Teacher and Learner Experiences of Using ICTs for Teaching and Learning during COVID-19: A Case of Two Secondary Schools in Shiluvane Circuit, Mopani District, Limpopo Province

by

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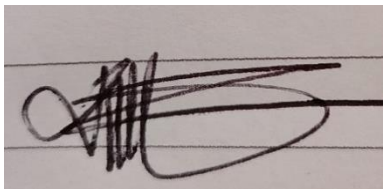
I declare that **Teacher and Learner Experiences of Using ICTs for Teaching and Learning during COVID-19: A Case of Two Secondary Schools in Shiluvane Circuit** is my work, and all the sources quoted have been indicated and acknowledged using complete references.



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DEDICATION

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ABSTRACT

The purpose of this study was to investigate the experiences of secondary teachers and learners in using ICTs for instructional purposes during the COVID-19 pandemic. The study also aimed to understand the opportunities and challenges surrounding the use of ICT in teaching and learning during COVID-19. The study used connectivism and social constructivism as its theoretical frameworks. To achieve the objectives mentioned above, the study used a qualitative interpretative research approach that uses semi-structured interviews and review of documents as its data collection strategy. The study included a sample size of 20 participants, ten teachers, and ten learners. These participants were purposefully selected from two secondary schools within the Shiluvane circuit in the Mopani district of Limpopo Province. The expected study findings were as follows: Firstly, the study revealed the effects of the COVID-19 pandemic on secondary school teachers and learners on teaching and learning. Second, the study indicated the potential technology has in making teaching and learning possible anywhere, anytime.

Keywords: Connectivism, Coronavirus (COVID-19), Information Communication Technology (ICT), Online Learning, Pandemic.

LIST OF ACRONYMS

AI	:	Artificial Intelligent
BRNE	:	Banks of Educational Digital Resources for Schools
CAPS	:	Curriculum Assessment Policy Statement
CD	:	Compact Disc
DBE	:	Department of Basic Education
DHET	:	Department of Higher Education and Training
DHs	:	Departmental Heads
EdTech	:	Education Technology
FAL	:	First Additional Language
FET	:	Further Education and Training
FM	:	Frequency Modulation
GCSE	:	General Certificate of Secondary Education
GET	:	General Education and Training
HL	:	Home Language
ICTs	:	Information and Communication Technologies
IMF	:	International Monetary Fund
KZN	:	KwaZulu-Natal
LDE	:	Limpopo Department of Education
SABC	:	South African Broadcasting Corporation
SADTU	:	South African Democratic Teachers' Union
SA-SAMS	:	South African School Administration and Management System
SBA	:	School-Based Assessment
SIP	:	School Improvement Plan
SMT	:	School Management Team
UK	:	United Kingdom
UN	:	United Nations
USAID	:	United States Agency for International Development
WAEC	:	West African Examinations Council
WHO	:	World Health Organisation
ZNBC	:	Zambia National Broadcasting Channel

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CHAPTER 1: ORIENTATION OF THE STUDY

1.1 INTRODUCTION AND STUDY BACKGROUND

The world is in the 21st century, where almost everything is done using information, communication, and technologies (ICTs) and, of late, artificial intelligence (AI) (United Nations, 2021). Online learning methods are usually used by learners in tertiary settings, so it is of paramount importance for secondary school learners to be thoroughly prepared to embrace the technological learning approach for their future academic endeavours. According to the United Nations (2021), the use of ICTs has become firmly established in tertiary education, particularly in developed nations such as the United States and Japan. Additionally, there has been a growing adoption of ICTs in secondary schools worldwide, primarily driven by the need to adapt to the impact of the COVID-19 pandemic on traditional in person instructional methods. Coronavirus disease 2019 (COVID-19) is an infectious disease caused by the SARS- CoV-2 virus. The first documented case emerged in Wuhan, China, in December 2019. The contagion spread rapidly worldwide, leading to the declaration of a pandemic known as COVID-19.

The purpose of this investigation was to explore the experiences of teachers and learners using ICTs for teaching and learning during the COVID-19 pandemic. The research was carried out in the Shiluvane Circuit, located in the Mopani District of Limpopo Province, within the Republic of South Africa. The study focused on two secondary schools that have been purposively selected. The researcher used semi-structured interview and document review research methods to collect data on the experiences of secondary school teachers and learners. The coronavirus has affected the world in several ways. It has overwhelmed healthcare systems around the world and has a knock-on effect on the diagnosis and treatment of other diseases. The COVID-19 pandemic has emerged as a significant global public health crisis, with detrimental consequences extending to the world economy and financial markets. The International Monetary Fund (IMF) (2020) states that COVID-19 led to a drop in aggregate demand, forcing the mining, manufacturing, and retail industries to cut production costs by retraining some of their workers. The global unemployment and poverty rate increased due to the retrenchment of workers caused by the COVID-19 pandemic.

In response to the COVID-19 pandemic, the relevant ministers of the United Kingdom implemented a temporary closure of nurseries, schools and colleges on 20 March 2020. As of March 20, all educational institutions in the United Kingdom had implemented the closure of conventional in-person instruction, apart from learners classified as children of key workers and those deemed vulnerable. According to the World Health Organisation (WHO, 2020), due to the presence of children at home, educational instruction was conducted through online platforms. In response to school closures, the United Kingdom (UK) has decided to cancel the General Certificate of Secondary Education (GCSE) and Advanced Level (A-Level) examinations. In December 2020, the Department of Education of England requested that retired teachers resume their teaching duties in January. This request was made in response to the expected absence of staff due to the emergence of the omicron variant of COVID-19 (WHO, 2021). The Department has also declared the implementation of stricter regulations on the use of face masks for secondary school learners in England. On 5 March 2020, the Minister of Health, Dr. Zweli Mkhize, officially announced the first confirmed case of COVID-19 in the Republic of South Africa. The patient, a man who was a resident of Durban, tested positive for the virus after returning from Italy, Europe. On 15 March 2020, Cyril Ramaphosa, currently the president of South Africa, officially declared a national state of disaster. In response to this declaration, immediate measures were implemented, including closing schools from March 18 and the implementation of travel restrictions (World Health Organisation, 2021). According to Chapter 3 of the National Disaster Management Act No. 57 of 2002, the main aim of this legislation is to effectively reduce the likelihood and impact of disasters across various sectors and governmental levels.

The COVID-19 pandemic had a significant impact on the Republic of South Africa, leading to the closure of schools by the Department of Basic Education (DBE) and the implementation of online learning programmes (DBE, 2020b). The Department of Basic Education passed on circulars and booklets outlining COVID-19 protocols to provinces and districts nationwide, facilitating the continuation of teaching and learning amid the COVID-19 crisis to mitigate and contain the transmission of the COVID-19 pandemic within educational institutions. The government has issued circulars outlining the vaccination protocols for teachers, non-teaching staff, and

learners (DBE, 2021).

To rescue the academic year 2020, the Limpopo Provincial Department of Education initiated educational broadcasts targeting matriculants through three radio stations, namely Munghana Lonene FM, Phalaphala FM, and Thobela FM. According to the DHET (2020), the Department of Higher Education and Training engaged in negotiations with various mobile network providers to secure an allocation of 10 gigabytes of daytime data and 20 gigabytes of nighttime data for learners benefiting from the NSFAS and Funza Lushaka programmes.

The information of emergency transmission to online learning due to COVID-19 found most countries unprepared. Lisa, Suzanna, and Kathryn (2021) researched teachers' concerns about the effects of COVID-19 on learners in England. The findings of their study show that teachers found it difficult to navigate the new form of education and to find the most appropriate approach to teach and engage with learners during the COVID-19 pandemic. Makafa and Masopha (2021) conducted a study on the challenges of e- learning in Lesotho. Their study found that teachers did not provide learners with adequate support to foster teaching and learning. Their research further revealed that shortages of digital devices and poor network connectivity limited teachers' ability to teach from a transactional distance. The report of Limpopo Provincial Education (2022) on the 2021 grade 12 results revealed that the interruption of traditional instruction, such as in person, due to the COVID-19 pandemic resulted in learning gaps because South Africa was largely unprepared to accommodate online learning methods and teachers were not professionally trained to use ICT devices. However, learners did not receive the appropriate technological tools to implement eLearning. This study supports the inclusion of technology in education. Teachers and learners must be prepared to embrace the use of information and communication technologies (ICT) as the education sector around the world is transforming to a technological way of doing things.

1.2 PROBLEM STATEMENT

The objective of this study was to examine the impact of the COVID-19 pandemic on the field of education and to evaluate the practicality of using ICTs for educational purposes amidst the COVID-19 pandemic. Due to the implementation

of lockdown measures and stay-at-home restrictions, the Department of Basic Education found it necessary to adjust the curriculum for primary and secondary schools. This was done to accommodate the limited number of days available for teaching and learning (DBE, 2020a). Schools were required to accommodate a maximum of 20 learners in a classroom, leading to rotational attendance and a knowledge gap between learners (DBE, 2020b). The rapid move to online learning presented numerous challenges, as most teachers and learners were not ready and lacked the necessary ICT tools to continue with their classes during COVID-19 pandemic.

Although the problem of teacher-learner unpreparedness and lack of ICT resources was not addressed, learners would suffer the most, since it resulted in their isolation and separation from the learning community, negatively affecting their performance (Xu & Jaggars, 2014). According to Adarkwah (2020), when virtual learning is efficient, it can be as excellent as, if not better than, face-to-face educational experiences for learners who are pedagogically prepared and have access to essential instructional resources. Frequent, clear, and significant engagement that incorporates the two types of schooling is crucial in determining whether learners thrive or struggle with online learning (Xu & Jaggars, 2014). This study hopes to find good practices for employing an online learning method and provide solutions to the issues associated with the adoption of ICTs in education during COVID-19.

1.3 OBJECTIVES OF THE STUDY

The main objective of this study was to investigate and subsequently describe secondary school teacher and learner experiences of how ICTs were used to facilitate teaching and learning during the COVID-19 pandemic. From the primary objective, the following secondary operational objectives were achieved:

- Discover the effects of COVID-19 on teaching and learning in secondary schools in the Shiluvane Circuit in the Mopani District.
- Explore the potential of the use of ICT to improve teaching and learning in secondary schools.

1.4 MAIN RESEARCH QUESTION

What are the experiences, opportunities, challenges, and potential of using ICTs

for teaching and learning during the COVID-19 pandemic according to teachers and learners?

1.4.1 SUB-QUESTIONS

- What are the experiences of teachers and learners of using ICTs for teaching and learning during the COVID-19 pandemic?
- What are the opportunities and challenges associated with the use of ICTs for teaching and learning during the COVID-19 pandemic?
- What potential do ICTs have to make teaching and learning possible during the COVID-19 pandemic?

The research questions assisted the researcher in achieving the following objectives:

- To explore the experiences of teachers and learners of using ICTs for teaching and learning during COVID-19 in two secondary schools of the Shiluvane Circuit, Mopani District.
- To discover the effects of COVID-19 on teaching and learning in secondary schools in the Shiluvane Circuit in the Mopani district.
- Explore the potential of ICTs to improve teaching and learning in secondary schools.

1.4 PRELIMINARY LITERATURE REVIEW

The use of ICTs for educational purposes in the context of the COVID-19 pandemic has become a focal point of the ongoing discourse, as evidenced by the substantial body of research dedicated to this topic. In their study titled "The Challenges and Opportunities of Online Learning during the COVID-19 Pandemic", Adedoyin and Soykan (2020) investigated the impact of the COVID-19 Pandemic on online learning. The study findings revealed the potential advantages associated with online learning midst the COVID-19 pandemic. In mid-March 2020, the closure of educational institutions required a transition from traditional face-to-face instruction to online learning platforms (Kallo et al., 2020). According to the study conducted by Adedoyin and Soykan (2020), online learning was identified as the most suitable method for teaching and learning during the COVID-19 pandemic.

1.4.1 Adoption and implementation of ICT during the COVID-19 pandemic

During the COVID-19 pandemic, practically every country in the world established school closures and the embrace of different educational modalities (WHO,2020). According to the WHO (2021) report, the French government, in Europe, allowed access to 17 Banks of Educational Digital Resources for Schools (BRNE) at the start of school closures; Education Technology (EdTech) companies created these materials. Banks just years before the COVID-19 epidemic. The report also stated that BRNEs are portals that provide access to many content pages, creation resources, and services for transmission and collaboration between teachers and learners (actors in discovery, training, revision, learning, and assessment). In terms of subjects and grades, these activities are completely linked to the French National Curriculum (WHO, 2021). The Zambian government, under the education ministry, responded to COVID-19 pandemic school closures by adopting digital learning through the launch of a new television station specially designed for primary and secondary school educational programmes on the Zambia National Broadcasting Channel (WHO, 2020). Doctor Kalumba, the Zambian minister of education, encouraged parents to be responsible for their children's education by encouraging them to watch those educational programmes on ZNBC TV4 (Mutale & Chileshe, 2020). According to Jianhua & Muyunda (2021), the minister strengthens online learning by making prints of televised lessons on compact discs (CD) and distributing them to children all over the country.

The South African government adopted electronic learning in response to COVID-19 school closures by partnering with two DSTV community television providers, KwaZulu-Natal (KZN) channel 261 and Soweto TV channel 251 (Department of Education, 2020b). Those two channels were used to support learners during school closures and to increase access to digital learning. Through their collaboration with the Department of Basic Education, the two community television channels managed to make use of the 54 (54) qualified teachers to teach learners the following subjects: Mathematics, Mathematical literacy, Physical sciences, Information Technology, Life orientation, English First Additional Language, and Natural Sciences at contrasting times, some in the morning, afternoon, or evening. It is evident that almost all nations used online learning during COVID-19 since technological teaching allows learners to acquire knowledge from a transactional

distance; moreover, this learning approach enables teachers and learners to share tips and skills on how to ace assessments anytime, anywhere. However, as it was not intended, the degree of success for digital learning differed from place to place; countries were compelled by the surrounding COVID-19 outbreak.

1.4.2 ICT Equity and Accessibility

As stated earlier, the transition from the traditional instructional approach to the online modality was unplanned and resulted in disparities in learning outcomes between learners attending public and private schools. According to the 2020 report from the World Health Organisation, learners in private schools had the advantage of accessing their lessons through online delivery methods. In contrast, public secondary school learners did not have the same opportunity to learn through online classes. As a result, there were disparities in learning outcomes between private and public secondary school learners. In their study, Qekaj-Thaqi and Thaqi (2021) examined the importance of ICTs in Switzerland and Europe, amidst the COVID-19 pandemic. The findings of their study indicate that private schools possess a wider range of advantages of information and communication technology (ICT) compared to public schools. According to Qekaj-Thaqi and Thaqi (2021), private schools have demonstrated an elevated level of readiness for online education by effectively using online platforms such as Google Forms and Google Meet. Adarkwah (2020) conducted a study in Ghana that examined the impact of online teaching during the COVID-19 pandemic. The study findings indicated that the use of online teaching methods resulted in the exclusion of rural teachers and learners from educational opportunities.

