, Maton, and Kervin (2008) observed that, while learners are eager to use the internet as part of their education, it appears that they adopt a "seize and grab" strategy to obtain information. The abilities that enable learners to manage today's technology are not always ideal for academic learning. Asynchronous interaction in online pedagogy communication relies mostly on text-based information, which lacks the prompt facilitator response, both verbal and nonverbal (such as body language or gestures), that is essential in face-to-face learning. Similarly, when using a synchronous system, there may be less non-verbal feedback, hindering the establishment of mutual understanding (Rourke & Anderson, 2002).

The instructor engages learners by exposing them to activities that stimulate debate with and amongst learners and assisting them in navigating the online pedagogy. The teacher also demonstrates how to find regular online study resources; discusses and responds to requests for assistance at the appropriate moment; and supports a thorough approach to

learning (Baran & Correia, 2009; Downing et al., 2014). Some studies classify these functions as organizational, social, and intellectual/pedagogical (Paulsen, 1995; Berge, 1995). The facilitator's organizational function is to establish the agenda, purpose, and techniques for posting and communicating in the online conversation. Social facilitation entails enhancing online engagement via the use of well-crafted welcoming messages and feedback to develop social bonds with and among learners. The intellectual/pedagogical facilitation function is critical in pedagogical terms, therefore processes that stimulate learners' replies during interaction are required. The facilitator initiates the conversation, monitors the knowledge-building process, and leads interactions amongst online pedagogy learners (Kearns, 2012). Attempting to keep the group moving as much as possible will assist to produce engaging online discussions at all times. Every participant is accountable for maintaining a point of view and attitude that ensures freedom of speech in order to provide a secure atmosphere for everyone to voice their differing perspectives. The literature proposes the following effective practices for addressing issues connected with online pedagogy: Get the fundamentals right, such as Wi-Fi at school, hardware and software, straightforward navigation to instructional content, timetabling, and online session scheduling (Kearns, 2012). Robles and Braathen (2002) recommend that teachers and learners be trained and supported in the use of online platforms and pedagogies. The research investigates how these best practices are implemented in Namibian schools.

2.8 Chapter Summary

This chapter's literature study focuses on learner and teacher experiences with online pedagogy, which might potentially be applied to Namibia's Otjiwarongo circuit. Active

learning theory and experiential learning theory are used to interpret teachers' and learners' experiences with online teaching. The evaluations of the literature also offer an overview of the attempts to solve difficulties related to online pedagogy. Strategies, problems, and best practices of online education were discussed in the context of this study. Some historical context for online pedagogy was provided, and there was a debate on how online pedagogy is seen in Namibia. The next chapter discusses the research methods and design that informed this study.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3. 1 Introduction

This chapter presents the research design of this study, research methodology, population, a description of the sample and sampling techniques, and the research instruments utilised for collecting data. Furthermore, the context of the case study is presented to understand the rationale for selecting the schools that participated in this study. This is followed by an explanation of the data collection procedures, data analysis, and ethical procedures.

3.2 Research design

This study used a multiple case study research design and a qualitative research technique. A case study is a general term for the investigation of an individual, group, or phenomenon (Sturman, 2013). A case study is therefore a full account of an individual case and its analysis; that is, the characterization of the case and the events, as well as a description of the discovery process of these elements, which is the research process itself (Starman, 2013:27). This chapter goes into the research methodology and design that influenced this study. Mesec defines a case study in the context of social work, but it might equally be employed in the context of education: A case study is a description and analysis of an individual matter or case with the purpose of identifying variables, structures, forms, and orders of interaction between the participants in the situation (theoretical purpose), or, to assess work performance or progress in development (practical purpose) (Starman, 2013:28). He goes on to say that a single case study might fulfil both functions at the same time.

There are 30 schools in the Otjiwarongo circuit. The use of multiple case studies is important because it generates a large amount of data from multiple sources, which has the potential to give an in-depth understanding of the topic being studied.

Case studies provide some additional benefits. The connection to everyday life and the abundance of individual elements and detail in case studies are important for researchers from two perspectives. First, a case study is important for developing different perspectives on reality, including the recognition that human behaviour cannot be understood solely as an act driven by a rule or a theory. Second, case studies can help a researcher's professional growth by providing a specific, context-dependent experience that improves their research abilities (Starman, 2013).

The use of a qualitative technique in this research study gave a deeper grasp of the issue being investigated, both in depth and breadth. It also enabled the researcher to have access to the research participants' experiences and perspectives on teachers' and learners' encounters with online pedagogy in the Otjiwarongo circuit. According to McMillan and Schumacher (2001), qualitative research examines and analyses people's individual and collective social activities, beliefs, ideas, and perceptions, while the researcher interprets phenomena based on the meaning's individuals assign to them. The case study method used in this study enabled this by analysing individual responses and experiences.

3.3 Research methodology

This study used a qualitative research technique to investigate teachers' and learners' experiences with online pedagogy in the Otjiwarongo circuit. The qualitative research method was appropriate for this study since it allowed participants to discuss their experiences and issues with online teaching. This method of scientific inquiry allows researchers to investigate human experiences in personal and societal situations and acquire a better understanding of the elements that influence these experiences (Qualitative Research, 2015). The study's environment was two secondary schools in the Otjiwarongo circuit. The qualitative technique enabled the researcher to watch teachers and learners in their natural environments and classrooms (Maree, 2007). As a result, the study used qualitative research methodologies to collect qualitative data.

3.4 Study Area

The site selected for the study was Otjiwarongo circuit in Otjiwarongo district of Otjozondjupa region, Namibia. Otjiwarongo is the district capital of Otjiwarongo electoral constituency and also the capital of Otjiozondjupa and is situated in central-north in Namibia on the TransNamib railway as indicated in Figure 3.1.

Figure 3.1: The study area Otjiwarongo

The Otjiwarongo circuit (red on the map) has fourteen secondary schools, five combined schools, and nine primary schools. These schools are again divided into three clusters with each cluster consisting of seven to nine schools on average.

3.5 Population

In the context of research, the population is the group to which the researcher seeks to apply the findings (Mertens, 2015). The Otjiwarongo circuit has fourteen secondary schools, plus or minus 170 teachers, and 8445 learners (Education Management Information System, 2019).

The area of the study was the two selected schools, of which one is a secondary school from grade 8-12, one combined school from grade 1-9. The population comprised all Grade nine, ten, eleven, and twelve teachers and learners in the Otjiwarongo circuit.

3.6 Sample and sampling technique

A sample is a limited subset of a statistical population whose attributes are analyzed to learn more about the entire population (Lindquist, 1940). When it comes to individuals, it may be described as a group of survey respondents (people) chosen from a broader population. Purposive sampling, also known as judgment sampling, is the purposeful selection of a participant based on the traits the individual possesses (Etikan, 2016). It is a non-random approach that does not require underlying hypotheses or a predetermined number of participants. Simply said, the researcher determines what needs to be understood and then sets out to discover people who can and will supply the information through expertise or experience.

Two secondary schools in the vicinity of Otavi were chosen using a purposive sampling approach. Secondary school learners were chosen because they are more mature than elementary school learners and can relate their experiences. One grade ten, one grade eleven, and one grade twelve class were chosen from one secondary school. At the other school, one grade nine class was chosen, and three learners participated. There were three focus groups at one school and one focus group at the other, with each group consisting of three learners. The sample included twelve learners. Teachers at both schools assisted the researcher in selecting the learners who participated in the study. Two teachers were

chosen and interviewed for each grade level, especially those that use online teaching and evaluation to improve student learning. A total of eight teachers were chosen, and each was questioned individually. There was a total of 20 people in the sample.

3.7 Research instrument

In this study, the primary data gathering methods were interviews, focus group discussions (FGD), and observation. Semi-structured face-to-face interviews, focus group rules, and an observation checking list were utilized to collect data. These approaches were selected to cross-validate the results of each method. An interview, focus groups, and observations were used to obtain primary data from key informants.

The interview technique of data collection was used to acquire data from teachers. As a data collecting tool, an interview technique with semi-structured questions was utilized (see Appendix A). Focus group talks were used to acquire data from the learners. Focus group guides were utilized as a data collecting instrument with learners (see Appendix B). These data collection procedures were utilized because they allowed the researcher to connect directly with the participants, explore, and obtain a thorough grasp of the phenomena under investigation (Lindquist, 1940). In addition, direct observation of online classrooms was used as a triangulation method to evaluate data acquired through interviews and focus group discussions (see Appendix C). This research instrument was used due to the numerous benefits and advantages they provided for the investigation.

3.7.1 Semi-structured Interviews

Interviews were conducted to gather detailed information about participants' interactions with teachers and learners' experiences with online pedagogy. The interview is a crucial 84 data-collection strategy that comprises conversational interaction between the researcher and the researched (Maters, Fox& Hunn, 2002) to collect data relevant to the study objectives. Structured, semi-structured, and unstructured interviews are the three categories of interviews (Phellas et al., 2011, Dicicco-Bloom & Crabtree, 2006).

The information for the study was gathered through a semi-structured interview. Semi-structured interviews allow the researcher to organize the questions in a structured (closed) and unstructured (open-ended) fashion based on the themes utilized in the questionnaire formulation. In this experiment, the semi-structured interview was used since a structured interview produces quantitative data (Sc, 2016). Furthermore, the semi-structured interview is adaptable in that it allows for the exploration of unexpected replies from participants. The researcher can be adaptable in further examining the teachers' experiences and stories. The goal was to collect each teacher's experiences with online pedagogies from all interviewees. The advantage of conducting an interview in this study was that it allowed for the collection of constructive and particular comments and ideas on the subject of the study, as well as the collection of adequate thorough, complete, rich data and information with a small number of participants (Shneiderman & Plaisant, 2004). Interviews allowed us to go deeper and get more comprehensive information from participants.

A good connection was formed with the participants by providing an atmosphere in which they could discuss their experiences with distance and online mathematics learning (Douglas,1985). Teachers were permitted to narrate and deliver anecdotes about their experiences. Their comments were not planned or prepared ahead of time. Each semi-structured interview lasted around 40 minutes. The interview protocols for teachers were developed in order to gather information on techniques, obstacles, and present practices as suggested by the research questions provided in this study.

3.7.2 Focus group discussion

A focus group discussion brings individuals together with comparable backgrounds or experiences to discuss a specific topic of interest (Dti, 2016). It is a type of qualitative study in which participants are asked questions about their views, attitudes, beliefs, opinions, or ideas. Discussion participants in a focus group are allowed to speak with other group members; unlike other research methodologies, it fosters dialogues with other participants (Dti, 2016). It usually entails group interviews with a small group of 8 to 12 persons. It is moderated by an interviewer and consists of a loosely organized discussion of various subjects of interest.

Focus group talks provide other benefits, such as free and open conversation among respondents, which leads to the production of new ideas that may be highly valuable for decision-making. This dynamic enables greater results in terms of focus group information. Gestures and exciting actions, in addition to vocal expressions, can offer a

researcher with important information. Furthermore, because FGDs are organized and focused, but also expressive, they may provide meaningful information in a very short period of time. As a result, focus groups are an excellent approach to acquire detailed information on a community's ideas and opinions on a certain issue. The discussion's path is typically predetermined, and most moderators rely on an outline, or guide, to guarantee that all areas of interest are addressed. FGDs enable for the expression of many points of view. Participants tend to act as check and balances on one another, weeding out erroneous or excessive viewpoints.

3.7.3. Observation Guide

The classroom observation checklist was the final data collecting tool used. Checklist observation is the process of directly gathering data and information at a site by seeing people and surroundings (Learning, 2002). Furthermore, the Cambridge dictionary defines observation as "carefully watching the way something happens or someone does something, especially to learn more about it." Thus, observation is one of the approaches used to watch and learn about the activity and subject of study, both directly and indirectly.

The researcher used the observation guide (see Appendix C) to establish the extent to which participants used creative techniques of teaching by examining classroom displays in media and the teaching methods used. Observations were critical for learning about 'theory-in-use' and ideas that informants were hesitant to express explicitly in interviews and focus groups. Furthermore, observations enabled the researcher to document the normal behaviour of teachers and learners in their social contexts. The data acquired through observations was a good choice for this study since it might potentially provide insights into the participants' behaviour and motives (Learning, 2002).

3.8 Data collection procedures

Appointments were scheduled with chosen teachers at the designated schools to participate in interviews. Interviews were held after school hours and lasted around 40 minutes. The researcher recommended that professors examine their online classrooms at the end of the interview sessions. Focus group talks with learners were also scheduled after school hours, lasting around 40 minutes. The interviews were also voice-recorded to ensure correct data interpretation. The voice-recorded interviews were saved on the researcher's storage device to ensure their safety, and they will be erased four years after the study was completed.

3.9 Data analysis

Data analysis is the process of collecting, modeling, and analyzing data using various statistical and logical methods and technique (Maree, 2007). The interpretation of qualitative data is founded on an interpretive philosophy that examines the meaningful and symbolic content of qualitative data (Maree, 2007). The information gathered through interviews, focus group discussions, and observations was transcribed. Following that, the data were transcribed to text and critically analyzed, sorted, tagged, classified, and summarized to identify themes and patterns from the data. This was accomplished through the use of unique coding to indicate certain features in order to demonstrate meaning, comprehension, and knowledge. The data was coded by organizing it into relevant portions or themes, and it was then analyzed using a narrative technique. This narrative analysis was designed to give insight into how people make sense of occurrences (Riessman, 1993). According to Riessman (1993: 64), "individuals make most effective sense of their world by telling stories." Using this method, the fundamental anecdotes of personal 20 pedagogy and online pedagogy experiences during the COVID 19 epidemic were gathered. The voices of the teachers and kids were collected word for word and rewritten to convey the spirit of their experiences. The interview notes, which were retained in the form of a document, were combined with the narrative and content analyses to go through all of the developing topics in this research. The goal of coding, according to Creswell (2014), is to make sense of the data by utilizing various methodologies aimed to elicit meaning from participant replies. As is customary in qualitative investigations, data were analyzed in a descriptive, narrative format.

3.10 Research ethics

According to Durrheim and Wassenaar (2002), it is critical that all research investigations adhere to specific ethical criteria. These are the principles of autonomy, non-maleness, and beneficence. As a result, our study adhered to research ethical norms. The University of Namibia (UNAM) Research Ethics Committee provided ethical approval (see Appendix E). The researcher ensured that all individuals participated willingly in the study and that they were free to leave at any moment. Participants were all given a clear explanation of what the research study expected of them in order for them to make an educated decision to engage willingly in the research (see-Appendix G). The researcher caused no damage to the research participants or others, and all participants were guaranteed of the confidentiality of the information provided by the researcher. Finally, the collected data will be kept in a secure folder on the researcher's computer for two years before being completely removed.

3.10.1 Informed consent

The study outlined the goal of the research and emphasized that participants were allowed to withdraw from the study at any time. The participants were given a permission letter that detailed the research methodology. The participants were then invited to read the letter, ask clarifying questions, and sign the consent form (see Appendix H) if they agreed to participate in the study.

3.10.2 Protection from harm

The researcher ensured that the data recovered would be safely stored and destroyed after two years to protect the participants.

3.10.3 Privacy, confidentiality, and anonymity

In the research context, privacy is protected by ensuring the confidentiality of all information. The researcher obtained permission to carry out the research from the principals of the selected schools. The participants were informed of the nature of the study and provided formal consent to be included in the study. All the participants' information and responses shared during the study were kept private. The research results were presented anonymously to protect the participants' identities. The teachers were requested to permit the researcher to take audio recordings, which were necessary for answering the research questions.

3.11 Summary of the chapter

This study was conducted to explore teachers' and learners' experiences with online pedagogies of Otjiwarongo circuit, Otjiwarongo in Namibia. The methods used to generate and analyse the data were explained. The study, which was conducted using a qualitative research design, was discussed. The issues identified in the research questions were examined using this method. Data collection and analysis were done using qualitative research methods. This helped the researcher to provide a comprehensive interpretation of the research questions of this study. The methods employed in analysing

the qualitative data were discussed. A pilot study was conducted to test the instruments and prepare the researcher for the main research processes. Integrity was evaluated to ensure quality through credibility, transferability, dependability, and confirmability. Moreover, the ethical issues associated with this study were considered. This was done to protect the participants from any risks.

The next chapter discusses the analysis of the data gathered through interviews, focus group discussion, and observation. The chapter also presents a discussion of the findings of the study in line with the literature. The researcher begins by presenting the findings of the study based on the constructs of activity theory and the emerging themes. This is followed by a discussion on the challenges faced by teachers and learners during online pedagogy in Otjiwarongo circuit.

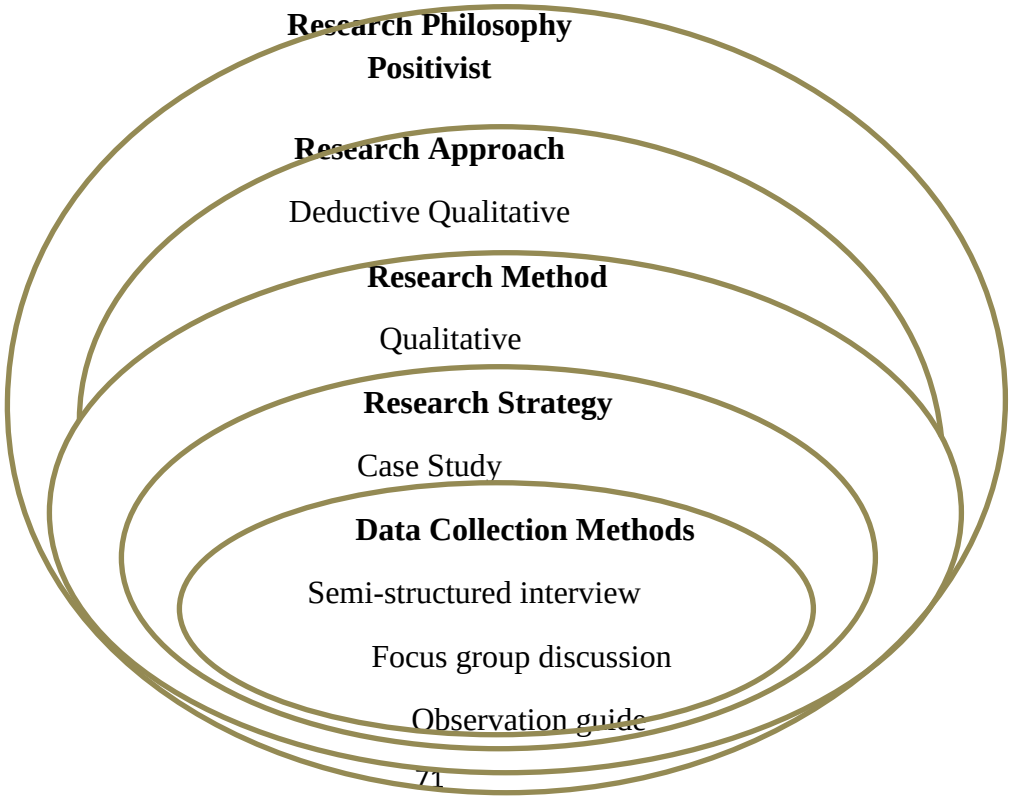

Figure 3.1 an Overview of the research methodology for the study

The steps summarised in Figure 3.1 helped the researcher to take a systematic approach to data collection. A systematic approach to data collection helped to collect rich data to ensure that the objectives of the study have been achieved.

CHAPTER 4: DATA ANALYSIS AND PRESENTATION

4.1 Introduction

The preceding chapter described the research methodology, design, and techniques used in this study. The obtained data is presented, discussed, analysed, and interpreted in this chapter. To comply with ethical regulations, all participants were given fictitious identities in order to maintain their identity.

This chapter will also include a review of the data gathered from interviews, focus group discussions, and observation. The interviews, focus group discussions, and observations were conducted to address the primary study topic. This research relied on data from twenty people. Participants in the interview are designated as Teacher 1, Teacher 2, Teacher 3, Teacher 4, Teacher 5 Teachers, and Teacher 6. Focus group 1, focus group 2, and focus group 3 are the names of the participants who took part in the focus group discussion. School 1 and School 2 are the names of the two schools. Every participant had a unique perspective on how teachers and learners in the Otjiwarongo circuit experienced online pedagogy and online pedagogy during the COVID 19 epidemic.

4.2 Biographical information of participants

Twenty learners from two separate schools were chosen for this study endeavour. Table 4.1 shows how codes were used to represent a school and the teachers and learners that

participated. For example, the letters S1 and S2 indicate distinct schools, whilst the letters F1, F2, and F3 represent focus groups of participating learners from various schools, and T1, T2, T3, T4, T5, and T6 represent specific teachers as participants. A summary of the biographical information of these participants is presented in Table 4.1.

Table 4.1: Biographical information of participants

	School 1	**School 2**
Gender	T1=Male	T1= Male
	T2=Female	T2=Male
	T3=Female	F1= 2 Females and 1 male
	T4=Male	
	T5=Female	
	T6= Male	
	F1=2 Male and 1 Female	
	F2= 2 Males and 1 Female	
	F3= 1 Male and 2 Female	

Grades	T1=Grade 10	T1=Grade 9
	T2=Grade 10	T2=Grade 9
	T3=Grade 11	F1=Grade 9
	T4=Grade 11	F2=Grade 9
	T5=Grade 12	F3=Grade 9
	T6=Grade 12	
	F1=Grade 10	
	F2=Grade 11	
	F2=Grade 12	

Table 4.1: Participants' biographical information from Schools 1 and 2. Six teachers from School 1 took part in the study, three males and three females, including two grade 10 teachers, two grade 11 teachers, and two grade 12 teachers. The research included two male teachers from School 2 who all taught grade 9. The research included 9 learners from School 1, 5 boys and 4 females. Each focus group consists of three learners from grade 10, three from grade 11, and three from grade 12. Three grade 9 learners from School 2 took part in the study, two of whom are female and one of whom is male.