This exclusion was primarily attributed to insufficient ICT facilities and various technical challenges. The exclusion of rural school learners from education due to remote learning is evident, as children living in rural areas lack access to television and ICT devices (World Health Organisation, 2020). According to Adarkwah (2020), the implementation of online learning in private secondary schools before COVID-19 pandemic contributed to its successful effectiveness for learners in these institutions. According to the United States Agency for International Development (2021), Zambian private secondary school learners were able to continue their education during the COVID-19 pandemic due to their access to better tools to implement online learning. It is important to note that due to various

challenges, not all secondary school teachers and learners can fully use ICT tools during the COVID-19 pandemic. The Department of Basic Education (2020c) has reported that a considerable number of schools in rural and peri-urban areas in the South are in need.

Africa experiences a lack of technological resources, specifically computer labs. The failure of many rural secondary school learners to use online learning can be attributed to the lack of suitable ICT tools, which is a consequence of the typical economic inequalities in our societies.

1.4.3 Professional Development and Support of ICTs professional development and support

In a recent study, Wahab (2020) examined the effects of online learning on higher education in Canada and the United States. According to research conducted by Wahab (2020), educational institutions have adopted technological delivery methods in response to the COVID-19 pandemic. According to Wahab (2020), the presence of digital tools alone is not sufficient for ICT-integrated learning. Learners' preparedness also plays a crucial role in this process. According to the Department of Basic Education (2020b), it is evident that before the onset of the COVID-19 pandemic, a significant number of South African teachers lacked comprehensive formal training in technology. This lack of training included both the application of blended teaching and learning approaches and the implementation of online learning methods. According to Wahab (2020) and the Department of Basic Education (2020b), there is a consensus that teachers lacked adequate preparation to deliver online lessons midst the COVID-19 pandemic.

The closure of schools by the Ministry of Basic Education, as stated by the Department of Basic Education (2021), led teachers to implement creative strategies to maintain the continuity of teaching and learning amidst the COVID-19 pandemic. Data indicate that the COVID-19 pandemic prompted nations to transition to online learning without providing urgent professional development for teachers regarding the use of ICTs for educational purposes. Furthermore, it can be observed that a significant majority of South African teachers can be classified as digital immigrants, primarily due to the current level of technological advancement within our nation (Amutha, 2020). Clearly, the implementation of ICTs

can influence the educational outcomes of learners, particularly when teachers possess technological competence and the knowledge of how to efficiently integrate these technologies into the curriculum.

1.4.4 Teacher and Learner Experiences of using ICT

A qualitative investigation of online learning during the COVID-19 pandemic by Carlos, Manuel, and Juan (2021) points out that the use of technology in teaching helps motivate learners. Their study found that teachers and learners benefited from using online discussion forums during COVID-19 lockdown school closures. The findings of their study also reveal that the use of ICTs for teaching and learning provides teachers with an opportunity to access valuable online learning resources. In support of the above scholar, online learning helped keep learners busy during the lockdown. Most learners are mobile phone addicts, so using ICTs to enhance learning was an advantage. The learners used online WhatsApp groups to share information. The use of ICTs in education is not a one-size-fits-all thing; it is a contextual experience (Adarkwah, 2020).

Pakistani researchers Mukhtar, Javed, Arooj, and Sethi (2020) examined the pros, cons, and recommendations for online learning during COVID-19. The study found that online learning during COVID-19 was satisfactory as teachers and learners were able to work harmoniously following instructions and prescribed policies. The findings of their study further reveal that the introduction of online learning offers more opportunities than constraints, since teachers and learners can use computers and other ICT devices. Mohammad (2020) from Saudi Arabia researched the problems of electronic learning experienced by learners during the COVID-19 pandemic. The study findings indicate that the learners expressed dissatisfaction with their experience with continuing online learning. This dissatisfaction originated from their inability to achieve the expected learning outcomes, which was attributed to various technical challenges encountered during the online learning process.

1.4.5 Constraints of using ICTs

South Africa has been experiencing load-shedding and COVID-19 simultaneously, which makes the online learning approach challenging for both teachers and

learners, especially in rural areas. Maila (2020), an Indonesian researcher, examined the difficulties and challenges of ICT use during the COVID-19 pandemic. The findings revealed that the use of ICTs for education resulted in a small number of learners experiencing network problems and a shortage of ICT tools. Maila (2020) also disclosed using ICT approaches in classroom situations can be ineffective as learners can lose focus and use the Internet for their personal use.

Online learning in a classroom environment can work effectively if teachers are in a good position to monitor learners when teaching lessons. From the above overview of recent studies conducted domestically and internationally on the use of ICT in education during COVID-19, the ICT experiences for teachers and learners are contextual. Some benefited from the use of ICT during COVID-19; on the other hand, some teachers and learners could not connect due to the shortage of ICT resources, their inability to use ICT tools, and inferior network connectivity. Despite the prevailing constraints, COVID-19 revealed more opportunities for using ICTs in education that will be useful in the future. The social networks that those teachers are using can also be used after this pandemic. We live in an era of technology, and ICTs can also be used to prepare learners to become better members of society. Finally, teachers and learners can also use those forms to obtain ideas, skills, and critical thinking skills.

1.5 THEORETICAL FRAMEWORK

Creswell (2014) asserts that the theoretical framework serves as a comprehensive collection of concepts and ideas that can be used to address the phenomenon identified by the problem statement and the literature review. The theoretical framework applied to this study will be connectivism. According to Siemens (2013), connectivism is a theoretical framework that applies to the digital age. It claims that learning is a phenomenon that occurs within networks and is influenced by both technology and social interactions. According to Goldie (2015), connectivism can be described as a system of thought that provides insight into the learning process in the context of the digital era. It posits that learning is a networked phenomenon influenced by both technology and social interaction. The theory of connectivism was initially presented in 2004 through a blog post authored by George Siemens, which later came out as an article in 2005. Siemens claims that the construction and

preservation of connections play a crucial role in facilitating ongoing learning.

The theoretical framework of connectivism uses the terminology of "nodes" and "links" to explain the process of acquiring and establishing connections between two elements. Information within networks (Siemens, 2013). Goldie (2015) states that in connectivism theory, learners are viewed as nodes within a network. This theory proposes that learning takes place through the establishment of connections, or "links," between different informational nodes and that knowledge is formed and developed through the ongoing creation and maintenance of these connections. Siemens and Downes (2013) established eight key values of connectivism. These principles argue that learning encompasses not only the assimilation of internalised knowledge and first-hand experiences, but also the recognition that technology is transforming the process of learning. Connectivism is an educational philosophy that places significant emphasis on the use of technology to enhance teaching and learning processes. Connectivism places an important focus on the act of establishing connections between specialised nodes or sources of information. It also highlights the capacity to acquire knowledge beyond what is presently known with available resources. Additionally, connectivism recognises the importance of non-human devices, such as computers, smartphones, and web browsers, in facilitating learning (Goldie, 2015). The theory of connectivism learning transfers the responsibility for learning from teachers to learners.

This change is facilitated by the online learning method, which enables learners to construct their own learning experiences through social interaction. During the COVID-19 pandemic in secondary schools, teachers find themselves directing their attention toward electronic devices, namely smartphones and laptops, rather than directly engaging with learner facial expressions. Teachers can use social media platforms and the Internet as tools to establish connections and instruct learners beyond the traditional confines of the classroom setting. Teachers can use a dedicated Facebook page for their classes to effectively communicate and inform learners about upcoming homework assignments and activities. The primary objective of Connectivism learning activities is to provide precise and current knowledge, while the learning process involves the act of decision making

(Siemens, 2013). The research paradigm chosen for this study is connectivism, as it aligns with an instructional approach that encourages teachers and learners to use a range of ICT devices for educational purposes amidst the COVID-19 pandemic. Connectivism and interpretivism have overlapping perspectives. Interpretivism asserts that learning is subjective and socially constructed, whereas connectivism posits that individuals acquire knowledge by establishing connections with various information nodes.

1.6 DEFINITIONS OF OPERATIONAL TERMINOLOGIES

The following are concepts or terms that will be used throughout the study. The researcher has defined the following concepts in line with the purpose of his study.

1.6.1 Connectivism

Connectivism is a theory of the digital age. This theory considers learning as a phenomenon of network influenced by technology and socialisation (Siemens, 2013). Connectivism states that for learning to occur, knowledge must be activated by learners connecting to and participating in an online discussion group. According to Goldie (2015), connectivism is a learning philosophy that posits that learners should help to combine ideas and information; to Connectivist, technology is the main part of the learning process, and our continued connectedness provides opportunities to inform the learning process.

1.6.2 Coronavirus (COVID-19)

According to the World Health Organisation (2020), there is a respiratory disease in humans caused by a coronavirus that is linked to severe symptoms and, in certain situations, mortality. This is especially problematic for older individuals and those with pre-existing health conditions. The virus first became known in China in 2019 and subsequently worsened to a global pandemic in 2020. The abbreviation for Coronavirus Disease 2019 is COVID-19. According to the World Health Organisation (WHO, 2021), the coronavirus is an illness of the respiratory tract characterised by a prominent level of contagiousness and is caused by the SARS-CoV-2 virus. It is widely accepted that transmission occurs through the discharge of droplets from an infected individual's respiratory system during coughing, speaking, and sneezing.

1.6.3 Information and Communication Technologies (ICTs)

In the context of this framework, the term ICT encompasses a diverse range of technologies. These technologies involve computers, software learning tools, networking systems and protocols, handheld digital devices, digital cameras, radio and television, recording devices, and other technologies. It is important to note that the above list is not complete and may also include technologies that have not yet been developed. The purpose of these technologies is to simplify the access, management, creation, and communication of information. (Department of Basic Education, 2014). ICTs are defined differently in various sectors and other social systems, but in the education sector, ICTs are devices that are essential to help educators use innovative strategies to improve the process of teaching and learning. According to the Department of Basic Education (2020d), ICT in education refers to technology that involves electronic tools and is associated with interactive human resources that make it possible for the user to use them for a variety of teaching and learning purposes.

1.6.4 Online Learning

Online learning is also known as e-learning, electronic, digital, or technological learning. In online learning, education takes place through the Internet. Online learning is also called electronic learning, and this is the type of instruction that occurs when using technological instruments and social media platforms (Department of Education, 2014). Online learning is a teaching method that is delivered technologically using different applications, Internet platforms, and multimedia (Amutha, 2020).

1.6.5 Pandemic

Webster (1999) states that a pandemic is a disease that is spreading all over the world. A pandemic is an epidemic that spreads across countries and affects a substantial portion of the population. According to the World Health Organisation (2020), the classification of a disease as a pandemic is based on its impact on a higher proportion of individuals and its higher death rate compared to an epidemic.

1.7 RESEARCH DESIGN AND METHODOLOGY

This section discusses the research design and methodologies that will be adopted

to conduct or conduct the study. First, the study discusses the research paradigm, followed by the research design and methodologies.

1.7.1 Research Paradigm

This study uses interpretivism which is embedded within a qualitative research design as its research paradigm. McMillan and Schumacher (2014) state that the study paradigm refers to the philosophical lens that helps the researcher view the world. Cresswell and Poth (2017) define interpretivism as the paradigm that allows researchers to be subjective and interpret the different elements of the study. According to Creswell (2014), Interpretivism is a philosophical framework that helps researchers interpret aspects of their studies and is related to the philosophy of idealism. Therefore, reality is based on interpretation. This paradigm was chosen on the basis that it strengthens human interest in the study, since it accommodates human experiences and perceptions about a phenomenon in its real-life context.

1.7.2 The Research Designs

The researcher used a qualitative case research design to collect data from the participants. According to Cresswell (2014), a qualitative case study involves a comprehensive analysis of the sophisticated and individual aspects of a specific research, procedure, organisation, programme or restructuring within a real-life context, considering multiple perspectives. Cresswell and Poth's (2017) qualitative case study research design is an empirical investigation of a contemporary occurrence set within its real-world context. Therefore, the basic objective was for the researcher to use qualitative case study research to comprehend a case in depth in its natural situation, recognising its complexity and uniqueness. In this study, the qualitative case study design was chosen because the researcher wanted to understand the contextual experiences of learners when using ICTs for educational purposes during the COVID-19 pandemic.

1.7.3 Data Collection Method

Cresswell (2014) defines qualitative research as a type of research that primarily applies words instead of numerical data and employs meaning-based approaches for data analysis rather than statistical methods. Cresswell and Poth (2017) interpretative qualitative research is the type of research that properly seeks

answers to questions by examining different social settings and their inhabitants. Qualitative research focusses on interpretation and meaning. This study uses the qualitative research method as its data collection strategy to understand the lived experiences of teachers and learners of using ICTs to conduct lessons during COVID-19.

1.7.4 Study Sample Size

This study used a purpose-sampling strategy to sample participants in the population. According to Cresswell (2014), purposive sampling allows researchers to get rich information from participants who are experts on the phenomenon being investigated. The researcher selected ten public secondary school teachers; out of these ten, four were juniors and the remaining six were senior teachers. Public secondary school teachers with less than five years of teaching experience were considered juniors, while those who had five years or more were considered senior teachers. The researcher also samples ten secondary learners from the two selected schools in the Shiluvane Circuit, Mopani District. Ten (10) secondary teachers and learners were sampled because they form a compelling case study that enables the researcher to focus on contemporary phenomena rather than holistic information from the population. The two Shiluvane circuit schools were selected on the basis that they were found in rural areas and, as a result, the researcher intended to examine the level of education during COVID-19 since these areas were mostly affected by various socio-economic issues that influenced the instructional process. The ten secondary school teachers and learners were selected because the researcher wanted to explore how online learning affected curriculum coverage and assessments in general education and training (GET) and further education and training (FET). The researcher also wanted to know the effectiveness of the support and supervision of senior teachers to junior teachers on the use of ICTs as an instructional method during the COVID-19 pandemic.

1.7.5 Data Collection Instrument

The researcher used semi-structured interviews and document reviews as data collection methods. Semi-structured interviews are typically exploratory in a qualitative case study design (Ørngreen & Levinson, 2017). According to Cresswell (2014), a semi-structured interview is a data collection technique in which the

researcher asks participants questions based on a predetermined thematic framework. However, the questions in the semi-structured interviews were not logically set. Semi-structured Interviews are qualitative and are commonly used as an exploratory tool in educational research (Creswell & Poth, 2014). The researcher decided to use semi-structured interviews because he wanted to understand the phenomenon from teachers and learners by using follow-up questions for clarification. Document review is defined as the process of collecting data through the analysis of existing documents in the literature (Maree, 2016). The document was used to identify gaps and give guidance on how to tackle the topic.

1.7.6 Data Analysis

The study adopted a seven-step qualitative data analysis procedure as proposed by Colaizzi (1978) to analyse the data. According to Cresswell and Poth (2017), qualitative thematic analysis refers to the study instrument that is used to determine the presence of certain words or themes within some given qualitative data. Thematic data analysis is defined as a research procedure that is used to make replicable and valid inferences by analysing, interpreting and coding textual material (Cresswell, 2014). The rationale for thematic analysis is to help the researcher analyse a large amount of verbal data collected through interviews (Cresswell 2014). This current study converted verbal data into textual content after conducting interviews with participants (transcriptions).

1.8 SIGNIFICANCE OF THE STUDY

The importance of this study is to investigate the lived experiences of secondary teachers and learners about using ICTs for education purposes during the COVID-19 pandemic. This study benefits teachers, learners, and educational policymakers by revealing essential information about the use of ICTs for teaching and learning during national lockdown school closures. This study was important because it sought to propose solutions for the constraints or challenges experienced by teachers and learners when engaging in the context of digital learning. The findings of this current study help prepare teachers and learners to fit into the new normal of modern technologies and the COVID-19 pandemic.

1.9 STUDY TRUSTWORTHINESS

Good research is based on adequate information and is reproducible and replicable. This study used trustworthiness as its measure of quality control. According to McMillan and Schumacher (2014), the trustworthiness of the study is also known as the rigour of the study; this refers to the degree of confidence in data collection, data analysis or interpretation, and research methodologies used to ensure the quality of the research project.

1.9.1 Credibility

Credibility establishes whether the research findings are correct or not (Cresswell, 2014). The rationale for credibility in qualitative research is to help the researchers link their findings with reality. In this study, the researcher used member checking to establish the credibility of the findings. This exercise be done by permitting the selected interviewed teachers and learners to review interview scripts to judge the authenticity of the findings.

1.9.2 Transferability

According to Cresswell (2014), transferability means the degree to which the study findings can be transferred to other settings with other participants. The importance of transferability is to provide the reader with evidence that supports the findings. In this research, the readers will be provided with the methods and instruments used for data collection to ensure the transferability of the study findings to another context.

1.9.3 Dependability

According to McMillan and Schumacher (2014), dependability is used to create the constancy of the findings over a given period. Dependability is important as it justifies the stability of the research results. The researcher provides the reader with information about the study sites; this helps to welcome inquiry audits for the study findings.

1.9.4 Confirmability

Confirmability is defined as the degree to which other researchers could confirm the findings of the study in the field of study (Cresswell & Poth, 2017).

Confirmability helps the researcher provide procedures to re-check the study findings. This study achieved its confirmability by providing field records and compacted notes.

1.10 LIMITATIONS AND DELIMITATIONS OF THE STUDY

Study limitations refer to external factors that limit the scope of the study (Cresswell, 2014). The time allocated is limited for the scope of this study. McMillan and Schumacher (2014) confirm that the delimitation of the study obliges the researcher to determine the scope of his research project. These are the mechanisms that describe the boundaries of the study. The selected research site limits the scope of this research; The study was limited to interviewing only secondary school teachers and learners of the Shiluvane circuit, Limpopo Province.

1.11 ETHICAL CONSIDERATION

The researcher must show his understanding of research ethics and principles and reveal his approach to ethically conducting the study (Cresswell, 2014). According to Cresswell (2014), participants should not be subjected to any harm. The interview questions used as a data collection method for this study must be structured in such a way that it causes negligible psychological distress or compromises the dignity of the selected participants. For example, ask participants the following questions:

- In your opinion, what effects does the COVID-19 pandemic have on traditional face-to-face methods?
- What are your experiences with using ICT tools to conduct lessons during COVID-19?

Poth (2017) defines informed consent as one of the key research principles by which human study participants can enter voluntarily with full information and understanding about what it means for them to participate and that they give consent before participating in the research study. According to Cresswell (2014), informed consent is the process of informing potential study participants about the core components of research and what their participation will involve. The foundation of informed consent is to protect research participants and to teach and

monitor investigators so that they conduct proper research to ensure a high degree of ethical standards. The researcher for the study provided participants with informed consent forms in which it was explained that their participation in the study was voluntary. Participants were informed about the purpose of the study and the methods to be used. After describing all the research dynamics, participants receive forms to sign before the commencement of the study.

In research, a violation of privacy occurs when the researcher collects information without the participant's knowledge or consent (Cresswell, 2014). According to Poth (2017), a violation of privacy also occurs when the subject's participation in the study is published without their knowledge. Confidentiality refers to the agreement between potential study participants and the researcher through the informed consent process to ensure that the participant's identity, responses, and personal information will not be published unless otherwise agreed (Cresswell, 2014). According to McMillan and Schumacher (2014), anonymity is defined as the condition under which the names of the participants are not known to the researchers. Since human subject research studies require signed forms of consent, subject anonymity is not common in educational research (Maila, 2020). However, the protection of the privacy of the study participants must be safeguarded; it ensures that participants are kept safe from harm and embarrassment (McMillan & Schumacher, 2014). In this study, this be done by allocating all the study participants pseudonyms aimed at protecting their identities. For example, participants will be named T1, T2, T3, etc. Participants are also allowed to withdraw from the study if they wish, without any penalty.

1.12 CHAPTER DIVISION

This research proposal will be divided into five (5) chapters:

Chapter 1

This chapter presents the introduction, problem statement, study objectives, key concepts definitions, research paradigms, research design and methodology, sampling strategies, data collection and analysis procedures. Furthermore, the chapter also provides the significance of the study, limitations and delimitation, ethical considerations, and chapter division.

Chapter 2

Chapter 2, to be precise, presents the literature review related to the research topic.

Chapter 3

Chapter 3 focuses on the research design and methodologies that will be applied to the present study.

Chapter 4

Chapter 4 is known as data analysis and focusses on interpreting the collected data.

Chapter 5

Chapter 5, the study's final chapter, provides a summary of the study's findings, followed by recommendations and conclusions.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 1 provided an overview of the study's context and objectives. This chapter provides a review of the literature on the topic of teachers and learners' experiences with the use of ICTs for instructional and educational purposes during the COVID-19 Pandemic. The focus is on a case study conducted in two secondary schools located in the Shiluvane Circuit of the Mopani district. This study seeks to investigate the experiences of teachers and learners in two secondary schools within the Shiluvane Circuit, Mopani District, about the use of ICTs for educational purposes during the COVID-19 pandemic. The researcher intends to investigate the effects of COVID-19 on teaching and learning in secondary schools located in the Shiluvane district of the Mopani District of Limpopo Province. Adoption of ICT tools for educational purposes during the COVID-19 pandemic is a prominent topic of discussion, as indicated by the many research studies conducted on this matter. Adedoyin and Soykan (2020) examined the challenges and opportunities of using technology for instructional purposes during the COVID-19 Pandemic. The study's findings indicate that the COVID-19 pandemic had a detrimental effect on the education system, as it required the closure of educational institutions by governments throughout the world. The COVID-19 outbreak led to a shift from traditional personal education to virtual instruction in most educational institutions (World Health Organisation, 2020).

In mid-March 2020, President Cyril Ramaphosa of South Africa declared a state of disaster, leading to the closure of every institution of learning by the Disaster Management Act, Act 27 of 2002. The first case of COVID-19 in South Africa was reported on March 5, 2020, in Kwazulu-Natal. By 15 March 2020, there were approximately 1585 confirmed cases. President Cyril Ramaphosa declared a national state of disaster in terms of the Disaster Management Act and Regulations, Act 57 of 2002. The most important objective of declaring a state of disaster was to establish a comprehensive and coordinated system for managing disasters. This system focusses on prevention and mitigation efforts and involves various entities, such as national, provincial, and municipal entities, as well as statutory functionaries and other stakeholders involved in disaster management (Mahaye, 2020).

To continue with the process of teaching and learning, educational institutions had to switch from a traditional in-person delivery mode to one that uses technological learning platforms (Kallo, Mitchell & Kamalodeen, 2020). The sudden migration from traditional methods affected secondary teachers and learners negatively. For example, most of them were not prepared to use ICTs for instructional purposes. In the South African context, the Department of Basic Education (2021) aptly remarks that the pandemic forced schools to create a gap in teaching and learning as teachers depended on traditional teaching methods. Most teachers and learners were not technologically and academically ready for online learning. Furthermore, Internet connectivity and power supply became problematic as some areas where learners were found were not electrified. The Department of Basic Education (2020b) further reports that COVID-19 resulted in a learning content gap due to a revised school calendar, a trimmed curriculum and rotational attendance. The Department of Basic Education (2022) shows that the COVID-19 pandemic negatively affected the performance of Limpopo grade 12 learners since the province underperformed in the 2021 matric results. Importantly, the Department of Basic Education (2021) states that the COVID-19 pandemic forced schools to compromise learning progression standards.

2.2. THE EFFECTS OF THE COVID-19 PANDEMIC ON EDUCATION

The World Health Organisation (2020) abbreviated the coronavirus to COVID-19 in the following way: CO (rona) VI (rus) D (disease) (20) 19. Coronavirus, also known as COVID-19, is defined as a communicable disease arising from a severe acute respiratory syndrome caused by coronavirus two (2) and characterised by shortness of breath, fever, and coughing (World Health Organisation, 2019). At the beginning of the outbreak in 2019, COVID-19 was declared an epidemic. According to the World Health Organisation (2020), an epidemic is when a transmissible disease spreads quickly in a community in each period. It was regarded an epidemic because COVID-19 was mostly limited to China, but as it started spreading to other countries, it became a pandemic. A pandemic is when the outbreak of a disease spreads to almost all countries around the world (World Health Organisation, 2021). A pandemic has an undesirable effect on the general well-being of the people and results in a higher mortality rate than an epidemic. The World Health Organisation declared COVID-19 a failure

pandemic in 2020 when it was obvious that the disease was severe and spread very quickly across nations (World Bank, 2020).

The World Health Organisation (2020) convincingly stated that the COVID-19 pandemic was regarded as a health threat crisis, and as a result, educational institutions (schools, colleges, and universities) were temporarily closed before the pandemic as a mechanism for controlling and stopping the spread of COVID-19 and saving lives. The World Health Organisation (2020) COVID-19 pandemic guidelines propelled countries to prohibit large gatherings, and subsequently educational ministries around the world introduced rotational learning attendance in schools, which consequently led to trimmed curriculums, cancelled or postponed learning assessments (formal examinations), and knowledge gaps.

2.2.1 The COVID-19 Pandemic Led to the Closure of Institutions for Teaching and Learning around the World

The World Health Organisation (2020) confirms that the COVID-19 pandemic has put the normal functioning of teaching and learning processes on hold throughout the world. A report published by the World Health Organisation in 2021 on the negative effects of COVID-19 on schooling points out the negative impact COVID-19 had on vulnerable learners, such as learners with special needs and learners from deep rural areas who do not have sufficient ICT devices for eLearning; their education was completely jeopardised during the national lockdown when gatherings and school access were limited. The World Health Organisation officially announced the first coronavirus cases from two Chinese who became ill in Staycity Apartment hotels in York on January 31, 2020. The United Kingdom then closed all schools on March 20, 2020, in response to the outbreak of the COVID-19 pandemic (World Health Organisation, 2020).

The Republic of Zambia reported its first two cases of COVID-19 on March 18, 2020. The infected individuals were a couple who had recently travelled to France and Europe. On 18 March 2020, the Minister of Health announced the closure of all educational institutions in Zambia in response to the confirmed cases of COVID-19. On 5 March 2020, Dr. Zweli Mkhize, the Minister of Health in South Africa, officially announced the first confirmed case of COVID-19 in the Republic of South Africa. The patient, a man from Durban, tested positive for the virus after returning

from Italy to Europe. On 15 March 2020, South African President Cyril Ramaphosa declared a national state of disaster. In response, he implemented several measures, including temporary closure of schools from March 18, 2020, to April 14, 2020, and travel restrictions (World Health Organisation, 2021).

The previous reports by the World Health Organisation explicitly show that the COVID- 19 pandemic caught nations unprepared. Developed and developing countries were forced by circumstances to close schools and higher institutions as a mechanism to limit the spread of the COVID-19 pandemic. Governments around the world closed all educational institutions for teaching and learning; they were obliged to comply with the COVID-19 rules and regulations recommended by the World Health Organisation (World Health Organisation, 2020). Before the COVID-19 pandemic, there were travel restrictions in South Africa; people were forced to stay indoors; and teaching and learning stopped as teachers and learners could not meet in their classroom environments (Department of Basic Education, 2020b). Undoubtedly, the COVID-19 pandemic lockdown procedures prohibited teacher and learner interactions in schools in various countries, and disruption of traditional in-person instructions limited opportunities for schoolteachers and learners to conduct lessons. Amutha (2020) conducted a study about the role of ICTs in improving the quality of teaching and learning in South Africa. The findings of the Amutha study (2020) revealed that most schools established alternatives to continue the process of teaching and learning during school closures when the traditional classroom teaching method was not feasible, and those alternatives varied in their degree of success.

2.2.2 COVID-19 Led to Learner Rotational Attendance

The report of the Department of Basic Education (2021) indicates that on 19 19 May 2020, the Minister of Basic Education in South Africa, Angie Motshekga, announced the reopening of schools on 1 June 2020, following the National Coronavirus Command Council and the approval of the Cabinet of the Cabinet for learners to return to the classrooms. Following the cabinet's approval, the Department of Basic Education instructed schools to implement rotational learner attendance, either on alternate weeks or days, depending on the capacity of the school. According to the Department of Basic Education (2021), rotational

attendance of learners had adverse effects on education. This approach to learning-attendance significantly reduced the teaching and learning time available, as it reduced the anticipated number of days available for traditional face-to-face meetings.

to-face instruction to take place. The Limpopo Provincial Department of Education (2022) points out that the COVID-19 social distancing guidelines forced schools to implement learning rotational attendance, as they had inadequate classrooms to accommodate all learners at once. Due to the reduced traditional face-to-face instruction time, learners were exposed to trimmed and adjusted annual teaching and learning plans that did not cover all content requirements (Department of Basic Education, 2022). In the Republic of Zambia, secondary school learners attended classes on various occasions due to COVID-19 (United States Agency for International Development, 2020). The Zambian government reopened schools only for learners who were required to write the 2020 national examinations. The United Kingdom (UK) reopened schools on 29 June 2020, after the first closure in mid-March 2020 (World Health Organisation, 2021). The UK schools were open to learners from all year groups for limited times during the week, and the schools were forced to accommodate only one-third of the learners at any one time. Certainly, the COVID-19 pandemic propelled almost all governments across the world to implement learning rotational attendance as the mechanism for observing the social distancing of COVID-19 protocol.