Table 4.2: The process utilised to collect data

PROCESS	PARTICIPANTS		OBJECTIVE
	TEACHERS	LEARNERS	
Interviews One- on one	√	X	Interviews were used to obtain in-depth information relating to the participant's experiences with teachers and learners' experiences in online pedagogy.
Focus group discussion	X	√	The focus group discussion for learners was formulated to obtain information related to strategies, challenges, and current practices as indicated in the research questions posed in this study.

Observation guide	√	√	To observe how teachers, facilitate learners' learning using online pedagogy.

Table 4.2 shows the process used to utilised collect data which are; one on one interviews, focus group discussion, and observation guide. It also shows the participants that participated in the study which are teachers and learners and the objectives of the study.

4.3 Research questions

The data obtained from the interviews, focus group discussion, and observation is presented under the following research questions: The implementation of what online teaching and learning strategies were possible during the pandemic? What challenges in terms of skills and resources should be addressed to improve online the learning and teaching experience in Namibia? How can the current practice of online be improved?

Table 4.3: Research objectives and the research questions

Research objectives	**Research questions**
1. Examine the teacher and learners' experience with online pedagogies in Otjiwarongo circuit during and after the	Research question 1: The implementation of what online teaching and learning

implementation of the emergency teaching in 2020.	strategies were possible during the pandemic?
2. Identify teachers' and learners' challenges when using online pedagogy	Research question 2: What challenges in terms of skills and resources should be addressed to improve online the learning and teaching experience in Namibia?
3. Suggest how online pedagogy can be improved.	Research question 3: How can the current practice of online be improved?

Table show 4.5: Research questions and the generated themes for the study.

4.4 Description of the research areas

The research study was conducted at two schools in Otjiwarongo circuit, in Otavi and Grootfontein clusters. School 1 offers Grades 8-12, while school 2 offers Grades 1-9.

School 1- is a government school situated in Otavi, Grootfontein cluster, Otjiwarongo circuit, Otjozondjupa region. It was established in 1935. The school comprised a total of 17 classrooms from Grade 8 to Grade 12, with 12 male and 22 female teachers. The school had 657 learners attending.

School 2 - is a government school situated in Kombat, Otavi cluster, Otjiwarongo circuit, Otjozondjupa region. The school comprised a total of 14 classrooms from Grade 1 to Grade 9, with 5 male and 15 female teachers. The school had 532 learners attending.

4.5 Research question 1: The implementation of what online teaching and learning strategies were possible during the pandemic?

This study aims to explore teachers' and learners' experiences of pedagogy and online pedagogy in Otjiwarongo circuit during the COVID 19 pandemic. Teachers had different experiences, with some observing opposing shortages of technological tools. Issues relating to the experience of the experiences of online pedagogy in Otjiwarongo circuit from the teachers' and learners' experiences are discussed below. Although it is important to note these experiences here, they are discussed more broadly in the discussion and presented in a section of the thesis.

Online pedagogy has generally been conceptualised as teaching and learning that involves the use of information and communication technologies to enable access to learning; learning that is enabled electronically; learning that is empowered using multimedia technologies and/or any learning that is Internet-enabled or Web-based (Abaidoo, 2015; Thomas, 2014). Some of the participants' responses were as follows:

School 1

T4- "*I created my Edmodo classroom for my grade 12 learners, out of 60 learners, only 8 manage to sign up and only about 2 that were actively engaged.''*

T5- *"During COVID 19 lock down, our school management decide to use WhatsApp platform as a way to maintain communication between the teachers, learners and parents. Each registered class created a WhatsApp ground for their class, and share the notes to the group for all the subjects.*

T6- "*Participants further state that they use online pedagogy as it makes assessment practices more authentic and flexible and they can assess their peers' works.*''

School 2

T1- *"We do not use online pedagogy at our school during COVID 19 pandemic, we printed notes, worksheets and give to our learners."*

T2- *"Each subject teacher was instructed to make copies of the notes and activities for his/ her subject, and the principal had to announce through the radio when the parents or guardians had to collect the notes and worksheet for the learners."*

Most of the participants from all the schools (Schools- 1, and 2) indicated schools uses social media platform such as WhatsApp as form of maintaining communication between teachers, parents, learners and educational stakeholders. They also made use of printed notes, worksheet and activities to keep the learners busy during lockdown.

School 1

T1 – *"I need more skills and knowledge on the uses of online pedagogy. As a chemistry teacher, it is not easy to get information that requires scientific knowledge".*

T2 – *"My experience online pedagogy during the COVID 19 is quite challenging because as a teacher cannot physically engage with my learners, so I cannot gauge the learner's body language to see whether they understand or not.''*

T3- ''*Whenever I am setting zoom video to conduct classes online during COVID 19 pandemic, only a few learners will join, and I experience abundant distraction and lack of discipline among the learners."*

T4- ''*I experience Digital literacy and technical issues when using pedagogy and online pedagogy during the lock down. The infrastructural problem makes it difficult for online pedagogy. Since there is no physical interaction with the learners, there is a lack of motivation in learners."*

T5 - *"From my side online pedagogy is helpful to both learners and teachers most especially during the time of the COVID 19 pandemic.'' the online pedagogy I make use of helped me a lot and it is user friendly.*

T6- "*My experience is a new challenge during COVID 19 pandemic for at times after proper preparations the school will be offline due to the natural hazards such as rain and lessons for the day or weeks are affected negatively.''*

F1- *"my experience with the clever touch is good, it's easy to learn and friendly to use.'' My experience was that online pedagogy are the fastest way to getting research information." "I experience that the network sometimes is not working well.''*

F2 *- "During COVID 19 lockdown, there were so many challenges, I do not have a smartphone, nor data, hence I am behind in my academics. I learn better during physical interactions with the teacher, the online pedagogy it hard because I have to adjust to a new style of learning.''*

"My experience was great because I always learn in my comfort zone and I always have flexibility.''

"I feel that I have satisfactory experience in promoting my learning using online pedagogy.''

F3- *"During COVID 19 lockdown I had a great and overwhelming experience. Great in the sense that I could learn or watch YouTube lecture videos in any setting and at any time. Overwhelming, because there wasn't human-to-human interaction, so interpreting the information was kind of difficult.''*

"I got to experience creating new documents, using a word processing program, navigating the internet, and downloading software,''

''A good experience I must say." "My first encounter with online pedagogy was in 2021 when COVID 19 forced a national lockdown. At first, I was struggling to cope with online classes, but as time went on, I adapted, and initially, I liked the idea of online teaching and learning.''

School 2

T1- "*The mist challenge we face at our school is lack of computer and technological skills, loneliness when teachers and learners feel isolated from each other, Internet connectivity and availability, and poor learner attendance.*

T2- *"I attempted to create a Google classroom, and asked my grade nine learners to sign up, it was unsuccessful since no one sign up.''*

F1 – *"We do not use pedagogy and online pedagogy during the pandemic at our school, we do not have smartphones, laptops, or data at home, when our teacher informed us that we are going to start with online learning, we did not even understand what she was talking about, its only after few weeks that the principal announced in the radio that we must collect notes and worksheet at school. Some of the worksheet and activities that we gave to our learners were returned in a sorry state, being folded, contain water and oil stain and some never return.*

It appears from the data that teachers and learners in the Otjiwarongo Circuit's had diverse and unique experiences of pedagogy and online pedagogy during the COVID 19 pandemic, some have good, bad, and satisfactory experiences.

4.6 Research question 2: What challenges in terms of skills and resources should be addressed to improve online the learning and teaching experience in Namibia?

The second research question was to explore the challenges in terms of skills and resources faced by teachers and learners in the Otjiwarongo Circuit's on pedagogy and online pedagogy during COVID 19 pandemic and. The researcher asked the participants about the challenges faced by teachers and learners to which they gave variable but very important responses.

4.6.1 The isolated learners

External learners may encounter participation hurdles in collaborative learning activities such as group work, group presentations, and group evaluations (Davidson, 2015; Graham & Misanchuk, 2004; Jaques & Salmon, 2007). Some of the issues encountered are personal in nature, such as anxiety associated with using technology; being out of one's comfort zone; (perceived) inequity in assessment, particularly in "group" assignments; and (perceived) inability or difficulty in peer interaction, particularly in presentations. Regarding the learner's isolation, the participants had the following to say.

School 1

T1- *"During the COVID 19 pandemic we printed worksheets and activities for the learners, learners feel as isolated as there is lack of supervision as it is done at home.''*

F1- *"I do not face any challenge when am isolated.''*

F2- *"COVID 19 pandemic put us in to isolation. I have a problem with navigating the online pedagogy. I feel more isolated, especially where I don't understate; I wish my teacher can explain to me more in detail."*

F3- *"Lack of face-to-face engagement with my teachers and fellow learners made me so isolated.''*

School 2

T2 – "*Learners feel more isolated during the pandemic and lack motivation due to online pedagogy,''*

While online pedagogy provides opportunities for the ways education is delivered and accessed by learners, assessment practices are often limited in the variety and modes in which they are allocated in the online pedagogy (Williams, Cameron, & Morgan, 2012).

4.6.2 Designing and structuring the online pedagogy

According to Baran (2011), teachers spend a significant amount of effort designing online courses. Depending on whether the course was being taught for the first time, replicated from a face-to-face course, or duplicated from a previously taught online course, the course design methods varied. All teachers recognized the effort spent on online pedagogy preparation. Baran (2011) reported that the following replies were given by the participants:

School 1

P1- *"Designing and structuring of pedagogy and online pedagogy during the COVID 19 pandemic was a challenge and time-consuming. I also did know about how to design online pedagogy such as Edmodo."*

P3- *As a newly graduate from University of Namibia with my little knowledge on Educational technology, I asked my colleagues if they can participate in a one day workshop to show them how to create any Learning management system such as Edmodo, loop, Google classroom, as a directive from MoEAC, but the training session did not happen, as some teachers did not want to meet provided that safety precaution such as distance will be applied, they feared for their lives.*

4.6.3 Technological barrier

The primary technological hurdles are due to a lack of Internet access and smart gadgets. This issue may exacerbate disparities by limiting learners' and teachers' access to necessary technologies. Indeed, not all learners and teachers have access to the essential tools, such as a fast Internet connection and a powerful computer, to benefit from online education (Gilbert et al., 2015).

4.6.3.1 Availability of Internet connection

The Internet connection is at the heart of online education. Because Internet access is required, smart televisions, cell phones, mobile technology, electronic learning platforms, web-based technology, and video conferencing are among the technologies that may be used by online pedagogy (Sife, Lwoga, & Sanga, 2007). According to Zakaria and Daud (2013), Internet access and computers are vital in education since they allow for greater flexibility in studying and improve the learner's learning experiences. The Internet connection is at the heart of online education. The Internet connection is at the heart of online education. Because Internet access is required, smart televisions, cell phones, mobile technology, electronic learning platforms, web-based technology, and video conferencing are among the technologies that may be used by online pedagogy (Sife, Lwoga, & Sanga, 2007). Here are some of the participants' responses:

School 1

T1- *"We do not have Internet connectivity at our school for pedagogies and online pedagogy to take place at our schools."*

F1- "*I have experienced challenges such as connectivity issues, the lack of infrastructure, and the cost of data during COVID 19 pandemic."*

School 2

T1- *"We did not use pedagogy and online pedagogy at our school even if it is introduced, it will negatively affect our teaching and learning. We need to teach and finish our*

syllabus, if they introduce online pedagogy, when are you going to finish teaching? I don't think it will work."