2.2.3 COVID-19 Resulted in Learner Knowledge Gaps

The COVID-19 pandemic has affected children of all ages, but secondary schools are particularly affected, which is problematic (World Health Organisation, 2021). Bazoli, Marzadro, Schizzerotto and Vergolini (2022) conducted a study on learning gaps during COVID-19 in Italy and Europe. Their study findings revealed that the knowledge gap is certainly severe for learners attending secondary schools. To continue with the lessons during COVID-19, most countries switched to e-learning, and most of the learners in the Republic of Kenya experienced knowledge gaps because there was extremely little technological instruction due to equipment and resource shortages (World Health Organisation, 2020). The Department of Basic Education (2022) indicates that the South African 2021 matric class bore the

greatest brunt of the COVID-19 pandemic in comparison with the previous cohorts. The 2021 matriculation cohort encountered a reduced curriculum and rotational attendance, resulting in learning deficits and pre-existing knowledge gaps exacerbated by the COVID-19 pandemic. According to the Department of Basic Education (2022), the matric class of 2021 had to live with the harsh reality of COVID-19 for two successive academic years. The Limpopo Provincial Education (2022) report on the 2021 grade 12 results revealed that the interruption of traditional physical instruction due to the COVID-19 pandemic resulted in learning gaps because South Africa was largely unprepared to accommodate online learning methods and teachers were not professionally trained to use ICT devices. On the other hand, learners were not provided with the appropriate technological tools to implement eLearning.

2.2.4 COVID-19 led to the cancellation or postponement of formal examinations around the world

The World Health Organisation (2020) asserts that the COVID-19 pandemic caused serious disruptions in the assessment of learners throughout the world; In most countries, examinations were cancelled or postponed. In Japan, examinations were replaced by alternative modalities such as online examinations (World Health Organisation, 2021). Furthermore, COVID-19 led to the postponement and suspension of formal examinations, mainly in developing countries, as they faced insufficient facilities for digital learning, and this was exacerbated by poor network connectivity. As part of efforts to mitigate the transmission of the COVID-19 pandemic, the West African Examinations Council (WAEC) of the Republic of Nigeria decided to postpone the high school exams, as reported by the World Health Organisation (2020). Importantly, the Department of Basic Education (2022) disclosed that the 2021 matric cohort did not have experience writing grade 11 formal exams, as learners were assessed by the tasks that their teachers set at the school level (school-based assessments). It makes sense to conclude that the Department of Basic Education shifted the responsibility of setting the 2020 grade 11 assessments from their examiners to the secondary school teachers due to the differences in learner rotational attendance and curriculum coverage. Certainly, 2021 grade 12 learners were found to be unable to sit for formal examinations. Circular E15 of the Department of Basic Education of 2020 on combined May/June

and October/November final examinations states that COVID-19 forced the department to make amendments to the May / June schedule. According to the Department of Basic Education (2020d), considering the overwhelming number of candidates who write English as their home language (HL) and English as their first additional language (FAL), as well as

Mathematics and Mathematical literacy, which are typically written in one setting, and to account for social distancing, the following adjustments were made:

- The English FAL question paper was written in the morning session and the English HL question paper was written in the afternoon session.
- Mathematics was written in the morning, and mathematical literacy was written in the afternoon.

2.2.5 COVID-19 Pandemic Led to a rise in Teacher-Learner Absenteeism around the World

The World Health Organisation (2020) states that in the 2020 academic year, children with chronic illnesses were discouraged from attending school due to COVID-19. The World Health Organisation (2020) was of the view that children with diseases such as diabetes, asthma, cancer, or obesity were at higher risk of contracting COVID-19 and losing their lives than people without these health conditions. Teachers 60 years and older were advised to stay home and save lives, as their chances of getting COVID-19 were higher (World Health Organisation, 2020). Before the COVID-19 pandemic, the Department of Basic Education encouraged teachers and learners to stay home whenever they felt sick or to take care of a sick family member (Department of Basic Education, 2020b). Additionally, the government allowed teachers with comorbidities to work from home. Circular 1 of the Department of Basic Education in 2020 on COVID-19 management in schools indicates that teachers and learners were entitled to 14 days of sick leave when they tested positive for COVID-19. Undoubtedly, teachers and learners were absent from school because the COVID-19 pandemic forced the department to relax its attendance monitoring policy. In addition to school absenteeism caused by complying with COVID- 19 illness rules and regulations, a study conducted by Cordini and De Angelis (2021) on the impact of COVID-19 on education in Italy revealed that parents prevented their children from returning to school due to their

fear of COVID-19. Their study also argued that children could not be safe in the school environment as the country had the highest rate of infections on the European continent. Akseer and Jativa (2020) conducted research on the attendance of secondary school teachers during the COVID-19 pandemic in Rwanda. Their study findings show that teachers were absent from schools because they had to respond to various national initiatives for teacher training that took place during school time.

2.2.6 COVID-19 Forced the Government to Compromise Progression Standards in Schools.

COVID-19 disruptions (school closures, rotational attendance, and postponed examinations) resulted in the government making the impulsive choice of giving learners in grades four (4) to nine (9) a marked adjustment of up to five percentage points (5%) as part of its efforts to help primary and secondary school learners pass their final examinations in the 2020 academic year (Department of Basic Education, 2020a). The 7th Annual National Assessment Policy Circular issued by the Department of Basic Education to schools specifies that a marked adjustment of up to 5% is permitted in a maximum of three subjects and, thereafter, a further condonation in mathematics is considered. The government also sent Circular S7 of 2020 on revised progression requirements for grades 10 to 11, which increased the weighting of school-based assessments from 25% to 60% and decreased the weighting of the final examinations from 75% to 40% to boost academic performance among secondary school learners and compromise progression standards.

2.2.7 COVID-19 Disrupted Classroom Cooperative Learning

To understand how the cooperative learning approach in the classroom was disrupted during the COVID-19 pandemic, the researcher will first define the terminology of cooperative learning and then explain how COVID-19 regulations affected this learning and teaching style. Cooperative learning is an instructional approach in which learners are assigned to small groups so that they work together to maximise the learning experience of each other and comprehension of the subject (Department of Basic Education, 2020a). In the cooperative learning method, the learners share responsibility for the results of their groups. The role of

the teacher in cooperative learning is to assign a task with clear instructions to their learners. According to the Department of Basic Education (2020b), the cooperative learning instructional method is important for the following reasons:

- To improve learners' skills by teaching them how to communicate or deal with conflict situations.
- To increase academic achievement.
- To boost the confidence of learners as they realise that they are essential for the success of a group.
- To stimulate critical thinking, as learners talk to each other in the group, they hear differing opinions and thoughts.
- Encourage learners to participate actively in the lesson.

The World Health Organisation (2020) reports Denmark as the first European country to reopen schools after the first closure due to the COVID-19 pandemic, allowing districts to reopen schools on April 15, 2020, only for children under the age of 12 (12), while the older ones continued with online learning at home. Denmark's COVID- 19 schools guidelines required learners to maintain six feet (two metres) of separation in class and proposed that classes be divided into more stable groups (World Health Organisation, 2020). Certainly, learners could not form study teams to share skills and ideas because proximity between people in the school was abolished. The Cameroon Department of Education reopened schools on 15 June 2020, for all learners (World Health Organisation, 2020). Some mechanisms introduced by Cameroon include having fewer than twenty-four (24) learners per classroom and only one learner sitting at the desk instead of the usual four. This means that learners were not even allowed to sit in groups to share teaching and learning resources. Therefore, cooperative classroom learning was not possible.

The Department of Basic Education (2020b) compiled a document on COVID-19 orientation guidelines, whose purpose was to prepare schools, teachers and learners for the safe reopening of schools on June 1, 2020, with learners in grades 7 and 12 returning to the classroom for instructions. According to the report by the Department of Basic Education (2020b), schools were instructed to implement a

seating arrangement that complies with the 1.5 metre (m) social distancing requirement of 1.5 metres (m) in their classes as a risk reduction method. The Department of Basic Education (2020b) further indicates that teachers and learners were not allowed to sit in groups. Based on the above risk reduction methods used by educational ministries all over the world, it is obvious that learners were prohibited from assisting each other to master the content using cooperative learning in the classroom due to the rules and regulations of COVID-19 pandemic schools.

2.3 TEACHER AND LEARNER EXPERIENCES OF USING ICTS FOR EDUCATIONAL PURPOSES DURING THE COVID-19 PANDEMIC

This part looks at the experiences of teachers and learners in using ICTs for educational purposes during the COVID-19 pandemic. Before going into these experiences, the researcher provides a comprehensive definition of two vital terms in this study. ICT in education and online learning. According to the World Bank (2020), ICTs in education contain a multitude of interconnected technologies, including software, hardware, and telecommunications applications. These technologies facilitate communication in the context of teaching, learning, and scientific research. Adarkwah (2020) defines ICT in education as the use of information and communication technologies to strengthen the mode of delivery of teaching and learning approaches. The primary focus of ICTs in education is on the technology used to facilitate the exchange of information between teachers and learners. The use of ICTs in the realm of education aims to enhance the academic achievements of learners (Department of Basic Education, 2021). Online learning, often referred to as "e-learning" or "electronic learning," encompasses educational practises facilitated through online platforms, including, but not limited to, Google Classroom and Google Sites (World Bank, 2020). Online learning, as defined by the Department of Basic Education (2020b), refers to an instructional methodology in which learners acquire knowledge and skills through the application of the Internet. Online learning is a pedagogical approach in which teachers and learners engage in instructional activities through multimedia and online platforms.

According to Amutha (2020), the use of ICTs for teaching and learning during the COVID-19 pandemic is not universally applicable to all teachers and learners. Instead, it depends on contextual factors. In a similar disposition, Adarkwah (2020)

affirms that the implementation of ICTs to increase teaching and learning during the COVID-19 pandemic resulted in both advantages and limitations for teachers and learners alike. According to the Department of Basic Education (2021), teachers were promptly assigned the task of implementing online teaching methods in the absence of adequate supervision and ICT instruments, before the onset of the COVID-19 pandemic. Teachers were generally ill-equipped to transition to online teaching methods due to many factors. According to the Department of Higher Education and Training (2020), the adoption of ICTs has facilitated the ability to engage in learning at any given time and location. This has become particularly relevant during COVID-19, as numerous higher education institutions have adopted online learning methodologies for instructional delivery.

2.3.1 Benefits and constraints of using ICTs for teaching and learning during COVID-19 PANDEMIC

Spitzer and Musslick (2021) conducted a study on the academic performance of kindergarten through 12th grade (K–12) in an online learning context during school closure in Germany and Europe. The study results found that the use of digital learning during school closures improved the academic performance of the learners. Understandably, learners had enough time at home to use digital tools during school closures, and their maximum participation on the digital learning platform improved their academic performance. It may be that most of the learners are addicted to the use of ICT devices (Spitzer and Musslick, 2021). Carlos, Manuel and Juan (2021) conducted a qualitative study in Spain in which they analysed the use of online learning during the COVID-19 pandemic. Their findings disclosed that ICTs motivate learners to participate in the learning process. Furthermore, their study also found that teachers and learners benefited from using online discussion forums during school closures. Furthermore, their study revealed that the use of ICTs for teaching and learning provides teachers with the opportunity to access valuable online learning resources. Significantly, the report on the COVID-19 pandemic and schooling from the Department of Basic Education (2020c) indicates that the department used its official website to support teaching and learning during COVID-19 by providing teachers with revised annual teaching plans (ATP), revision booklets, and adjusted school calendar.

Pakistan researchers Mukhtar, Javed, Arooj, and Sethi (2020) authored an article on the advantages, limitations, and recommendations for online learning during the COVID-19 pandemic era. Their study found that online learning during the COVID-19 pandemic was satisfactory, as teachers and learners were able to work harmoniously following instructions and prescribed policies. Their study also revealed that the establishment of technological learning offers more opportunities than constraints, since teachers and learners were able to use computers and other ICT devices to conduct lessons during COVID-19. Again, in Pakistan, Muhammad and Kainat (2020) conducted a study on learners' experiences with online learning amid COVID-19. Mohammad and Kainat (2020) found weak signal strengths as the main contributor to limited internet connectivity. They further argued that the learners were unable to complete group tasks due to the poor signal strengths surrounding them. Zheng, Bender, and Lyon (2020) researched COVID-19 and online education. The findings of their study show that the learners were satisfied with online learning and are willing to continue with this instructional method after COVID-19. Arisudhana and Adi (2021) conducted a study on the perspectives of learners on electronic learning and the COVID-19 pandemic in Indonesia and Asia. Their results show that online learning was successfully initiated in terms of technical factors. Their study findings further revealed that learners are willing to learn on the Internet in the future. Surely, learners were optimistic about the implementation of online learning as an instructional mode and, understandably, they have the basic skills needed for this learning style.

According to Amutha (2020), the South African Basic Education Ministry embraced online learning by using educational television and radio programmes to support matric learners. Amutha (2020) claims that the Department supported learners through educational television and radio programmes, but the findings of Amutha's study (2020) were unclear about the learners’ experiences of using television and radio stations to conduct lessons during the COVID-19 pandemic. The Department of Basic Education (2020c) states that the Geleza Nathi educational television programme on South African Broadcasting Corporation 1 (SABC 1) supported grade 10 to 12 secondary school learners during the COVID-19 pandemic with the knowledge and skills to pass their exams on six subjects, namely: Accounting, Business Studies, Economics, English as a First Additional Language (FAL),

Geography, History, Life Sciences, Mathematics, and Physical Sciences. The report on 2021 matric results from the Limpopo Provincial Department of Education (2022) points out that the COVID-19 pandemic forced the Department of Basic Education to launch a complementary WhatsApp portal to provide teachers with teaching and learning materials and information about the COVID-19 pandemic. It must be recognised that the technological teaching approach allowed secondary school teachers to share exam tips with their learners during COVID-19.

Research was carried out by the World Health Organisation (2020) to examine the effects of the COVID-19 pandemic on the educational sector in Japan. The findings of the study World Health Organisation (2020) revealed that temporary school closure caused by the COVID-19 pandemic led to a huge disparity in the learning process between public and private schools due to the shortage of digital devices. The World Health Organisation report (2020) further revealed that private school learners were privileged to conduct their lessons through online delivery mode, while public secondary school learners were unable to learn using online classes, resulting in learning gaps between private and public secondary school learners. Qekaj-Thaqi and Thaqi (2021) conducted research on the importance of ICTs within the COVID-19 pandemic in Switzerland and Europe. The findings of their study revealed that private schools have more ICT advantages than public schools. Qekaj-Thaqi and Thaqi (2021) argue that private schools are well prepared for online education and have used effective online discussion platforms such as Google Forms and Google Meet. Zinyemba, Nhongo and Zinyemba (2021) conducted a study on COVID-19- induced online learning in the Republic of Zimbabwe. Their findings revealed that teachers and learners in most public institutions could not use eLearning during school closures due to COVID-19. The findings of their study further revealed that teachers and learners in private institutions conducted lessons using online learning delivery modes, but experienced countless challenges, as the Republic of Zimbabwe was not well prepared to embrace online learning. In a recent study by Sibanda and Mathwasa (2021) in Zimbabwe, the authors examined the perspectives of secondary school teachers and learners about the effects of the COVID-19 pandemic on rural learners in the Matombo district of Zimbabwe. The results of their study revealed that most learners in rural secondary schools were excluded from online learning

amid COVID-19 due to lack of electricity supply and poor network connectivity.

A study conducted in Ghana by Adarkwah (2020) on digital teaching during COVID-19 revealed that the use of online teaching excludes rural teachers and learners from education due to inadequate ICT resources and technical challenges. Remote learning excluded rural school learners from education, as children in rural areas do not have televisions or other ICT devices (World Health Organisation, 2020). Adarkwah (2020) argues that online learning worked effectively for private secondary school learners, since most private schools started using e-learning modes before the start of COVID-19. Similarly, the United States Agency for International Development

Development (2021) states that Zambian private secondary school learners continued their lessons during COVID-19 because they had better facilities to implement the online learning method. It should be noted that not all secondary school teachers and learners optimally reap the benefits of using ICT tools amid COVID-19 due to the surrounding challenges. According to the Department of Basic Education (2020c), most rural and peri-urban South African schools have a shortage of technological resources, such as computer labs. The Department of Basic Education (2020b) points out that with little or no experience using ICT devices, teachers and learners had to adopt technological teaching while learning how to use ICT tools during the COVID-19 pandemic.

Wahab (2020) researched the effects of online learning on higher education in Canada and the United States. According to Wahab (2020), the COVID-19 pandemic led higher education institutions to employ technological delivery methods. According to Wahab (2020), the readiness of learners is a crucial factor in ICT-integrated learning, in addition to the availability of digital tools. According to the Department of Basic Education (2020b), before the COVID-19 pandemic, a substantial number of South African teachers lacked comprehensive formal technology training. This training was necessary to improve blended teaching and learning methods, as well as to effectively implement online learning. According to Wahab (2020) and the Department of Basic Education (2020b), teachers did not have the necessary preparation to deliver online lessons during the COVID-19 pandemic. The closure of schools by the Ministry of Basic Education in response to COVID-19 led to teachers implementing innovative teaching methods to

maintain the continuity of education (Department of Basic Education, 2021). The government implemented emergency online strategies to facilitate teaching and learning during the COVID-19 pandemic, despite teachers and learners not being prepared to use ICT tools for instructional purposes (Amutha, 2020).

Jesuiya and Priyandarshani (2021) conducted a study on teachers' perceptions of the online teaching method during COVID-19 in Sri Lanka. The results of their study show that learners were happy with online learning, but they are still not convinced that traditional teaching methods will be replaced by online learning. The findings of Jesuiya and Priyadarshini (2021) further revealed that teachers experienced challenges due to poor network connectivity and were not completely prepared for online classes. Li, Zhang, Liu, and Tong (2022) investigated the effects of the use of technological instruction during COVID-19 in China and Asia. Their research study found that most learners were exposed to electronic learning. The results of their study also show that teachers have little or no experience with e-learning. Panos-Castro, Arruti, and Korres (2022) authored an article on COVID-19 and ICT in education in Spain and Europe. Their study results show that most teachers lack ICT workshops or guidance. Their study also found that teachers have taught themselves ICT skills and that they have shown interest in lifelong learning through programmes such as Google Classroom and Google Sites. Kallo, Mitchell, and Kamalodeen (2020) conducted a study on challenges and opportunities when responding to the COVID-19 pandemic in Trinidad. The results of their study show that the learners were struggling to adjust to online learning. Furthermore, the findings of Kallo, Mitchell, and Kamalodeen (2020) revealed that teachers were not properly trained to teach using technology as a delivery system. Kulal and Nayak (2020) investigated the perceptions of teachers and learners toward online classes in India. The results of the study by Kulal and Nayak (2020) revealed that teachers found it difficult to conduct online learning due to a lack of appropriate training and development to conduct online classes. There is no doubt that a lack of training made it difficult for teachers to conduct lessons with their learners during the COVID-19 pandemic.

Preeti (2020) conducted a study on the effects of the COVID-19 pandemic on education. According to Preeti's findings in 2020, the COVID-19 pandemic led to a shift in teaching and learning methods from offline to online. This change in

teaching modes resulted in numerous challenges for both learners and teachers. The transition from traditional to online learning has significantly impacted the global education sector (World Health Organisation, 2020). Mpungose (2021) investigated the shift from traditional classroom instruction to online learning in South Africa. According to Mpungose (2021), digital learning posed challenges to learners' learning, as many learners did not meet the curriculum's expectations of timely submission of tasks through online discussion platforms. Many learners were only familiar with traditional teaching methods. The introduction of online learning without proper training negatively affected their performance as they were unable to submit assessments on time. Mahyoob (2020) conducted a study on the challenges faced by Saudi Arabian learners during online learning amidst the COVID-19 pandemic. Technical Issues were identified as the primary factor affecting eLearning during the COVID-19 pandemic. Mahyoob (2021) found that learners expressed dissatisfaction with online learning due to limited access to reliable internet connectivity and the insufficient availability of ICT tools, which hindered their ability to achieve optimal learning outcomes.

According to Mpungose (2021), South African learners lacked training in the use of online discussion forums. On the other hand, Mahyoob (2020) argues that learners experienced a shortage of technological tools. Insufficient training, limited digital resources, and inadequate connectivity have a detrimental impact on the effectiveness of online learning. Maila (2020) conducted a study on ICT barriers and challenges during COVID-19. The study found that the use of ICTs for teaching and learning during the COVID-19 pandemic caused network problems for most learners. According to Maila (2020), the integration of ICTs in classrooms may prove ineffective because learners become distracted and use the Internet for personal purposes. In a study conducted by Lisa, Suzanna and Kathryn (2021), the researchers examined teachers' concerns about the effects of COVID-19 on learners in England. The study revealed that teachers faced challenges in adapting to the new educational format and determining the most effective methods to instruct and engage learners in the COVID-19 pandemic. Ogbonnaya, Awoniyi, and Matabane (2020) investigated teachers' perspectives on the transition to online learning in Ghana during the COVID-19 pandemic. The study indicates that teachers encountered challenges related to inadequate technical connectivity and

a shortage of appropriate ICT devices to implement online learning. Joseph, Paras, Lhyza, Trizhia and Joselle (2021) conducted a study on the experiences of public-school teachers in the Philippines during the COVID-19 pandemic. The study findings indicate that a lack of resources for online learning poses significant challenges for most teachers. Makafa and Masopha (2021) conducted a study on challenges in e-learning in Lesotho.

The study revealed that teachers did not provide enough support to facilitate teaching and learning. The study also found that insufficient digital devices and inadequate network connectivity hindered teachers' ability to teach effectively at a transactional distance. Konig, Biela, and Glutsch (2020) investigated the adaptation strategies used in Germany to facilitate online teaching during school closures caused by the COVID-19 pandemic. Research findings indicated that teachers had to work with them. Transition from traditional in-person teaching methods to online teaching. This required the use of various digital tools and resources to address challenges and introduce innovative teaching and learning approaches. The rapid adoption of online learning during emergencies posed challenges for many teachers who lacked computer literacy and lived in areas with limited network coverage.

2.3.2 Benefits of Using the Blended Learning Method During the COVID-19 Pandemic

The use of ICTs in education during lockdown became a priority for many governments, including the South African Education Department, as they allowed learners to continue with their lessons during school closures caused by COVID-19. Myriad studies exposed that technological teaching in many countries was met with distinct challenges, including poor attendance by learners. Countries around the world have adopted blended learning to improve their education sectors (World Health Organisation, 2021). Blended learning, also known as "hybrid learning," is a method of teaching and learning that mixes technological and digital delivery modes with traditional face-to-face teaching (Department of Basic Education, 2020c). Blended learning is defined as the process of employing both online and face-to-face learning experiences when teaching learners (World Bank, 2020). Importantly, Carlos, Manuel, and Juan (2020) declare that online learning should

be used simultaneously with traditional teaching methods (blended learning).

Rasmitadila, Rachmadtullah, Marianus, Megan, Rusi, Achmad, and Muhammad (2020) conducted a study on the use of blended learning with MOODLE. Their study revealed that the COVID-19 pandemic caught most teachers off guard because most of them rely on traditional classroom methods and were unable to use computers and online platforms to support teaching and learning. Rasmitadila, Rachmadtullah, Marianus, Megan, Rusi, Achmad, and Muhammad (2020) recommend teachers use blended learning to accommodate learners from disadvantaged home backgrounds who do not have ICT tools to embrace online learning methods. Mndende (2020) states that many countries used blended learning before COVID-19, and the government was forced to opt for blended learning to address the learning gaps emanating from the hard lockdown experienced in the 2020 academic year. According to the Department of Basic Education (2021), blended learning allows learners to learn acquire knowledge from both online and traditional teaching; this implies that the time wasted during hard lockdown can be recovered by using ICT resources such as listening to recordings and watching live sessions. Blended learning is beneficial because it allows the learning process to be organised in a manner that suits both modes of teaching and because it allows learning to continue undisturbed (World Health Organisation, 2020). Mndende (2020) argued that blended learning in South Africa can work in a manner that leads to some degree of frugality. For example, learners who use transportation to go to school daily can now save money and attend classes when necessary.

Monareng, Ramraj, and Mashau (2020) conducted research on the increase in digital learning in South African schools due to the coronavirus. Their study revealed that COVID-19 presents a chance for the education sector to improve an integrated method that supports blended learning. Significantly, Monareng, Ramraj and Mashau (2020) further posit that, while the Department of Basic Education is promoting eLearning as the only alternative during COVID-19, this approach excludes learners from rural areas from education due to a shortage of resources to connect to the Internet and low-tech software. The Limpopo Department of Education (2022) points out that teachers conducted lessons using rotational attendance of learners simultaneously with online learning by sending Web links to

learners to access previous question papers and marking guidelines for exam practice purposes. According to Maila (2020), the South African education ministry is working harder in the circumstances of COVID-19 to encourage schools to embrace both traditional physical teaching and technological delivery modes. It is obvious that blended learning is the most suitable approach during COVID-19 and can be successfully implemented if South Africa addresses the surrounding challenges.

2.3.3 Potentials of ICTs for Teaching and Learning During the COVID-19 Pandemic

Despite encountering significant obstacles, teachers, learners, schools, and the government have faced numerous challenges in the realm of online teaching and learning. However, COVID-19 has also presented a range of opportunities for those who were not prepared and has prompted the development of future strategies for the implementation of online education (World Bank, 2021). The study conducted by Pokhrel and Roshan (2021) in Bhutan, a country in South Asia, discovered that social media platforms, specifically WhatsApp and Telegram, have the potential to be used beyond the remote learning period. These platforms offer learners access to study materials and guidance even after they have resumed classroom instruction in person. Within the specific context of South Africa, the adoption of ICTs can be examined as a potential tool to encourage motivation among learners.

According to the Department of Basic Education (2020c), a significant proportion of secondary school learners exhibit addictive behaviours toward smartphones. Consequently, implementing an online learning approach would be advantageous for this demographic. The Limpopo Provincial Department of Education (2022) asserts that the integration of ICTs into the educational process amidst the COVID-19 pandemic holds promise for fostering technological proficiency among learners. This approach enables learners to engage in unique learning experiences, departing from the conventional classroom-based instructional approach. In a recent publication by the World Bank (2020) on ICT education in Africa, it was revealed that the integration of ICTs in educational practice is crucial. This integration holds the promise of equipping and fostering the development of children with fundamental digital competencies that can be used in various

domains in contemporary society. In the current era characterised by rapid technological advancements, it is reasonable to argue that online learning represents the most suitable instructional approach for individuals seeking to adapt to this technologically driven environment.

The Department of Basic Education (2022) has noted that the use of ICTs in the field of education amidst the COVID-19 pandemic has forced teachers to develop effective strategies that can effectively address the potential challenges associated with e-learning approaches in the future. The implementation of online learning throughout the COVID-19 pandemic has the ability to foster collaborative efforts among teachers, improving their pedagogical encounters (World Health Organisation, 2021). The Department of Basic Education (2020d) asserts that team teaching offers numerous opportunities, including mutual learning among teachers and enhanced problem-solving capabilities. Certainly, the use of ICTs in the realm of education holds significant promise in facilitating the acquisition and dissemination of content knowledge among teachers, thus enhancing their professional growth.

The study by Mafenya (2021) examined the phenomenon of teacher-learner migration from traditional face-to-face instruction to an online delivery method in the context of COVID-19. According to the findings of Mafenya (2021), technology exhibits the ability to mitigate the transactional distance that is present both between lecturers and learners, as well as between learners and the educational institution. The significance of online learning in higher institutions during the COVID-19 lockout is evident. In their research, Mhlanga and Moloi (2020) investigated the impact of COVID-19 on the digitalisation of educational practices. The findings of their study indicate that the South African government actively promoted the integration of ICT technologies within the educational sector to facilitate the delivery of classes amid the COVID-19 pandemic. Additionally, the findings of their study indicate that South Africa has the capacity to transition from conventional pedagogical approaches to technologically mediated instructional methods. It is evident that educational institutions globally have recognised the potential of integrating ICTs into their pedagogical practices. Due to the COVID-19 pandemic, nations around the world have adopted online modalities as a means of facilitating educational processes, due to the inherent flexibility they offer in allowing teaching

and learning activities.

2.4 THEORETICAL FRAMEWORK GUIDING THE STUDY

The present study used connectivism as its theoretical framework. According to Siemens (2017), connectivism is a philosophical framework that provides insight into the learning process in the context of the digital era. connectivism as a theoretical framework posits that learning is a networked experience influenced by the integration of technology in the realm of education (Amineh, 2015). To promote connectivism, it is essential to recognise that learning extends beyond the mere internalisation of knowledge and experiences. According to Siemens (2013), the learning process is facilitated by our ability to establish connections with external networks. The premise of connectivism is based on the terminology of nodes and links to elucidate the process of acquiring and establishing connections between information within networks (Siemens, 2017). According to Amineh (2015), learners are commonly referred to as nodes within the network framework of connectivism theory. A node is formally defined as an entity, such as a webpage or an individual (Siemens, 2013). In connectivism, learning takes place when individuals establish connections or links between different nodes of information, and these connections are continuously established and maintained to develop knowledge (Siemens, 2017). connectivism is a learning theory that has been developed based on learning theories. It posits that the advancement of technology is significantly influencing the learning process (Siemens, 2013). According to the research conducted by Amineh (2015), Siemens (2005) identified a set of eight fundamental principles of connectivism:

- Learning and knowledge are influenced by the variety of viewpoints available on various websites and databases.
- The process of connecting specialised nodes or information is known as learning in connectivism theory.
- The ability to learn more than what is currently known from available sources is key.
- Learning can occur in nonhuman appliances (technological devices). For example, computers, smartphones, and web browsers.

- Connections must be nurtured and maintained to facilitate continuous learning.
- A key skill is the ability to see connections between fields, ideas, and concepts.
- The goal of all connectivist learning activities is to provide accurate and up-to-date knowledge and

The learning process involves making decisions. The choice of what to learn and the meaning of that knowledge are viewed through the lens of a changing reality. Although there is a correct answer now, it may not be correct in the future due to changes in the information environment that influence the decision to learn (Siemens, 2017).