F2- *"Internet connectivity and technical tools not sufficient to everyone, only one smart board is being used by all teachers and learners at school. Since we went in the lockdown during the COVID 19 pandemic, even though our teachers created some WhatsApp group for us, some of us did not join because we do not have smartphone. One of my friend joined with her father's phone, but she was not actively engaged, since her father is always at work.*

4.6.4 Pedagogical barrier

According to Mohamedi (2020), the process of transitioning to the use of information and communications technology (ICT) to provide programs online for teachers and learners has shown the African continent's digital divide. This progress has also revealed systemic imbalances that must be addressed in order to provide fair access to high-quality online basic education. The following are the replies of participants who recognized some pedagogical berries:

4.6.4.1 The knowledge of teachers in online delivery and the uses of technology

Teachers' Educational Context in Namibia Namibian schools must have at least ICT development level 2 according to the Tech/Na! Implementation Plan. All teachers would be required to complete ICT Literacy training or Foundation level ICT Literacy, and the

school would be required to schedule ICT training for learners at least one session per week in order to enable online pedagogy. The context of the teachers' online pedagogy experiences and decisions is defined by limited technical resources, disparity in digital access among Namibian teachers, and maybe a lack of proper technology training. The following replies were given by the participants:

School 1

T1- "*I do not have sufficient knowledge on how to use online pedagogy and have experienced challenges such as connectivity issues, the lack of infrastructure, and the cost of data the during COVID 19 pandemic"*

T2- *"online pedagogy came with so many challenges such as digital literacy and technical issue. Both teachers and learners lack knowledge of the uses of online pedagogy. My technological skill is limited, only have basic computer skills.''*

T3*- "I do not have skills.''*

T4- *"Wi-Fi does not reach every part of the school, so sometimes it is difficult to access the information.*''

T5- *"poor network coverage, unstable network and lack of computer to accommodate all the learner."*

T6- *''Wi-Fi connections, limited tools (computers), and overcrowding are many technological challenges. Other challenges include insufficient training in online teaching*

and Wi-Fi limitation as it does not cover the whole school, only at the administration building.''

School 2

T1- *"there are many challenges we face when it comes to online pedagogy, as a teacher I do not know how to design online pedagogy. No support from the school management, regional office and Ministry of Education Arts and Culture, and all the educational stakeholders.''*

T2- *"I do not have any basic computer knowledge.''*

According to the participants, the challenges identified by teachers regarding the use of modern technology in pedagogy and online pedagogy during the COVID 19 pandemic are the lack of skills in using them, lack of Internet connectivity, and technological tools. The teachers adopt whichever technological tools they have to assist in online pedagogy.

4.6.5 Learners barrier

It may be concluded that the provision of online pedagogy in basic education institutions all over the world, particularly in Africa during the COVID 19 pandemic was faced with technological challenges which were compounded by, among others, bandwidth and connectivity problems, lack of technical support to learner's problems associated with

technology infrastructure, technological difficulties, and a lack of technological experience.

4.6.5.1 Affordability of data

Internet access remains a barrier for most learners, particularly those who cannot afford to purchase data, cell phones, or laptop computers (Wilder, 2012). In addition to issues with access to equipment and a stable Internet connection, impediments linked to learning circumstances, such as access to course study materials, were identified owing to a shortage of data. These findings are consistent with Tamrat and Teferra's (2020) assertion that learners in basic education institutions in Africa encounter barriers to accessing online pedagogy.

School 1

F1 *– "Data are very expensive and the Wi-Fi is not too strong enough to accommodate all of us."*

F2- *"There are so many challenges because I do not have a smartphone nor have data, the smart board we have at school is always used by other learners, especially the grade 12. Another learner explains that: Most of the challenges learners face are technical knowledge, connectivity issues, computer literacy, and not receiving timely feedback.''*

F3- *''the most all challenge is the lack of tools or technological devices, we do not have enough tools at our school to make online pedagogy more successful. Both teachers and learners do not have enough knowledge on computer literacy, and there is poor connectivity at the school premises.''*

"I don't face many challenges but the one challenge that I encounter at a time is an internet connection. During school hours, it's much better because I use the smart board for my assignment and studying purposes, but when at home I do not have an internet connection at all. Even though we have a smart board at school, we have only one therefore wound often clash with using it with other learners and teachers. After the COVID 19 lock down the situation got worse, since we were at home no online pedagogy took place."

School 2

F1-*The are so many technical challenges such as the poor connection to the internet, not enough computers, and most of the time during rainy season electricity goes off."*

Technological tools, connectivity issues, and computer literacy knowledge are most of the technology challenges most learners are facing. Some learners indicated that they are not exposed to a variety of technologies. According to the researchers' observations, Schools are not equipped with technological tools to make online pedagogy happen. The researcher summarised the technological tools that were observed at the selected schools.

4.6.6 Guiding learners learning

Another problem mentioned by some professors and learners was the quick interchange of discourse that would be seen in face-to-face classes, with the delay potentially causing misunderstandings (Baran, 2011). Teachers said that because they couldn't see learners' emotions straight away during a live dialogue, they had to interpret learners' messages, which lacked sensory signals. The 116 teachers were challenged by the lack of these audio-visual aspects in determining when learners required their assistance and responding quickly to meet those requirements (Baran, 2011). Here are some of the responses from the participants:

School 1

P2- *"During the COVID 19 pandemic it was challenging to guide learners' learning through online pedagogy, because as a teacher you cannot gauge the learner's body language to see whether you understand or not."*

P3- *"Learners do not get proper guidance.''*

P4- *"No proper guidance since there is no physical interaction between the teacher and learners."*

F1- *"we do not get proper guidance most of the time from our teachers when using pedagogy and online pedagogy during the COVID 19 pandemic, and some of the time instructions are not clear."*

School 2

P1- *"It is difficult to guide learners because as teachers we do not use pedagogy and online pedagogy during the COVID 19 pandemic, we instead printed notes, activities and worksheet for our learners."*

Despite the obvious benefits of online pedagogy in basic education learners' teaching and learning experiences, the system nevertheless confronts several problems in carrying out these procedures. Participants contended that, despite the rapid increase of experiences in online pedagogy, the difficulty is that it is hampered by classroom learning patterns. According to participant responses, even though some teachers and learners put more effort into the use of online pedagogy, teachers and learners in the Otjiwarongo circuit are affected by a lack of technological knowledge, network connectivity, and ICT tools.

4.7 Research question 3: How can the current practice of online be improved?

A best practice, according to Luscinki (2018), is "a method that has been deemed more effective than other alternatives due to the positive outcome produced." "A best practice is a technique or methodology that has been demonstrated by experience and/or research to result in the desired outcome "Luscinki, 2018:22.There is considerable discussion in pedagogy and online pedagogy of "best practices of online teaching;" however, what is coined "best practice" in the pedagogical literature differs as a function of disciplinary content, an education level (bachelors, masters, and doctoral), curriculum, and instructional style. As a result, it is likely that there is no "best practice," in which case

further study to uncover this non-existent instructional entity may divert our attention away from our capacity to actually enhance online pedagogy.

4.7.1. Effective teacher

In online pedagogy, learner communication is based on timely and clear interactions using a range of media such as email, chat, live class questions, and assessment and feedback giving (Easton, 2003). In the absence of more quick feedback techniques from teachers (for example, face-to-face consultation), evaluation and feedback supplied in online learning must be as clear and valuable as feasible to increase learners' comprehension (Roddy et al., 2017).

School 1

P1- *"I am not 100 percent effective online teacher, because I do not have enough technological knowledge.'' Even though I try here and there my effectiveness is not 100 percent.*

P4- "*I am not an effective teacher because I am unable to resolve technology-related problems during the live class, without adequate technological skills, which may impact learner's access to learning materials."*

F2- *"some of our teachers are not effective in online pedagogy, they are struggling to set up the Edmodo test which is online." Some teachers are effective because they manage to set up a zoom classroom.*

School 2

P1- "When it comes to online pedagogies, am not effective.''

F3- "We do not know if our teachers are effective or not, because they do not use online pedagogy."

4.7.2. Facilitation, provision, and support of online pedagogy

Facilitation in online pedagogy may be defined as the practice of encouraging interaction or discourse among learners via the use of supporting multimedia technologies to increase online engagement and learning (Kearns, 2012). Participants indicated that for a better experience, teachers and learners listed Internet access as the most important problem that their schools must solve. They went on to say that adopting 'facilitation' in online pedagogy is advantageous since it adds learner-centred methodologies to teaching and emphasizes learners' active participation in the learning process rather than merely being passive recipients of knowledge.

School 1

T1*-all that I can say is that the school should improve Internet connectivity and other technologies that we need to learn in this mode and make them available for the teachers and learners".*

F1*- "the government should work really on the Internet method so that we can have access online at all times for us to have better experiences of online pedagogy.''*

This study noted from participants' responses that, for the best practices, both teachers and learners must be provided with enough computers, and Wi-Fi., this will assist them in

the effective uses of online pedagogy. The opinions expressed by most teachers and learners were similar. Most of them commented that to improve online pedagogies, efficient and affordable Internet was needed. The study finds out how these best practices are used in participating in Namibian.

4.8 Summary

This chapter has presented an account of the teachers' and learners' experiences with pedagogy and online pedagogy during the COVID 19 epidemic in Namibia. The research questions that were used to create the findings for qualitative analysis were comparable. Overall, the findings demonstrated the significance of technology, instructional design, and evaluation. There were also significant disparities in the design of course materials, manner of evaluation, collaborative activities, and technology. The quantitative data were interpreted using semi-structured interviews, focus group discussions, and an observation checklist. The next chapter provides an in-depth assessment of the findings and their implications for teachers and learners in the Otjiwarongo Circuit's experience of pedagogy and online pedagogy during the COVID 19 epidemic for improvement.

CHAPTER 5: DISCUSSION AND INTERPRETATION OF THE FINDINGS, CONCLUTION AND RECOMMEDATION

5.1 Introduction

The acquired data were presented, analysed, and interpreted in the preceding chapter. The main points raised were how to implement online learning and teaching in a resource-limited environment so that both teachers and learners have a positive experience, what online teaching and learning strategies were possible during the pandemic, the challenges in terms of skills and resources that should be addressed to improve online learning and experience in Namibia, and the best current practices of online pedagogies. This chapter presents a summary of the findings on each of the research topics given, followed by the study's suggestion. Following a review of the study's limitations and implications for future research, suggestions are offered based on the findings. In this Chapter, the findings reported in Chapter 4 are discussed and interpreted.