The current theoretical framework was chosen due to its reliance on technological devices to enhance the process of teaching and learning. During the period of school closures resulting from the COVID-19 pandemic, teachers implemented various social media platforms, including WhatsApp groups and Facebook pages, to efficiently disseminate information, facilitate meaningful dialogue, and communicate home- based learning activities. Adoption of ICTs for teaching and learning has shown a notable improvement in learning class participation and facilitated effective communication channels between teachers and learners (DBE, 2021). connectivism learning theory has proven to be advantageous for teachers as well as learners, as it has facilitated the adoption of an online cooperative learning methodology. Learning occurs when individuals are interconnected and collaborate harmoniously to exchange points of view, opinions, and ideas, as exemplified by peer interactions. Connectivism also enables a collective to establish the legitimacy of their actions, facilitating the rapid dissemination of knowledge across various communities (Siemens, 2013). connectivism promotes the use of online learning approaches, thus encouraging secondary school teachers as well as learners to establish connections and facilitate lessons from a transactional distance. According to connectivism theory, teachers assign learners responsibility for their learning (Amineh, 2015). This suggests that learners are responsible for generating their own learning experiences. The primary responsibility of the teacher is to establish and nurture learning environments, support collaborative communities, and create meaningful learning environments

for learners (Siemens, 2013).

Adopting a connectivist perspective enables both teachers and learners to actively participate in the teaching and learning experience at any given time and location. In summary, connectivism places a clear emphasis on human interactions and the application of ICT tools to construct and interpret a person's understanding of the world. The present study has selected connectivism as its theoretical framework. because it is aligned with the approach that encourages teachers and learners to use ICT as a delivery tool in teaching and learning (Adarkwah, 2020).

2.5 CONCLUSION

The objective of this review of the literature is to provide readers with a comprehensive understanding of the experiences of teachers and learners using ICTs for educational purposes in the context of COVID-19. The findings of this literature study indicate that there are distinct variations in the experiences of teachers and learners in the context of online teaching and learning. The evaluation of the literature yields the conclusion that the implementation of ICTs for educational purposes during COVID-19 is of utmost importance. Multiple investigations have shown that the level of effectiveness in using ICTs for educational purposes during the COVID-19 pandemic is contingent on the preparedness of both teachers and learners, the quality of network connectivity, and the accessibility of ICT resources. This study aims to make a scholarly contribution to the existing literature on the use of ICTs in the field of education during the global COVID-19 pandemic. The researcher hopes to shed light on the advantages associated with the adoption of online learning methodologies during this unprecedented crisis. The theory of connectivism posits a correlation between network connectivity, the use of ICTs, and their impact on the process. of teaching and learning. This study will use the theoretical framework of connectivism of connectivism to examine the advantages, limitations and possibilities of ICT in the context of educational instruction and acquisition during the COVID-19 pandemic. The study revealed many issues that impeded the efficacy of online learning in secondary schools. In addition, it sheds light on the potential benefits of using ICTs for educational purposes in the middle of the COVID-19 pandemic.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

An overview of research design and methods was briefly discussed in Chapter 1. Chapter 2 presented a comprehensive literature review on the experiences of teachers and learners in using ICTs for educational purposes during the COVID-19 pandemic. Additionally, a literature review was conducted to establish the theoretical and operational definitions of the study based on the insights and experiences shared by other scholars in the field. This chapter, Chapter 3 to be precise, provides a detailed overview of the research design and methodology used to conduct the study. First, the researcher clarified the philosophical framework (paradigm) that served as the foundation for the study. This was followed by a comprehensive explanation of the research design and methodology. The chapter then discusses data analysis, ethical considerations and the trustworthiness of the study. The research design and methodology employed were intended to address the following research questions.

Main Research Question

What are the experiences, opportunities, challenges, and potential of using ICTs for teaching and learning during the COVID-19 pandemic according to teachers and learners?

Sub-questions

- What are the experiences of teachers and learners of using ICTs for teaching and learning during the COVID-19 pandemic?
- What are the opportunities and challenges associated with the use of ICTs for teaching and learning during the COVID-19 pandemic?
- What potential do ICTs have to make teaching and learning possible during the COVID-19 pandemic?

The research questions assisted the researcher in achieving the following objectives:

- To explore the experiences of teachers and learners of using ICTs for teaching and learning during COVID-19 in two secondary schools of the Shiluvane Circuit, Mopani District.

- To discover the effects of COVID-19 on teaching and learning in secondary schools in the Shiluvane Circuit in the Mopani district.
- Explore the potential of ICTs to improve teaching and learning in secondary schools.

3.1 RESEARCH PARADIGM

A paradigm is essentially a worldview, a whole framework of beliefs, values, and methods within which research takes place (Creswell, 2014). A research paradigm serves as a blueprint, particularly when conducting research (Smith, 2015). The current study employed an interpretive paradigm, which underscores the significant involvement of individuals or study subjects (Maree, 2018). The interpretivism paradigm was suitable for this study since it used the meanings that teachers and learners gave to the adoption of ICTs for lesson delivery during the COVID-19 pandemic.

3.2 RESEARCH APPROACH

The research approach encompasses the abilities, presumptions, and methodologies that a researcher employs when transitioning from the theoretical framework to the practical realm (Maree, 2018). In this study, the researcher opted for a qualitative approach because it allowed for the collection of firsthand information and comprehension on the use of ICT in instructing learners during the COVID-19 pandemic. The researcher chose this research approach because it allows for the incorporation of diverse perspectives on the topic under investigation, and it aims to visually represent, and analyses interactions based on the interpretations provided by participating teachers and learners. The researcher adopted Siemens' connectivism theory as the theoretical framework to investigate the application of ICT in education. Connectivism was chosen as it provides a comprehensive and contextual approach for qualitative research and interpretation. This is a qualitative analytical approach that focuses on studying human activities and interactions. The current study examines the relationship between teachers and ICT instruments in secondary learners' teaching and learning processes. It views the incorporation of technology as a means of facilitating social activity. As a

result, it was appropriate for the study to strengthen many aspects of the research, including analysis. Researchers using a qualitative approach collect data by engaging with selected people in their specific environment (McMillan & Schumacher, 2014). Creswell (2014) defines a qualitative approach as a means of comprehension in which the researcher examines language and presents comprehensive perspectives from participants within the authentic context of the study. The implementation of a qualitative approach in the current study yielded advantageous results. The researcher should conduct an inquiry into and engage in a discourse on the function and use of ICTs in education

3.3 RESEARCH DESIGN

This section presents the research design used in the study. The research design refers to the strategic selection of research methodologies and approaches used by a researcher to conduct a study (Gupta & Gupta, 2022). According to Cresswell (2014), research design refers to the comprehensive plan or strategy that directs the study from its inception to the final phases of data analysis. The present study used a qualitative-interpretive research design. This approach was chosen because the researcher wanted to gain a deeper understanding of the experiences of the participants within their authentic contexts of the phenomenon being investigated. Furthermore, the study aims to enhance these experiences by collecting and analysing verbal expressions as articulated by participants.

In the realm of qualitative research, typical research designs include case studies, ethnographic, phenomenological, and grounded theory (Maree, 2016). Poth (2017) defines a case study design as a research method that involves conducting a thorough examination of a specific case or a limited number of cases to gain a comprehensive understanding of a phenomenon within its actual environment. This approach allowed for a comprehensive examination of various perspectives, allowing the identification of patterns and the generation of valuable insights (Smith, 2015). The case study served to investigate a variety of factors that impact the effectiveness of online learning in secondary schools amidst the COVID-19 pandemic.

The researcher also adopted an interpretive research paradigm, which is embedded within a qualitative research design. Interpretivism is a philosophical framework

that assists researchers in interpreting various aspects of their lived experiences. It is associated with the philosophy of idealism. Therefore, it can be argued that reality is a phenomenon that is constructed through social processes (Smith, 2015). Interpretivism is commonly referred to as constructivism due to its emphasis on the individual's ability to construct meaning (Maree, 2018).

3.4 RESEARCH METHODOLOGY

Research methodologies are defined as systematic methods and procedures that are used to conduct research, collect and analyse data (Poth, 2017). This section discusses the study population, sample and sampling procedures, data collection and data analysis methods that were used to conduct the study.

3.4.1 Study Population

According to Smith (2015), the term population denotes the complete collection of individuals possessing characteristics, while a sample is a portion derived from the population. The study population for this research was 2 (two) school managers, eight departmental heads, ten teachers, and 10 learners. The current study population was chosen because, during COVID-19, teachers collaborated personally with learners and used ICTs to teach. The research was carried out in two secondary schools within the Shiluvane circuit. The circuit is situated on the eastern side of the town of Tzaneen within the rural areas of Mohlaba and Maake in the Limpopo province of South Africa.

3.4.2 Sample and Sampling Procedure

The researcher used objective sampling to select study participants. According to Maree (2018), purposive sampling is a nonprobability method used to select study participants based on specific characteristics that are necessary for addressing the research questions and achieving the objectives of the study. According to rngreen and Levinson (2017), prospective sampling, also known as judgemental sampling, is a research technique that relies on the judgment of the researcher to identify and select study participants and cases that can provide the most relevant data to achieve the objectives of the study. The use of a purpose sampling strategy allowed the researcher to select teachers and learners who would provide a wealth of relevant data for the study (Cresswell, 2014). The inference suggests that the study

participants were selected based on their knowledge of the implementation of online learning during the COVID-19 pandemic.

For this study, the researcher carefully chose a sample of ten (10) teachers from the two public secondary schools within the Shiluvane Circuit. Among the ten teachers who were selected, six of them were classified as senior teachers, while the remaining four were classified as junior teachers. Senior teachers refer to people who occupying a room. positions at levels 2, 3, and 4, namely Departmental Heads (DHs), Deputy Principals, and School Managers. They possess the expertise and knowledge necessary to provide guidance and support to less experienced teachers, specifically those at post- level 1 (Gutman, 2021). Teachers' work experiences and positions played a crucial role in addressing the challenges posed by the COVID-19 pandemic. Senior teachers were assigned the responsibility of providing in-service training to their junior colleagues on the implementation of COVID-19 protocols and the necessary adjustments to the curriculum (DBE, 2020c). Based on the findings of Saito and Inoi (2017), junior teachers can be defined as educators at post-level 1 who are primarily tasked with delivering instruction and fulfilling extracurricular obligations within educational institutions. To accomplish the research objective, the researcher selected 10 (ten) learners from the two secondary schools, ensuring a gender balance of five men and five women.

3.4.3 Data Collection

This section discusses the data collection methodologies that were used to collect data. The researcher used individual interviews, focus groups, and document analysis to collect data.

3.4.3.1 Individual interviews

Zhang (2022) states that qualitative research is a research approach characterised by systematic collection and analysis of data through various methods such as interviews, observation, and document analysis. The primary aim of adopting qualitative research methods is to facilitate the researcher’s acquisition of a deeper understanding of the views, attitudes and encounters of individuals (Utecht & Keller, 2019). The present study used interviews and document reviews as primary methods of data collection. Interviews serve as an often-used method for data

collection, allowing researchers to gather helpful insights and perspectives from participants regarding a specific phenomenon. The process involves a close and personal dialogue between the researcher and the participants, promoting an interactive and individualised exchange of information (Maree, 2018). The present study used semi-structured interviews as a methodological approach to collect qualitative data, to explore the points of view of teachers and learners.

Individual interviews, also known as one-on-one interviews, represent a research methodology in which the researcher engages in direct interaction with a solitary participant within a one-on-one context, with the primary objective of collecting relevant data and gaining valuable insights (Cresswell & Poth, 2017). In preparation for the commencement of the interview procedure, the researcher started by constructing an interview schedule or guide in which the following questions were asked:

- What effects does COVID-19 have on the teaching process?
- Optimistically, there were opportunities for the use of ICTs in education that you came across during the pandemic. What were they and why?
- What were the challenges that you faced when you switched from the traditional teaching method to online learning and why?
- In addition to the alternatives used, what are the mitigating factors that can help improve the effectiveness of technological teaching during a pandemic?
- What is the potential of using ICTs for educational purposes and why?

The researcher further ensured that before beginning with the interview the study was conducted with all the ethical considerations of a social research. The teachers' informed consent was acquired, encompassing a comprehensive clarification of the study's objectives and the intended use of the data collected. All participants were allowed to ask questions and express their consent to voluntary participation in the investigation. The study also adhered to the ethical principle of confidentiality. Participants were assured that any information they revealed would be treated with the highest level of confidentiality. Consistent with established ethical guidelines, the current investigation also adhered to the principle of anonymity by allocating all participants pseudonyms to protect their identities. This

precautionary measure was taken to protect their names, genders, and school affiliations from being disclosed. In this instance, the schools being studied were identified only as School A and School B, while the teachers were identified as T1, T2, etc. Data were collected until saturation. This became evident when the participants began to repeat what had been said by the first participants. To ensure that data saturation had been reached, the researcher decided to conduct two more interviews. After learning that the participants were indeed repeating what had been said by the previous participants, the researcher decided to stop the interview process.

3.4.3.2 Focus Group Interviews

The research applied focus groups as its second data collection methodology with learners from the two secondary schools. Focus groups represent a widely used qualitative research approach in which a researcher organises group interviews involving a cohort of six to ten individuals who have similar experiences and socioeconomic backgrounds (Smith, 2015). The rationale behind the adoption of this particular methodology originated from the considerable size of the learner population, making the execution of individual interviews a time-consuming endeavour. Participants in this study were divided into two groups based on their school affiliation. Group A comprised learners from school A, while Group B comprised learners from school B. The ethical principles that guided the conduct of individual interviews were used again in the administration of focus group interviews. Before their participation, participants in the study were required to sign consent forms in which they agreed that their participation was voluntary. Again, all participants were assigned pseudonyms to protect their identities. As an example, the learners were identified as L1, L2, L3, etc. Focus group interviews were planned to last approximately one hour.

45 minutes. The interviews were scheduled to be held after school hours. The researcher created an interview guide which was used as a tool to facilitate the interview process with the participants, who, in this case, were learners. The interview guideline had the following important research questions:

- What effects did COVID-19 have on the learning process and why?
- ICTs provided opportunities. What were those opportunities and why?

- What were the main challenges in moving away from the traditional classroom method to online learning, and why?
- Do you think alternatives can be used to make learning interesting and effective? Support your answer.
- What potential does learning online have and why?

The two focus groups, consisting of participants from two secondary schools within the Shiluvane circuit, were subjected to an identical set of questions to gain insight into their respective lived experiences. The researcher also used a digital voice recorder to capture the participants' experiences with their use of ICTs for teaching and learning. In addition to having a recording of the interview processes, a journal in which

The main ideas that were captured were also kept. The last data collection approach used was document review.

3.4.3.3 Document Review

The literature review shows that teachers and learners valued the use of ICTs in education during the COVID-19 pandemic (DBE, 2021). During school closures in Germany, Spitzer and Musslick (2021) used software data collection to assess online academic achievement of K-12 learners. The study found that digital learning during school closures improved academic performance. Mukhtar, Javed, Arooj, and Sethi (2020) used questionnaire data to assess the pros, cons and recommendations of online learning in Pakistan and Asia during the COVID-19 pandemic. The study found that teachers and learners have used computers and other ICT devices to share knowledge throughout COVID-19. Despite anticipated restrictions, online learning has shown exciting potential.

The literature also reveals that many teachers and learners were not prepared to use online learning modalities during the COVID-19 pandemic. Sibanda and Mathwasa (2021) used open-ended surveys and focus group interviews to examine how COVID- 19 affects rural Zimbabwean secondary teachers and learners. Their findings revealed that during the COVID-19 pandemic, many rural secondary school learners had trouble obtaining online education, according to their research. These problems were mainly caused by power outages and poor network

connectivity. Mpungose (2021) conducted interviews with South African lecturers to better understand the shift from face-to-face to e-learning. Mpungose (2021) found that digital learning hindered learning. The research found that most learners struggled to submit curriculum work to online discussion forums on time.

Pokhrel and Roshan (2021) in Bhutan, South Asia, found that WhatsApp and Telegram can be used after the learners return to class. These platforms provide learners with study materials and coaching. Mhlanga and Moloi (2020) used document analysis to explore how COVID-19 affected education's digital transformation. Their study concluded that South Africa could switch to technology-based teaching and learning.

The results of the literature review were consistent with the data collected from individual interviews and focus group discussions. After collecting the data using the methods mentioned above, the researcher proceeded to data analysis.

3.4.4 Data Analysis

Data analysis in research involves the organised process of extracting valuable insights from data collections (Maree, 2018). Qualitative data analysis refers to the methods that are used to analyse qualitative data, such as texts, audio, and videos (Cresswell, 2014). Common qualitative analysis methods include grounded theory, content, theme, discourse, and narrative. This study will analyse the data collected thematically.

The researcher adopted Colaizzi's (1978) seven-step thematic data analysis framework. In the initial phase of the research process, the researcher started listening to all the recorded data collected to understand the study, particularly what the participants had said. After reading the recording, the researcher began the process of transcribing the interviews verbatim. This involved the precise transfer of the recorded interview audio clip, stored on a tape, onto a written script. Subsequently, the researcher engaged in an aural examination of the script reading it aloud. This exercise was intended to obtain a comprehensive understanding of the content expressed in the interview. The transcription process facilitated the researcher's ability to effectively organise the data collected into a text- based format. Additionally, it allowed the researcher to deeply engage with the collected data, fostering a greater level of involvement and immersion.

In the second step of the research process, the extraction of significant statements was performed. In the third step of the research process, the collected data was broken down into smaller and more coherent categories to facilitate analysis and interpretation. During the fourth step of the data analysis process, the researcher diligently studied each paragraph of the text under examination, closely observing and documenting any recurring themes that emerged throughout the entirety of the document. Through the integration of interconnected ideas, meaningful units were established, with the researcher's understanding of the subject matter serving as the basis for the interpretation and analysis process. In the fifth step of the research process, the researcher engaged in the creation of typologies by recognising notable distinctions and patterns that emerged from a comprehensive analysis of numerous interviews. Through the data analysis process, several prominent themes have surfaced: the impact of COVID-19 on teaching and learning and the potential of teaching and learning. use of ICTs for teaching and learning. These themes shed light on various aspects related to the impact of the COVID-19 pandemic on teaching and learning. One such theme revolves around the accessibility of ICT tools. It became evident that the availability and ease of access to these tools play a key role in facilitating effective teaching and learning during this new time. This is consistent with Wahab's perception of ICTs (2020), which shows that the availability of digital tools and the readiness of learners play a fundamental role in ICT-integrated learning. In the sixth step of the data analysis process, the researcher discussed how themes are related and how they have helped answer research questions to achieve the objectives of the study. During this stage, the researcher used quotes from the data to strengthen the narrative. In the seventh step, the last phase, the researcher provided study participants with access to the transcripts to check if the researcher managed to capture what the participants had told him during the data collection stage, this member-checking process revealed that the study captured what the participants had said.

3.5 STUDY TRUSTWORTHINESS

Evaluating the precision of qualitative research findings can present certain difficulties. However, there exist various techniques and guidelines that can be implemented to improve the reliability of the findings in a qualitative study (Kumar, 2018). According to Creswell and Poth (2017), the qualitative methodology employs

the assessment of the trustworthiness of the research to evaluate its quality. The concept of study trustworthiness refers to the level of acceptability and reliability of data collection, processing, and interpretation (Gupta & Gupta, 2022). According to Kumar (2019), the contemporary paradigm applies the same standards to evaluate the reliability of data collection instruments in qualitative research. These criteria include credibility, transferability, dependability, and confirmability. The methods mentioned above to assess trustworthiness are based on factors such as reflexivity, triangulation, and comprehensive explanations.

3.5.1 Credibility

Creswell and Poth (2017) define credibility in qualitative studies as the degree to which data collection and analysis can be considered trustworthy. Credibility is employed to align qualitative research findings with reality. Interpretivism suggests that reality is the same as the illusion. shaped by the subjective experiences and meanings that individuals create in social contexts (McMillan & Schumacher, 2014). Ørngreen and Levinsen (2017) argue that rationalists posit the existence of multiple realities while emphasising that individuals construct their subjective understanding of the world. According to interpretivists, individuals actively construct their understanding, and therefore, there is no singular reality against which study findings can be compared (Kumar, 2018). The current study used the prolonged participation of participants and member verification to establish credibility. Data were collected through semi-structured interviews and document reviews to gain insights into different interpretations of the phenomenon. After data analysis, the researcher revisited the research site to present the study findings to the participants for their feedback and assurance. All participants who verified the data transcriptions agreed that the study findings and the researcher's conclusions were true. This suggests that the study findings were not influenced by the researcher's biases.

3.5.2 Transferability

According to Ørngreen and Levinsen (2017), the concept of transferability involves the extent to which the findings of a qualitative study can be applied to a distinct environment featuring other participants. The primary obstacle to achieving transferability in a qualitative study is commonly attributed to the subjectivity of the

researcher, which poses challenges when presenting compelling arguments regarding research findings (Kumar, 2019). Transferability is attained by offering readers comprehensive justifications of the study's context, enabling them to evaluate the applicability of the findings to other familiar situations (McMillan & Schumacher, 2014). The present study used a thick description to enhance the transferability of the findings. According to Poth (2017), thick description can be defined as the process of providing a detailed and interpretive account of a complex situation and its surrounding context. In this study, a thick description has been used to elucidate the contextual details of the phenomenon being investigated.

3.5.3 Dependability

Gupta and Gupta (2022) define dependability as the degree to which the results of a qualitative study can be reproduced when the same participants and setting are used. The dynamic and contextual nature of human behaviour, influenced by various factors circumstances, makes it challenging, if not impossible, to achieve reliability (Creswell, 2014). According to Kumar (2019), the personal meanings, experiences, data collection and analysis skills of the researcher all have an impact on the quality of the interferences. Consequently, it is not feasible to achieve dependability in the context of the design of the case study. In this study, the researcher achieved reliability by providing a detailed explanation of the research paradigm and design. It clearly described the sample and sampling criteria used to select participants. Data collection procedures and data analysis were also indicated to ensure dependability.

3.5.4 Confirmability

Creswell and Poth (2017) define confirmability as the final stage of quality control in a qualitative study. It refers to the extent to which the study findings can be independently verified by others. The researchers acknowledge the presence of presumptions and subjectivity (Gupta & Gupta, 2022). Confirmability refers to the precision of the data and the absence of research errors (Ørngreen & Levinson, 2017). In this study, the researcher used triangulation to verify the study findings. According to Poth (2017), triangulation refers to the use of various theories, data collection methods, sources, or researchers in the examination of a singular phenomenon. Confirmability was ensured through the use of various data collection

methods, such as semi-structured interviews and document analysis. These methods were implemented to collect data from secondary teachers and learners regarding the use of ICTs for educational purposes amidst the COVID-19 pandemic. The objective of this process was to minimise the researcher's influence on the research findings. The researcher enhanced confirmability by maintaining a journal during data collection and analysis. The notebook was used to organise observational data on teacher and learner experiences, facilitating the compilation of research findings. The recorded data was reviewed multiple times to verify the authenticity of the findings.

3.6 STUDY LIMITATION AND DELIMITATION

Study limitations refer to external constraints that impose limits on the scope of the investigation (Gupta & Gupta, 2022). According to McMillan and Schumacher (2014), the researcher must determine the scope of his research project considering the study's delimitation. The following procedures were employed to establish the following. boundaries of the study: The scope of this current study is limited as it only encompasses interviews conducted with secondary school teachers and learners within the Shiluvane Circuit of the Mopani District of Limpopo Province. The results or findings of the study could not be generalised as they were based on one circuit within the Limpopo Province.

3.7 ETHICAL CONSIDERATIONS

According to Creswell and Poth (2017), ethics refers to a set of principles that guide individuals' beliefs about what is morally right or wrong, as well as what is considered appropriate or inappropriate. Universities implement extensive measures to ensure the safety and dignity of study participants, as they recognise the utmost importance of ethical considerations in research (McMillan & Schumacher, 2014). The researcher applied for an ethical clearance certificate from the Ethics Committee of the University of Venda. Once the researcher obtained the university Ethics Committee certificate, he proceeded to seek approval from the Limpopo Department of Education (see Annexures 1 and 2). This was necessary as the study would be conducted in public secondary schools within the province. The study was granted permission following a formal request submitted to the Shiluvane circuit manager and the principals of the participating schools (see

Appendices 3 and 4). Once all ethical protocols were approved, the researcher began the process of gathering and organising the necessary data. Furthermore, careful consideration was given to the ethical principles of informed consent, confidentiality, and anonymity.

The study objectives were communicated to the participants during the recruitment process. Participants were given the option to withdraw voluntarily from the study at any time without any penalty, and the researcher assured them that their identities would be treated with the utmost confidentiality. To ensure confidentiality, pseudonyms were assigned to both the participants and the schools involved. For example, teachers were named T1, T2, etc.; learners were assigned L1, L2, etc.; and schools were named School A and School B. To instil a sense of assurance, study participants were provided with prior notification about the specific dates and times of interviews. Upon their decision to participate in the study, participants signed the consent forms (see Annexures 5 and 6). To incorporate the feedback of the participants into the study presentation, they were also asked to grant permission for their work. The recording of their interviews. In conclusion, the study was conducted following all ethical considerations for social research.

3.8 CONCLUSION

The chapter presented the research design and methodology used to conduct the study. The study used a qualitative research approach and an interpretive research paradigm. The study used individual, focus group, and document review as its data collection strategies. The data collected in the form of texts and recordings was analysed and interpreted using the content-thematic data analysis technique. Again, the rigour of the study or the trustworthiness of the study was also followed. An investigation was conducted to assess the reliability of the data collection methods used in the study. After data have been collected and analysed, five themes have emerged: the negative effects of COVID-19 on education, the adoption of online learning, the opportunities of using ICTs, the challenges of using ICTs, and the potential of online delivery modes.

CHAPTER 4: PRESENTATION OF STUDY FINDINGS AND DISCUSSIONS

4.1 INTRODUCTION

The focus of this chapter is to analyse, interpret, and discuss the findings that emerged from the data collected using a qualitative research approach. In Chapter 1, the researcher begins by specifying how he executed the study. In Chapter 2, the researcher provides a comprehensive examination of the relevant literature. Chapter 3 provides a piece of detailed information on the research methodologies that the researcher used to conduct the study. The researcher also shows methods that he used to collect data to provide a better understanding of how the use of ICT during the coronavirus affected teaching and learning in two secondary schools in Shiluvane District, Mopani-West District, Limpopo Province. The collection of data helped the researcher answer the following research questions.

- What are the experiences of teachers and learners of using ICTs for teaching and learning during the COVID-19 pandemic?
- What are the opportunities and challenges associated with the use of ICTs for teaching and learning during the COVID-19 pandemic?
- What potential do ICTs have to make teaching and learning possible during the COVID-19 pandemic?

The above research questions helped the researcher in achieving the study objectives which are:

- To explore the experiences of teachers and learners of using ICTs for teaching and learning during COVID-19 in two secondary schools of the Shiluvane Circuit, Mopani District.
- To discover the effects of COVID-19 on teaching and learning in secondary schools in the Shiluvane Circuit in the Mopani district.
- Explore the potential of ICTs to improve teaching and learning in secondary schools.

In this research study, the researcher documented the encounters and perspectives of the participants regarding the influence of online learning on the educational process in their secondary schools. Therefore, this chapter presents the findings obtained from the individual and focus group interviews conducted with the participants. Before starting the data collection process, the researcher

sought permission to conduct the investigation. interviews with all participants in the study. The researcher obtained permission from the Department of Basic Education of Limpopo Province. Once the researcher received an ethical clearance approval (see Annexure 2) he requested the participants to sign consent forms (see Annexure 5 and 6). These forms confirmed that the participants were willing to participate in the study and had a clear understanding of the purpose and objectives of the study. Objectives of the study. The researcher developed a set of interview guidelines composed of prescribed research questions (see Annexures 7 and 8). Before presenting the study findings, the researcher transcribed the participants' recorded voices verbatim to accurately capture their statements. In the data interpretation section, the italic or indented statements represent the exact words of the study participants. The researcher placed the results of the study within an interpretative framework. Furthermore, the researcher uses Heidegger (1982) and Husserl (1981) descriptive-interpretive methodology due to its ability to allow the researcher to figure out the basic premise of human experiences concerning a phenomenon, as articulated by the participants, on the understanding that the meanings are not directly available to us but are interpreted (Mafenya, 2017). In Heidegger's (1982:119) view, basic qualitative inquiry starts with 'things as they are experienced, with other people as we are related to them, and with the way people live.'

4.2 DATA PRESENTATION, ANALYSIS, AND DISCUSSION

The data analysis process refers to the systematic review and interpretation of data to derive valuable information and draw conclusions (Flick, 2014). This section includes a concise overview of the demographics of the study participants and the key themes identified from the collected data.

The study applied a purpose sampling strategy to select participants who were experienced school managers, department heads, junior teachers, and learners from two schools in the Shiluvane circuit of the Mopani West district in Limpopo Province. These participants were chosen because they were directly affected by the COVID-19 pandemic and the subsequent transition to online learning.

The experiences of the study participants about the use of ICT during the COVID-19 pandemic provided ample information to meet the research objectives. Table

4.2.1 presents a summary of the information about the study participants.