5.2 Link between the findings and the theoretical framework

John Dewey's Active Learning Theory and Experiential Learning Theory were used in this study. According to the active learning hypothesis, in order to learn better, learners should be actively engaged or interested in the learning process. Interactivity, gamification, quizzes, and workouts are all online features that correspond to the active learning theory (Richey, Klein, & Tracey, 2011). In schools, this is often done in response

to learning opportunities designed by their instructor. Experiential learning theory provides a fundamentally different perspective on the learning process than behavioural theories of learning based on empirical epistemology or the more implicit theories of learning that underpin traditional educational methods, which are mostly based on a rational, idealist epistemology (Kolb, 2005). This specific study explored teachers' and learners' experiences with online pedagogy in Otjiwarongo circuit.

The data collected indicated that, while some teachers and learners put more effort into the use of pedagogy and online pedagogy during the COVID 19 pandemic, teachers and learners in the Otjiwarongo Circuit were affected by a lack of technological knowledge, network connectivity, and ICT tools and learning environment. This is consistent with Kolb (2005), who stated that the growing demand for online pedagogy has necessitated an urgent assessment of the impact and effectiveness of teachers' and learners' experiences with online pedagogy of instructional delivery, assessment, and support services using modern technology. To assess the quality of the experience and, ultimately, the outcomes of learners in online pedagogy. In his second construction, Kolb (2005) claimed that learning styles, learning modes, and learning environments must all be considered. Kolb's four primary learning styles, according to Richmond and Cummings (2015), are assimilative, accommodative, divergent, and convergent. These theoretical frameworks were used to guide the study because they place such a strong focus on the efficient use of online teaching and the elements that influence its efficacy.

5.3 Discussion of the findings

The study's goal was to investigate teachers' and learners' experiences with pedagogy and online pedagogy in two selected schools during the COVID 19 pandemic. The research looked into teachers' and learners' experiences with online pedagogy. The study used a descriptive case study methodology and targeted two schools from two distinct clusters in one circuit, with a population of plus or minus 55 teachers and plus or minus 989 learners, of which a sample of eight teachers and twelve learners were chosen for the study. In this study, the primary data gathering methods were interviews, focus group discussions, and observation. Semi-structured face-to-face interviews, focus group guidelines, and observation checking lists were utilized to collect data.

These approaches were selected to cross-validate the results of each method. The interview, Focus Group Discussions, and observations checking the list were used to acquire primary data from key informants. The data obtained were coded and then categorized into themes based on the replies of the participants to the interview questions and focus group discussion. The obtained data was presented by the researcher in order to provide a clear meaning and interpretation of the data. The findings are presented in more detail below, organized by subject.

5.3.1 The implementation of what online teaching and learning strategies were possible during the pandemic?

The purpose of this study is to investigate teachers' and learners' experiences with pedagogy and online pedagogy in two selected schools during the COVID 19 pandemic. The results show that the majority of the participants had diverse experiences; some teachers and learners utilize online pedagogy and used it throughout the COVID 19 epidemic, while others never used it. Some participants stated that they use online pedagogy to improve the learning of their learners. This is consistent with Baran (2011), who stated that online pedagogy allows learners to interact in learning environments by engaging in thoughtfully designed hands-on learning activities, collaborating with peers at various levels, participating in online learning communities, and creating learning environments that will help them develop lifelong learning skills. However, it has been argued that online pedagogy differs from conventional classroom pedagogies (Kirwan & Roumell, n.d.).

Based on this survey, it is obvious that learners are constantly actively involved in online pedagogy, particularly when working with their peers, which allows them to develop their learning abilities. Despite the fact that Ali et al (2021) stated that online pedagogy allows for remote interaction between learners and teachers, when the researcher spoke with teachers and learners at one of the schools, they stated that they never used online pedagogy and made physical copies of learners' notes, worksheets, and activities during the COVID 19 pandemic. This is reinforced by Boer and Asino (2022), who highlighted

that during the COVID 19 epidemic, some Namibian schools were successful in employing both WhatsApp and printed learning materials despite a lack of printing paper.

One participant says that online pedagogy provides all learners with an equal opportunity to answer the questions. Reasoning from these replies demonstrates that, unlike in a face-to-face classroom, all learners have the opportunity to engage and answer the questions in online education. This is reinforced by Kearns (2012), who claims that online pedagogies give teachers a greater opportunity to assess overall learner knowledge than traditional classrooms since when the instructor asks a question, only one learner may respond. Robles and Braathen (200) also emphasized that when a question is asked online, each learner should react before proceeding with the course.

Participants also indicate that they utilize online pedagogy because it makes assessment methods more real and flexible, and it allows them to examine the work of their peers. Learning analytics, according to Roble and Braathen (2002), make monitoring of learning displayed through learners' digital actions easier and more scalable. Such analytical input to learners can be ongoing throughout a course, resulting in early diagnoses that allow learners to focus on areas of weakness prior to a final exam. They recommended teachers to employ analytics in the future to analyse the quality and usefulness of course resources as well as track learners' involvement, offering opportunities for intervention if necessary. According to Kearns (2012), peer evaluation entails learners reviewing one other's work, offering meaningful criticism that may be utilized in document modification, and gaining a deeper grasp of difficulties. It indicates that online teaching facilitates and saves time for both professors and learners. One of the schools, according to the researcher, does not

have any ICT instruments enabling online teaching to take place. while the researcher asks the participant what techniques they use to improve learning while utilizing online pedagogy, some teachers have never utilized online pedagogy at their school, making it difficult to identify online pedagogy tactics used by teachers and learners in the Otjiwarongo circuit.

5.3.2 Challenges in terms of skills and resources should be addressed to improve online the learning and teaching experience in Namibia

The second goal was to look at the difficulties that teachers and learners had when using pedagogy and online pedagogy during the COVID 19 epidemic. The two most essential aspects influencing online pedagogy are technological knowledge and tools (Kampov, 2010). According to the study's conclusions, the following were among the numerous obstacles experienced by teachers and learners while using online pedagogy: Lack of resources, such as computers, laptops, cell phones, and Wi-Fi access. According to the researcher's observations, schools lack the necessary instruments for online education. To avoid agitation and opposition among teachers and learners, it is critical to offer appropriate resources and training, support from the Ministry of Education Arts and Culture, and describe pedagogy with clear goals and expectations (Ministry of Education, 2005).

5.3.2.1 The isolated learners

According to (Davidson, 2015; Graham & Misanchuk, 2004; Jaques & Salmon, 2007), external learners may encounter impediments to participation in collaborative learning activities such as group work, group presentations, and group evaluations. Some of the issues encountered are personal in nature, such as anxiety associated with using technology; being out of one's comfort zone; (perceived) inequity in assessment, particularly in "group" assignments; and (perceived) inability or difficulty in peer interaction, particularly in presentations. Gillett-Swan (2017) agreed that online pedagogy can isolate learners, who may also have varying levels of competency and proficiency with various forms of IT and are thus somewhat on their own when it comes to the online learning environment via different Learning Management Systems (LMS). According to the teachers who took part, learners feel more alienated and lack motivation as a result of online pedagogy, and there is a lack of monitoring because it is done at home. Most learners feel excluded from learning because they are isolated. When the researcher spoke with the participants, they stated that they have difficulty navigating the online pedagogy and that they feel more isolated, especially when they do not understate; they want their instructor could explain to them more in detail. According to the participants, one of the obstacles that teachers and learners experience while implementing online pedagogy in the Otjiwarongo Circuit is learner isolation.

Though the literature review clearly stated that one of the challenges of online pedagogy is learner isolation, according to the research findings, online pedagogy does not appear

to be common practice in basic education, which may be due to some of the difficulties experienced by both learners and teachers in using an online delivery platform. This is consistent with (Jaques & Salmon, 2007), who indicated that sharing 'good practice' and 'lessons learned' among members of the basic education community can assist teachers focus on efficient applications of technology while avoiding excessive duplication of work and expenditure.

5.3.2.2 Designing and structuring the online pedagogies

According to the findings, several of the study's participants claimed that planning and structuring online pedagogy is difficult and time-consuming. Some participants expressed concern that they do not understand how to build online pedagogy such as Edmodo. According to Baran (2011), professors spend a significant amount of effort designing online courses. In the future, he advised all teachers to recognize the effort spent preparing for online pedagogies. When the researcher questioned the teachers how they organized and designed their online pedagogy, one instructor from one school replied that he uses his mobile phone to set up zoom sessions with his learners, but not all of the learners were able to sign up and obtain access to zoom. Teachers, according to the researcher, lack the ability to plan and structure online education. Most of them consider that using online pedagogy is a waste of time because they must complete the curriculum in a short period of time.

5.3.2.3 Technological barrier

Gilbert (2015) attributes technological issues to a lack of Internet access and smart gadgets. This issue may exacerbate disparities by limiting learners' and teachers' access to necessary technologies. Indeed, not all learners have access to the equipment required to benefit from online education, such as a fast Internet connection and a powerful computer. Internet technology and computers, according to Zakaria and Daud (2013), are significant and most demanding in online pedagogical education because they provide flexibility in learning and increase the learner's learning experiences.

5.3.2.3.1Internet connectivity and ICT resources

According to the research, teachers claimed that online education presented several obstacles, including digital literacy and internet connectivity tissue. Learners agreed with the teachers' assertion that the majority of issues stem from a lack of tools or technical equipment; they do not have enough tools at their school, and there is insufficient connectivity on school grounds. According to Zakaria and Daud (2013), Internet access and computers are vital in education since they allow for flexibility in learning and improve the learner's learning experiences. They went on to say that one of the difficulties noted by teachers in using current technology in online pedagogies is a lack of Internet access. According to the literature, a lack of ICT resources and Internet access makes it difficult for teachers to teach from home and for learners to continue studying while at home. According to Gervasius (2020), in order for online education to become a viable option in a nation like Namibia, there is an urgent need to supply teachers with portable

ICT devices that they may utilize to educate without being constrained by location. According to Karipi (2019), online education is nearly difficult for many poor nations, including Namibia, as long as teachers and learners lack ICT resources, especially Internet connection. This indicates that online pedagogies would be practical for the Namibian education system only if teachers and learners have continual access to the internet connectivity.

According to the researcher's findings, the schools surveyed had Internet connectivity exclusively at the administrative building. Learners at these schools typically utilize the library for homework, however the library does not offer Wi-Fi. The researcher discovered that in order to properly utilize or even discuss online pedagogies, one needs have access to the Internet and a set of ICT equipment. There is nothing teachers and learners can do without such tools. Simata (2015) supports this by stating that teachers and learners are all exposed to ICTs on a daily basis, but this is generally at a personal level and for personal use, rather than professional or academic usage. This is also mentioned by Emily and Simata (2022), who argue that Internet connectivity and ICT resources are critical in the process of online education because they directly impact teachers' ability to continue teaching away from physical classrooms and learners' ability to continue studying.

5.3.2.4 Pedagogical barrier

According to Amemado (2020), owing to the pandemic, practically all basic education institutions worldwide sought to integrate online education, albeit at varying rates, ranging from the off-line, drop-and-go model to extremely intensive, well-structured, and fully online programs. According to the participants, they are not prepared for online pedagogy at their school since they have never gotten any instruction on its use. They also claimed that one of the educational impediments is a lack of infrastructure. According to Kadhila and Nyambe (2021), most teachers and learners were not prepared for the transition to online teaching and learning. As a result, the schools encountered challenges in terms of technology tools and know-how to successfully and efficiently conduct online education. They go on to say that, in order for online pedagogy to be successful, professional instructional designers must prepare the teaching materials, teachers must be pedagogically trained for developing and delivering online programs, and learners must be exposed to the dynamics of online pedagogy. Emily and Simataa (2022) claimed that, while the government offered some assistance to the teaching and learning process in the form of technical support for teachers and learners, it was insufficient since it was underrepresented during the COVID-19 epidemic. As a result, the evaluation of learners and academic integrity in the context of online learning remained a major problem.

Mohamedbhai (2020) also remarked that unprepared online pedagogy degrades the quality of teaching and learning. Furthermore, believing that online pedagogy may be helpful by just publishing a teacher's notes online or producing a video clip of a teacher is a fantasy. However, this was the overall trend at the time of this study. Based on the findings, it is

obvious that schools are not prepared for online teaching owing to a lack of expertise and technology means. When the researcher met with one instructor from the school that has one smart television, he indicated that one smart television (TV) is insufficient to accommodate all of the teachers and learners, and it is only utilized by Grades 12 learners. He goes on to say that while Grade 12 teachers were able to use the smart TV, some of his colleagues are hesitant to innovate since they are accustomed to conventional face-to-face teaching and learning.

5.3.2.4.1 The knowledge of teachers in online delivery and the uses of technology

Teachers' Educational Context in Namibia Namibian schools must have at least ICT development level 2 according to the Tech/Na! implementation plan. To enable online pedagogies, teachers would need to receive ICT Literacy training or Foundation level ICT Literacy, and the school would need to schedule ICT training for learners at least one session each week. The participant mentioned that there were various digital and technological concerns with online pedagogies. They also emphasized that many Namibian teachers' technology abilities are restricted to basic computer skills. Participants mentioned insufficient network coverage, an inconsistent network, and a lack of computers to accommodate all teachers and learners.

This is corroborated by Wilder (2012), who claimed that the Namibian MoEAC must address the unequal distribution of technological infrastructure and internet connections despite several attempts to create infrastructure in schools and despite connectivity being available in more than 80% of Namibia. He said that different Internet connectivity types

were crucial for delivering potential training or other device installations. Additionally, access to the professors and connectivity are problems. Boer and Asino (2022) concurred that it was crucial for teachers to consider factors such whether the learners and their parents had access to power at home, connectivity for electronic gadgets, etc. Despite the fact that teachers are receiving training in a variety of ICT literacy abilities, it cannot be believed that just because they are skilled in technology literacy, they also possess the pedagogical skills necessary to incorporate technology into the classroom or produce online content. An essential component in the quick proliferation of adoption throughout developing nations is the evaluation of e-readiness in influencing integration practices (Ndung's, Maweu & Mwenja, 2017). The researcher concluded from the participant's response that restricted technical resources, disparities in Namibian teachers' access to the internet, and maybe a lack of adequate technology training characterize the context of the teachers' online pedagogy experiences and decisions. When the researcher queried the teachers about their computer proficiency, the majority had none, a small number had beginner-level proficiency, one had intermediate proficiency, and none had advanced proficiency. It is obvious that in order to enable online pedagogy, teachers must complete ICT literacy training or Foundation level ICT literacy, and the school should schedule at least one class each week for learners to take ICT literacy courses.

5.3.2.5 Learners barriers

The literature research has shown that there are still a number of obstacles for many basic education institutions, particularly in Africa, despite chances for all of them to quickly enhance and maximize their ICT operations (Kadhila & Nyambe, 2021).

5.3.2.5.1 Affordability of data

Most learners still struggle to access to the internet, especially those who can't afford data plans, cell phones, or laptops (Wilder, 2012). In addition to issues with equipment accessibility and a dependable Internet connection, difficulties with learning environments, such as lack of data access to course study materials, were also observed. These results support Tamrat and Teferra's (2020) assertion that it is difficult for learners in basic education institutions in Africa to access online pedagogy. The learners who took part in the survey said they encountered several obstacles, such as a lack of ICT resources at their school. One person mentioned that only learners in grades 12 are allowed access to their school's one smart board.

Because of the disruptions caused by the COVID-19 epidemic, Kadhila & Nyambe (2021) reinforced the idea that there are technological and quality-related issues encountered during emergency online education. They added that it was possible to draw the conclusion that the delivery of online pedagogy in basic education institutions around the world, particularly in Africa, was hampered by technological difficulties that were exacerbated by, among other things, bandwidth and connectivity issues, a lack of technical

support for learners, issues with the infrastructure of technology, technological challenges, and a lack of technological experience. Tamrat and Teferra (2020) concurred that it is also important to consider the possibility that online pedagogy was influenced by competing goals. For instance, the learners' time may have been split between online instruction, taking care of sick family members who might have caught the infection, and self-isolation if necessary. These results are consistent with those made by Bassett (2020), who notes that learners, particularly those at African basic education institutions, are protesting the equity disparity that is exacerbated by a lack of access to online learning technology for learners who are without either access to or the resources to afford the technology. The most common technical obstacles that teachers and learners face may be inferred from the response's technological tools, connectivity concerns, and level of computer proficiency. Some teachers and learners claimed they don't have access to a range of technology.

Participants said that the absence of technological equipment, Internet access, and user skills are the biggest obstacles for teachers and learners when adopting current technology in online pedagogy. The educators use whatever technology resources they have at their disposal to support online education. According to the findings, just because there are ICT gadgets in a school doesn't indicate that they would be used for that reason. Simataa (2015), who advocated for most Namibian schools to start accumulating computers in the 2000s, notably for Computer Studies school topics and for administrative purposes, supports this. But unlike other schools, where purchasing computers was more of the norm and where schools should have computers even when they are not utilizing them, these computers were not purchased for integration in classes. Although there were just a few

computers in schools, the skills shortage was the fundamental barrier to the incorporation of computer technology.

According to the researchers' observations, schools are not equipped with technological tools to make online pedagogy possible. The researcher summarised the technological tools that were observed at the selected schools in Table 5.2.

Table 5.1 Overview of technological tools available at two the selected schools

Technological tools available	**School 1**	**School 2**
Computers lab	No computer lab	No computer lab
Computers	5 desktop computers	No desktop computers
Laptops	1 laptop for the teachers	1 laptop for the teachers
WIFI	Have WIFI at the administration building	Have WIFI at the administration building
Smartboard	1 smartboard mainly used by grade 12	No smartboard

	teachers and learners only.	

As indicated in Table 5.1, schools lack ICT resources to access online pedagogies. Both schools lack a computer lab, with School 1 having just five desktop computers and School 2 having only two. Both schools have only one laptop, which is mostly used by teachers, and Wi-Fi is only available in the administrative building. School One has one smart board, but School Two does not.

5.3.2.4 Guiding learners learning

Another problem mentioned by numerous professors, according to Roble and Braathen (2002), was the quick interchange of discourse that would be seen in face-to-face classes, noting that the delay might induce misinterpretation. According to Baran (2011), because teachers were unable to witness learners' emotions immediately during an instant dialogue, they were forced to interpret learners' communications, which lacked sensory signals. The lack of these audio-visual aspects made it difficult for the 116 teachers to detect when children required assistance and to respond quickly to those requirements. According to the instructor who participated, it is difficult to guide learners since they cannot read their body language to determine whether or not they comprehend. This is consistent with Doug (2002), who claims that data from a 1999 research conducted by Elliot Inman and Michael Kerwin revealed that teachers had inconsistent perspectives of

online pedagogies. They indicated that many were ready to teach again after having taught a course, but that the quality of the course delivered to online pedagogy learners was equivalent to or worse than that of face-to-face courses. Palloff and Pratt (2002) concurred that it appears that teachers believe that technology would improve class quality on its own, but "technology does not teach learners; effective teachers do."

Participants in the survey claimed that they do not receive sufficient direction from their teacher while utilizing online pedagogies, and that the instructions are not always clear. The Grade 12 learners also indicated that when they signed up for Edmodo, the instructions were unclear, and because they were completing it at home, it was difficult. Some learners reported that they did not sign up because they did not have laptop computers or cell phones. This is consistent with Karatas and Simsek's (2009) experiential study comparing face-to-face and online pedagogies delivery, which found that limited time for online learners to express themselves and read and write on computers could be one of the reasons they scored slightly lower than face-to-face learners. Lynch (2006) agreed that access to technology is becoming a critical problem in terms of equitable distribution among learners. In affluent nations, the portrayal is of more technologically advanced classrooms with favourable learner-to-computer ratios. According to the comments of the participants in this study, a lack of technological understanding, network access, and ICT tools is harming teachers and learners in the application of online pedagogy in the Otjiwarongo circuit.

5.3.3 Current practice of online pedagogies

A best practice, according to Luscinki (2018), is a method that has been deemed more effective than other alternatives due to the positive outcome produced. A best practice is a technique or methodology that has been demonstrated by experience and/or research to result in the desired outcome. There is extensive debate of "best practices of online teaching" in the educational literature; nevertheless, what is labeled "best practice" in the pedagogical literature vary depending on disciplinary content, education level (bachelors, masters, and doctorate), curriculum, and instructional style. As a result, it is feasible that there is no such thing as "best practice," and that continuing study to discover this non-existent instructional object may distract us from actually advancing online pedagogy (Learning & Situations, 2020).

According to one of the study's participants, some teachers are ineffective because they were unable to solve technology-related problems during live classes. The teacher goes on to explain that learners' access to online learning will be hampered if they lack adequate technological skills. Participants in the survey agreed that some of their professors are ineffective at online pedagogy and struggle to set up online learning management systems like Edmodo. This aligns with Serdyukoy (2015), who claims that we lack an appropriate pedagogical theory or practice for the online classroom. Pedagogy encompasses nearly any method that improves the learning experience (including instructional tactics, engagement with technology, material delivery vehicles, and so on), and stresses the context and interactions of the teaching and learning dynamic. Gilbert (2015) agreed that effective online pedagogy promotes learner-centered learning and makes use of active

learning activities. Furthermore, Bill Pelze (2009), a Professor of Psychology and recipient of the Sloan Consortium Award for Excellence in Online Teaching, offers three principles of effective online education (p.3):

- Principle 1: Let the learners do (most of) the work. The more time learners spend engaged with the content, the more they will learn.
- Principle 2: Interactivity is the heart and soul of effective asynchronous learning.
- Principle 3: Strive for presence: social, cognitive, and teaching presence.

According to the findings, teachers' fundamental abilities are frequently too rudimentary for use in online pedagogy, and the same is true for learners. While basic abilities allow teachers and learners to use their personal computers and/or cell phones to type and search for information on the Internet, they are insufficient for interaction with online learning environments. As a result, in order for teachers and learners to fully embrace online pedagogy, they must be given the essential computer skills training as well as training in the online platforms that they will utilize. Even if we have greater exposure to ICT technologies, online pedagogy will remain a notion for many poor nations like Namibia until we learn the requisite skills. According to the comments of the participants, for the best practices, both teachers and learners must be provided with adequate computers and Wi-Fi, which will aid them in the efficient use of online pedagogy. The researcher asked the instructor about the present state of online pedagogy in their schools, and the teacher said that there is no truly effective online pedagogy in schools since both teachers and learners lack knowledge and abilities. Government policies on online pedagogy should be

supported more heavily by public monies, as seen in the United Kingdom, Australia, and France (Oye et al., 2011; Jimoh, 2013).

5.4 Summary of the study

The research intended to investigate teachers' and learners' experiences with online pedagogy in the Otjiwarongo circuit, which included Grade 9 to 12 teachers and learners at two chosen schools in Namibia's central region. The study looked at the online pedagogy tactics utilized by teachers and learners, the obstacles that teachers and learners experience in online pedagogy, and the contemporary practice of online pedagogy in the Otjiwarongo circuit.

The findings demonstrated that teachers and learners lack appropriate information on how to use online pedagogy, and a lack of resources such as technology and internet access might lead to discontent among teachers and learners. Participants argued that while all teachers were professionally qualified as teachers with diplomas and degrees, and some had qualifications that specialized in educational technology, these qualifications did not necessarily mean that teachers had the necessary computer skills to use online pedagogy in teaching and learning. The findings revealed that while the majority of teachers possessed basic computer abilities and thought that online pedagogy had the potential to improve teaching standards, they lacked the ability to use computers for instructional practices. The survey also discovered that while schools had some ICT equipment, it was insufficient for teachers to employ for online education. As a result, the findings revealed

that schools lacked ICT equipment and internet access, and teachers did not have enough opportunities to engage with ICTs in order to become acquainted with the technology.

The study added rich and important knowledge to the existing body of knowledge, which it is anticipated can be used by future researchers in similar studies and will benefit teachers, learners, policymakers, and curriculum creators.

5.5 Lessons learned

The Active Learning Theory and Experiential Learning Theory of John Dewey were determined to be more applicable in this study; they influenced the data analysis and aided in addressing the research question presented in Chapter One. According to Richey and Klein (2011), active learning theory states that learners should be actively engaged or participating in the learning procedure in order to learn better. The study also validated what Gilbert et al., (2015) proposed: Active Learning equips teachers with fresh ideas and ways that connect theoretical comprehension with actual classroom practice. According to the research, teachers and learners face several obstacles and challenges in online pedagogies. These include a shortage of technology instruments, challenges with internet access, a lack of computer literacy understanding among teachers and learners, and a lack of support from parents, guardians, the government, and all education stakeholders.

The two selected schools, like other basic education institutions, particularly in Africa, encountered various online learning implementation difficulties comparable to those highlighted in the literature research. Nonetheless, while basic education institutions, including the selected school, have faced a number of challenges when implementing online pedagogies, this will provide an opportunity for governments and basic education institutions to reconsider and prioritize investing in robust ICT and Internet services more than ever before in order to improve and maximize ICT operations and build the capacity required to fully deliver entire programs online.

The study demonstrates how the professional and educational contexts impact the ICT resources required by teachers to make online pedagogy decisions. What teachers and learners could accomplish was governed by their access to ICTs, digital tools, and connection. Despite emergency measures and an emphasis on online pedagogies, Namibia's education ministry is unprepared and vulnerable (Boer& Asino, 2022). In general, actual ICT integration in Namibian schools has yet to be fully realized, as there are several components that must be addressed before total and successful integration can be achieved. While integration is still a problem, there are several concerns that are impeding the process of integration and, as a result, the adoption of online education in Namibia. A lack of computer skills is one of the concerns for ensuring success in online education. Teachers have rudimentary computer abilities; nevertheless, these skills are insufficient to develop online education or e-learning. As a result of this lack of sufficient computer abilities, teachers must be taught in the required skills to properly adapt to online

education. Given the prevalence of e-learning and online education, teachers must be educated with the necessary abilities to teach outside of the classroom.

The conclusions of the study will be explained in combination with the three main objectives of the study as follows:

Objective one: *Strategies for online pedagogies used by teachers and learners in Otjiwarongo circuit.*

Some participants indicated that they are using online pedagogies to enhance learners learning, in online pedagogy, all learners get a chance to participate and answer the questions, unlike in the face-to-face classroom and online pedagogies make teachers' and learners' assessment easier and save more time. This objective was partially achieved, since the use of online pedagogy in the sampled schools was limited, yielding thin data on teachers' and learners' experiences.

Objective two: *Challenges faced by teachers and learners in online pedagogies.*

According to the study's conclusions, the following were among the numerous obstacles experienced by teachers and learners while using online pedagogy: Lack of resources, including technology equipment such as computers, laptops, mobile phones, and Wi-Fi access, as well as a lack of computer skills, was mentioned by the majority of participants as a support for the Directorate of Education, Arts, and Culture. This goal was met because all of the issues were mentioned by the participants. A lack of computer skills is one of the concerns for ensuring success in online teaching. Teachers have rudimentary computer

abilities; yet, these skills are insufficient to progress online teaching. As a result of this lack of sufficient computer abilities, teachers must be taught in the relevant competencies.

The study found that the teachers experienced the following limitations as they use online pedagogy:

- Teachers have limited knowledge and understanding of online pedagogy.
- No technological equipment and resources at the school for online pedagogy to take place.
- No internet connectivity at the school
- Some teachers do not have a smartphone for online pedagogy to take place.
- Teachers are used to face-to-face teaching and learning.
- Insufficient training
- Overcrowded classroom

The study found that the learners experienced the following limitations as they use online pedagogy:

- Have no knowledge and understanding of online pedagogy.
- No technological equipment at the school for online pedagogy to take place.
- No internet connectivity at the school
- Some learners do not have smartphones or data for online pedagogy to take place.

From those challenges, it can be reasoned that it was difficult for teachers and learners to use online pedagogies in their teaching and learning efficiently. This objective was fully achieved as the study generated rich data about the challenges faced by teachers and learners in the use of online pedagogy.

Objective three: *Current practice of online pedagogy.*

It appears that in order to use online pedagogy effectively, both professors and learners must be equipped with an adequate number of computers and Wi-Fi. Teachers are required to educate online, yet they lack portable technology such as computers and notebooks that allow them to teach from anywhere. Teachers may have their own gadgets that are enough for teaching without regard to geographical location. Others, on the other hand, have portable laptops or notebooks, while others have desktop computers that they cannot move around with. To address this worry, teachers must be given with the required ICT gadgets suitable for unfettered online pedagogy. Aside from proposals for improving ICT infrastructure, participants advised that decision-makers create chances for capacity building for teachers and learners in the use of technology in learning and teaching. This goal was completely met when participants proposed suggestions to enhance the present practice of online teaching in schools.

Overall, the findings indicate that the COVID epidemic increased the already broad disparities in access to internet connectivity, smart devices, and teacher training essential for an efficient shift to an online method of education. Teachers adapted easily to online

instruction, thanks to institutional training and self-learning resources. Respondents, on the other hand, were dissatisfied with the efficacy of online teaching and assessment methods and showed a strong desire to return to conventional means of learning.

Based on the findings of the study, it could be deduced that Namibian government school particularly in ruler areas are not ready for the fourth industrial revolution (4IR) as there are no sufficient ICT infrastructure and technological know-how among both learners and teachers. Therefore, several barriers hinder the effective implementation of online pedagogies in these schools. Based on the findings, the study offers several recommendations to improve the practice, not only in the schools that participated in the study but across the country.

5.6 Recommendations of the study

In improving the uses of online pedagogy much attention should be paid to the training of the teachers and learners on how to use online pedagogy. It was evident that the teachers were not trained on how to use online pedagogy in their teaching and assessing the learners. Recommendations are thus made to the relevant stakeholders in online pedagogy.

5.6.1 Recommendations for teachers

- Teachers must undergo continuous professional development (CPD) to update themselves with the new and necessary ICT tools and also keep informed about their skills in online pedagogy. Also, teachers must be encouraged to develop their tools as well as online content materials.

- Teachers capacity for online pedagogy must be strengthened through training to make the necessary adjustments with new technological changes and how to design and implement technologically sound pedagogy.

5.6.2 Recommendations for school management

- The school management must look for sponsors in their communities so they donate computers, laptops, Wi-Fi, and any other technological tools that will make online pedagogy successful.
- The management must encourage the teachers to attend any online training and provide financial support for that.

5.6.3 Recommendations for the regional office of Otjozondjupa region

- The Regional Office should engage the schools in continuous online pedagogy training to expose them to new learning technologies and their effective uses in teaching and learning.
- Follow-up workshops should be conducted to ensure effective progress. Proper training can provide teachers with transparency regarding what is expected of them in the use of online pedagogy.

5.6.4 Recommendations to the government

- The government through the MoEAC must support the schools by investing in ICT infrastructure and providing them with internet IT gadgets and learning management systems.
- The government through the MoEAC must provide schools with financial support for in-service training for teachers in online pedagogy.
- The government through the MoEAC must develop a digital competency framework for teachers and learners for implementation in Namibian schools to meet the demands of the fourth industrial revolution (4IR).

5.6.5 Recommendations for further research studies

- Research is needed in other regions to complete the view of the use of online pedagogy in Namibian schools.
- There is a need for a study to determine the extent to which schools customise and implement online pedagogy, i.e. whether schools have online pedagogy systems, and how effective are these systems for the realization of online pedagogy in the classroom?

5.6.7 Recommendations to the parents

- Parents must make sure that they provide their learners with online learning resources and the internet at home.

- Parents set the standard by controlling their children's online environment when they are using online learning at home.
- There is a need for further research to propose a digital competency framework for teachers and learners in Namibian schools.

5.7 Implications of the study

- This study contributes to the understanding of the major challenges experienced by school teachers in implementing online pedagogies during the COVID-19 pandemic.
- It also investigated various factors that influenced online pedagogy implementation during the COVID-19 epidemic.
- It, furthermore, investigated school teachers' ways of dealing in the face of the hurdles of online pedagogy implementation in Otjiwarongo circuit during the COVID-19 epidemic.
- This study provides a road map for teachers to teach differently in difficult situations while learners learn online.
- It may be viewed as a roadmap for increasing e-learning system deployment among teachers and learners.
- The finest practices of teachers and administrators will serve as a model for others.

5.8 Summary

In summary of this chapter, the study clarified why it was essentially appropriate for this research to be conducted. It concluded with recommendations for the different stakeholders in the uses of online pedagogy. The study aimed at exploring teachers' and learners' experiences with using online pedagogies in two selected schools in Otjiwarongo circuit, Otjozondjupa region. It examines the teacher and learners' experience with online pedagogies in Otjiwarongo circuit, identifies teachers' and learners' challenges when using online pedagogy, and suggested how teachers' and learners' experiences with online pedagogy can be improved. The present study revealed that during the implementation of online pedagogy as a result of COVID-19 pandemic, teachers faced issues with ICT literacy, classroom management, and connection. Therefore, the study suggested that school management and education leaders must organise training programmes for teachers so that online classrooms can function efficiently.

5.9 Limitations

Problems were encountered while conducting this study as data were collected during the lockdown. Therefore, some of the interviews were conducted virtually. Furthermore, some teachers were not willing to be interviewed due to trauma imposed by COVID-19. The researcher had to be flexible and postpone interviews until such a time participant were comfortable to participate. The other limitation was also that although online pedagogies were implemented, their application were limited due to lack of ITC infrastructure. The data were also collected from only two schools. Therefore, it is suggested that future

researchers could conduct similar studies with a large number of schools in the country, including public and private schools.

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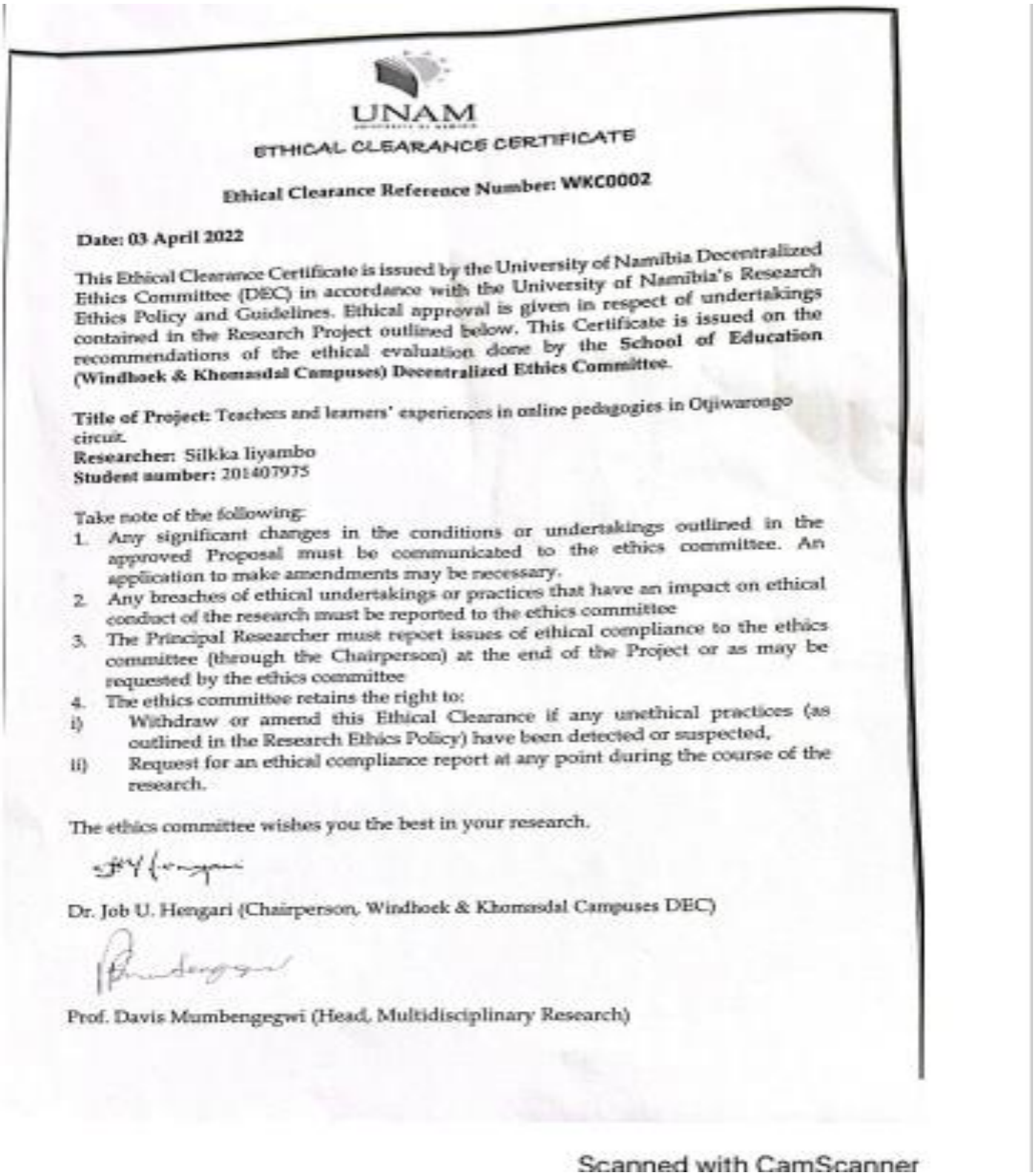
Appendices

Research instruments

APPENDIX 1: ETHICAL CLEARANCE CERTIFICATE



UNAM

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: WKC0002

Date: 03 April 2022

This Ethical Clearance Certificate is issued by the University of Namibia Decentralized Ethics Committee (DEC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the **School of Education (Windhoek & Khomasdal Campuses) Decentralized Ethics Committee.**

Title of Project: Teachers and learners' experiences in online pedagogies in Otjiwarongo circuit.
Researcher: Silkka Iiyambo
Student number: 201407975

Take note of the following:

1. Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the ethics committee. An application to make amendments may be necessary.
2. Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the ethics committee
3. The Principal Researcher must report issues of ethical compliance to the ethics committee (through the Chairperson) at the end of the Project or as may be requested by the ethics committee
4. The ethics committee retains the right to:

i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,

ii) Request for an ethical compliance report at any point during the course of the research.

The ethics committee wishes you the best in your research.

Dr. Job U. Hengari (Chairperson, Windhoek & Khomasdal Campuses DEC)

Prof. Davis Mumbengegwi (Head, Multidisciplinary Research)

APPENDIX 2: INTERVIEW PROTOCOL FOR TEACHERS

Research Question	Interview Questions
1. The implementation of what online teaching and learning strategies were possible during the pandemic?	1. How do you as a teacher facilitate learners learning using online pedagogies? 2. How do you experience online pedagogies? 3. What skills do you have as a teacher in the use of online pedagogies? 4. Explain your training needs and how to use online pedagogies. 5. Which online pedagogies tools do you use to teach learners? Please justify!
2. What challenges in terms of skills and resources should be addressed to improve online the learning and teaching experience in Namibia?	1. What challenges do you face as a teacher when using online pedagogies? 2. How do you describe the success or failure of online pedagogies? 3. What support do you have in place or need to overcome the challenges of using online pedagogies?

3. How can the current practice of online pedagogies be improved?	1. How do you suggest different stakeholders should play their role to ensure the effective implementation of online pedagogies? 2. What do you think should be done to improve the current practice of online pedagogies at your school?

APPENDIX 3: FOCUS GROUP DISCUSSIONS GUIDE FOR LEARNERS

Introduction

Good morning learners, my name is Silkka Katoole Iiyambo, I am a second-year master's student at the University of Namibia, studying Educational Technology. Am researching the Otjiwarongo circuit teachers and learners' experience in online pedagogies. The findings from the study will help to improve your online learning experience. Today as a group am going to ask you questions based on my research topic. I would like to inform you that any comments featured in this report will be anonymous and everything we will discuss here will be confidential. There are no "right or wrong answers and you should share your opinion and experience candidly. First, I do like everyone to introduce themselves. Can you tell me your name?

Research questions

1. The implementation of what online teaching and learning strategies were possible during the pandemic?
2. What challenges in terms of skills and resources should be addressed to improve online the learning and teaching experience in Namibia?
3. How can the current practice of online pedagogies be improved?

Guiding questions

1. Which online learning tools do you use in learning and assessment?
2. What is your experience in using online pedagogies to promote effective learning?
3. What skills do you as learners have or need on using online pedagogies?

4. What challenges do you as learners face when using online pedagogies?
5. What assistance do you need to overcome those challenges?
6. What do you think it should be done to improve the current practice of online pedagogies at your school?
7. Who do you think should be involved in the improvement of online pedagogies and what is the role of each player?

APPENDIX 4: OBSERVATION CHECKING LIST FOR TEACHERS AND LEARNERS

Observation	Yes	No	Comments
Do teachers facilitate learners learning using online pedagogies?			
Do teachers and learners have skills in the use of online pedagogies?			
Do teachers and learners need training on how to use online pedagogies?			
Does the school have adequate ICT tools for online teaching and learning?			
Do teachers and learners have experience in using online pedagogies to promote effective learning?			
Do teachers face challenges when using online pedagogies?			
Do teachers and learners need support to overcome the challenges of using online pedagogies?			

APPENDIX 5: RESEARCH PERMISSION APPLICATION

02 August 2022

The Director

Otjozondjupa Region

Otjiwarongo

Dear Ms Josephine Mutenda

Re: request for permission to conduct a research study at selected schools in otjiwarongo circuit, Otjozondjupa region.

My name is Silkka Katoole Iiyambo, a teacher at Khorab Secondary School in Otavi, and a master student (Educational Technology) at the University of Namibia. I am writing this letter to request for permission to conduct my research as part of my study.

I am conducting a study on **teachers and learner's experiences in online pedagogies in Otjiwarongo circuit: A Case Study of Two Selected Schools in Otjozondjupa Region, Namibia.** Online pedagogies seem to be well established and researched at higher education level but not at basic level, this has prompted the researcher's interest to fill this gap by exploring teachers' and learners experiences in the use of online teaching and learning in Otjiwarongo circuit. This study may help teachers to identify and address challenges that may be in online pedagogies. This study will take few weeks. This study will employ a qualitative research approach, using a multiple case study research design.

The population of this study consists of all grade 9, 10, 11 and 12 teachers and learners, with a sample of 8 teachers and 12 learners. As such, the sample will comprise 2 schools, Khorab ss and Kombat combined school. Therefore, the sample size will be 20 participants.

I sincerely hope my request will be granted in this regard and therefore count on your support as we strive towards advancing education in Namibia as a whole.

Yours in academic,

Silkka K Iiyambo

Email address:iiyambokatoole94@gmail.com

Cellphone: 0818865134

APPENDIX 6: APPROVAL LETTER BY THE DIRECTORATE OF EDUCATION, ARTS, AND CULTURE

REPUBLIC OF NAMIBIA
OTJOZONDJUPA REGIONAL COUNCIL

DIRECTORATE OF EDUCATION, ARTS AND CULTURE
"Committed and Dedicated For Quality Education"

Tel no: 264 67 308000
Fax no: 264 67 304871
Enq: J. Sikeso
Email: jsikeso06@gmail.com

Private Bag 2618
Erf. 280, Sonweg Street
OTJIWARONGO
Namibia

12 August 2022

Ref No: 14/6/10

Silka K. Iiyambo
081 886 5134

Dear Ms. Iiyambo

SUBJECT: PERMISSION TO CONDUCT RESEARCH AT SELECTED SCHOOLS IN OTJIWARONGO CIRCUIT - OTJOZONDJUPA REGION

Your letter dated 02 August 2022 bears reference and is hereby acknowledged.

Regarding the above mentioned subject, the Directorate of Education, Arts and Culture is pleased to inform you that permission is granted as per your request to conduct a research study at selected schools in Otjiwarongo Circuit. The Inspector of Education and School Principals will be notified of the approval by copy of this letter.

You are kindly requested to make sure that, the research process should by no means whatsoever disrupt teaching and learning.

We hope and trust this exercise will enhance quality education in the region.

Your cooperation in this regard will be highly appreciated.

Yours faithfully

MS. J. MUTENDA
REGIONAL DIRECTOR

All official correspondences must be addressed to The Regional Director