Table 4.1: The Demographic Information of the Study Participants

Location	Schools' code	Participants' code	Positions held in schools	Gender	Ts working experiences or Ls grades
Shiluvane Circuit (Mopani-west district)	A	T1	School Manager	M	31 years
	A	T2	DH social sciences	F	15 years
	A	T3	DH languages	F	25 years
	A	T4	Junior teacher	F	3 years
	A	T5	Junior teacher	F	7 years
	B	T6	School Manager	F	22 years
	B	T7	DH Sciences	M	12 years
	B	T8	DH Commerce	M	15 years
	B	T9	Junior teacher	M	2 years
	B	T10	Junior teacher	M	4 years
	A	L1	LRC President	M	Grade 11
	A	L2	Class rep	F	Grade 10
	A	L3	Ordinary Learner	M	Grade 8
	A	L4	Ordinary Learner	F	Grade 9
	A	L5	Ordinary Learner	M	Grade 12
	B	L6	LRC President	M	Grade 10
	B	L7	Class rep	F	Grade 8
	B	L8	Ordinary Learner	F	Grade 11
	B	L9	Ordinary Learner	F	Grade 12
	B	L10	Ordinary Learner	M	Grade 9
TOTAL		**20**			

The analysis presented by the researcher was identified from the data collected through individual and focus group interviews. Through data collection strategies, six interdependent major themes emerged, namely:

- The influence of using ICTs for teaching and learning during the COVID-

19 pandemic.

- The adoption of online learning during the COVID-19 pandemic.
- The access to ICT tools.
- The benefits of using ICTs for teaching and learning during the COVID-19 pandemic.
- The challenges of using online learning for educational purposes during the COVID-19 pandemic.
- The potential of using ICTs in education.

4.3 PRESENTATION AND DISCUSSION OF THE EMERGING THEMES

This section presents the themes that emerged from the data collected through individual and focus group interviews conducted with teachers and learners from the selected schools.

4.3.1 The Influence of Using ICTs for Teaching and Learning During the COVID-19 Pandemic

The first theme talks about the influence that ICTs have on teaching and learning during the COVID-19 pandemic. The data collected on the influence of ICTs on education revealed a significant theme: the impact of the COVID-19 pandemic on teaching and learning. The objective of the researcher was to study the effects of COVID-19 on educational processes. The present study revealed several key findings. First, it highlighted the issue of teacher and learner absenteeism. Second, it brought to light the negative consequences of rotational attendance for both teachers and learners. In addition, the study revealed the detrimental effects that the pandemic had on curriculum changes in education. Furthermore, it highlighted the negative impact of compromised learner progression on education. Lastly, the study explored the implementation of online learning and team teaching as potential solutions.

The study found that teachers and learners with preexisting health conditions were absent from school due to the precautionary measures of COVID-19. This

conclusion was drawn based on verbal data obtained from school managers, department heads, class teachers, and learners. Absenteeism occurred due to the guidelines outlined in Circular 1 of Circular 1 of the Department of Basic Education of 2020. This circular addresses the management of COVID-19 in schools and specifies that teachers who are 60 years of age or older, as well as teachers and learners with underlying health conditions, must work from home to reduce the risk of infection (DBE, 2020b).

Absenteeism hurt the regular operation of the school. The COVID-19 pandemic resulted in an increase in teacher absenteeism, which in turn led to a higher teacher workload and increased instances of ill-discipline in schools. To gain a more comprehensive understanding of how absenteeism impacts teaching and learning in the context of COVID-19, it was necessary to look into this topic further. Teachers were asked to provide an analysis of the overall impact of absenteeism on schooling. School A T1 highlighted the adverse consequences of absenteeism. According to T1, the unavailability of certain teachers due to unforeseen circumstances resulted in increased workloads for other teachers. He expressed dissatisfaction:

Some teachers in the SMT, like me and others, had to receive extra classes because the school did not have people because teachers who were on medication could not attend, they were working from home, so I had to teach more classes and do other management duties, which is tiring.

The excerpt illustrates the type of workload that teachers were experiencing due to the of teachers due to the COVID-19 Pandemic. This suggests that teachers with underlying health conditions were given the option to work remotely, resulting in their responsibilities being reassigned to members of the school management team. The complaint mentioned by T1 implies that the teachers were unable to perform their duties effectively due to being overwhelmed. They were required to cover classes for other teachers and supervise administrative tasks related to school management. The COVID-19 pandemic has resulted in challenging working conditions for teachers, leading them to feel burdened (Kotowski, 2022). The study revealed that the teaching and learning processes were not conducted effectively due to the prominent levels of absenteeism among teachers. L1 from School A highlighted the issue of absenteeism of learners and endorsed it due to the fear of learners of contracting the virus, which led to their absence from the school

premises. During her explanation, she clarified that:

I lost my uncle due to COVID-19. As a learner, it was so difficult to mourn and come to terms with the deaths of my loved ones. At the reopening of the beginning of the COVID-19 school, I spent a week without going to school. I was afraid to catch the virus because many people were getting infected almost every day.

The provided statement indicates that the learners experienced fear of contracting COVID-19 while attending school. The data indicates that the learners were not psychologically prepared to attend classes due to the need to cope with the emotional impact of losing their loved ones. Furthermore, the study revealed that the learners made a conscious decision not to attend school, not because their health conditions were deemed more vulnerable but out of a genuine fear for their safety. Based on the information provided, it can be assumed that the learners experienced a sense of strain due to the rapid spread of COVID-19 and its associated fatalities. Consequently, learners did not attend schools to mitigate the potential risks posed by the virus.

In addition to the absence of teachers and learners in schools due to COVID-19 protocols, this study also found that rotational school attendance had a detrimental impact on the teaching and learning process (Nwokeocha, 2021). These sentiments emerged due to the focus group interviews conducted with some of the learners of the 2 secondary schools. The rotational school attendance principle required learners to maintain 1.5 metres from each other. Furthermore, classrooms were limited to a maximum of 20 learners (Spaull, 2020). The reason why the learners did not attend at the same time was because of insufficient classrooms in the schools. One of the learners identified as L6 from school B identified a negative impact of rotational attendance when she stated the following.

In our class, we went to school on Tuesdays and Fridays. It takes time for us learners to learn, teachers used to give us a lot of homework to do at home, but on the days, we attended, teachers failed to do all the corrections for the activities because time was short.

The statement suggests that the implementation of rotational school attendance resulted in insufficient teaching and learning time. The reason for this is that the

learners only attended classes twice a week. The excerpt also indicates that the learners expressed dissatisfaction with the tasks assigned by their teachers. The use of the phrase "a lot" suggests that the learners were overwhelmed by the number of activities. Teachers did not adequately address the learners' needs during the contact session because the assigned tasks were not aligned according to the assigned days and time. It became apparent that teachers were assigning learners tasks without a clear plan for their proper execution. The COVID-19 pandemic caused teachers to face challenges in effectively planning their daily activities. This implies that teachers were unable to use their lesson preparations to successfully achieve the desired learning outcomes. The study also discovered that learners who performed poorly were the most affected by COVID-19. School B T6 highlighted the consequences of rational attendance, specifically noting that learners with low academic performance were deprived of sufficient support and additional attention. T6 raised a complaint when he said:

For learners who need us teachers by their side almost every day, COVID- 19 causes a lot of stress because they do not have enough time with us in the classroom. I am saying this because mathematics is a tough subject, it needs learners to practice and ask for help from us, their subject teachers.

The statements provided discuss the adverse impact of rotational attendance on learners' acquisition of knowledge. The data indicate that certain subjects are challenging, highlighting the significance of collaboration between teachers and learners. It is indicated that teachers were uncertain whether slow learners understood the subject content due to changes in teaching plans. The data revealed that slow learners were frustrated, as it is assumed that they were unable to grasp the information quickly and did not have anyone available to provide additional support in understanding the content. This lack of support was due to the limited time limit and adherence to the COVID-19 rules and regulations. The Department of Basic Education (2021) has found that rotational attendance has had negative impacts on learners. This is because they were unable to cover or fully understand all the curriculum content requirements due to limited face-to-face contact sessions. The T5 from school B supports the findings mentioned in the above DBE report by stating the following:

I was able to cover the entire syllabus because my grade 9 learners only attended class once a week, which allowed me enough time to do so.

The statement above indicates that teachers found it challenging to attend face-to-face classes because they were only expected to meet with their learners once per week. Therefore, it could be argued that teachers were unable to complete the expected curriculum coverage due to the decrease in face-to-face instruction.

In addition to the challenges posed by rotational attendance, this research study explored the impact of COVID-19 changes to the curriculum on the teaching and learning experience. Teachers were individually interviewed to discuss their experiences with curriculum changes during the COVID-19 pandemic. Teachers revealed that these changes harm both teaching and learning. Teachers of the respective subjects were interviewed regarding the challenges that impact their instructional practices. A participant, identified as T3 and affiliated with school A, reported that curriculum modifications required adjustments to his teaching plans in response to the COVID-19 pandemic. T3 elaborated on this matter as follows:

The pandemic caused a huge strain, teaching and learning were not easy because the Consumer Studies syllabus had to be changed and some topics were removed. It strained me because I had to change my lesson preparations and navigate new styles to cover the content.

The above statement illustrates the teachers' dissatisfaction with the adjustments to the curriculum. The illustration provided also indicates that the learners were exposed to a shorter curriculum due to the removal of certain content or topics. The statement reveals that teachers did not have a predetermined plan to adapt to changes in the curriculum. As a result, they faced difficulties in effectively planning and teaching learners simultaneously. T7, from school B, agreed with this point of view and explained that the department's curriculum reductions prevented teachers from teaching the entire curriculum to learners. T7 made the following comment:

The learners did not attend school regularly and the curriculum coverage was negatively affected. The learners were not taught to the fullest because the department reduced the ATP, and the contact time was reduced.

The above statement suggests that when curriculum changes occur, it hurts the

coverage of teaching and learning content. Implementing curriculum changes can present various challenges. Teachers may find that they need to modify their lesson plans and must possess the ability to effectively deliver the content creatively. The phrase "not taught to the fullest" suggests that learners did not receive the complete curriculum required for their next grades because of the government's decision to reduce the curriculum. Furthermore, the study revealed that the learners encountered gaps in their knowledge due to the removal of certain topics. This was done to accommodate the rotational attendance system implemented by schools and ensure that the academic year was not compromised. T3 of school A brought attention to an additional difficulty that COVID-19-related curriculum changes pose. According to T3, changes to the curriculum have led to a situation where learners are not acquiring the core knowledge necessary for subsequent grades. According to T3, it was stated that:

The geography curriculum was trimmed, and the learners progressed to the next grade without learning some specific topics or basics in this subject.

The narrative above illustrates that geography learners encountered a condensed curriculum. This suggests that secondary learners were promoted to the next grade without fully acquiring basic knowledge of the subject. Consequently, teachers are responsible for starting instruction at a foundational level to ensure that learners understand the content appropriate for their level of instruction. This implies that teachers must exert additional effort in the upcoming grades when teaching learners from COVID-19 cohorts to ensure their success despite challenging circumstances. A teacher at school A, called T4, has shared his experience with learners progressing to the next level despite having gaps in their knowledge. According to T4, it was stated that:

The learners' contact session was compromised, and as a result, they progressed to the next grades with some gaps left behind, in fact, they went to the next grades empty-headed.

The term empty-headed in the above statement refers to learners who have advanced to the next grade without acquiring the necessary knowledge or with significant gaps in their understanding from the previous grade. This statement indicates that the progress of the learners during the COVID-19 pandemic did not

accurately reflect their knowledge and abilities. A knowledge gap can have negative consequences for both teaching and learning. These gaps can result in learners lacking competence in future grades, which can hurt their academic achievements. This claim is in line with Forster, Forthmann, Back, and Souvignier's (2022) research into the effects of reading proficiency on German second-grade learners. They found that second-grade learners had difficulty reading skills, most likely due to the disruptions caused by the COVID-19 pandemic in the previous grade. The COVID- 19 pandemic has led to a situation where learners are academically ill-fit in their current grades due to knowledge gaps caused by the requirements imposed by the pandemic. The present study revealed that, due to COVID-19, secondary learners were unable to complete standardised assessments. Schools conducted the assessment according to the guidelines described in Circular 7 of the Circular 7 of the National Assessment Policy for 2020. These guidelines specify that schools should make the appropriate changes to their school-based assessments (SBAs). Once more, learners in grades eight through eleven underwent SBAs that their teachers administered at the school level. The head of the department T8 of school B described the vital role of school-based assessment in the progression of the learner. According to T8, teachers were lenient when developing examination papers for their learners. She expressed disappointment.

When moderating the examination question papers, I came to realise that most teachers were setting papers that were not challenging to learners; in most cases, learners wrote only one or two themes covering term one and term two work.

The statement implies that the learners wrote the examinations developed by their teachers at the school level. This implies that exams were administered to learners in grades 8–11 from various schools, resulting in variations in the content and format of the exams. The phrase that is not challenging suggests that teachers were setting exam papers merely for compliance rather than adhering to the specified examination guidelines outlined in the Curriculum Assessment Policy Statement (Caps) documents. The provided illustration also shows that, despite the difficulties presented by the COVID-19 pandemic, the departmental head oversaw the moderation of the question papers completed by the learners. The

given expression indicates that during the moderation process, it was found that not all main topics were thoroughly evaluated due to COVID-19. One could argue that question papers written by secondary learners lacked the inclusion of all cognitive levels and lacked credibility. Teacher T7 from School B also presented a claim supporting the challenging nature of the assessment of the compromised learner. This claim was that the learners wrote an essay for the main exam. T7 expressed sympathy for the situation:

Grade 8 learners attended once per week, I did not have enough time to teach short transactional writing, literature, etc. I have no choice but to be fair to learners when setting exams, so I only gave them an essay for evaluation purposes.

The remark above demonstrates the empathy that teachers feel towards their learners. The statement reveals that the learners encountered a simplified assessment procedure due to the impact of the COVID-19 pandemic. In addition to compromised learners' assessment, this study also found that progression standards were compromised. Learners were able to pass their year mark due to adjustments made in the SBA weighting. The government issued Circular S7 of 2020 to address the progression requirements for grades 10 to 11. This circular aimed to enhance academic performance among secondary school learners and adjust progression standards. One of the key changes outlined in the circular was an increase in the weighting of school-based assessments from 25% to 60%. Additionally, the weighting of the final examinations was decreased from 75% to 40%. These adjustments were made to promote better academic outcomes for learners (DBE, 2020a). The COVID-19 pandemic has had a detrimental effect on the field of education.

This study highlights the advantageous effect of COVID-19 on education, despite the numerous challenges posed by the pandemic. It reveals that teachers have successfully adapted to the situation by exploring innovative teaching methods. The study findings indicated that teachers used the blended learning approach to improve the performance of learners in the midst of the pandemic. According to the findings of School B T6, the COVID-19 pandemic had positive effects. They found that most teachers in their institution combined traditional in-person learning with digital learning to ensure that curriculum content was adequately covered and to

support learners in their revision efforts. T6 provided the following statement:

Coronavirus made it difficult for me to cover the whole syllabus during the year, so during the October/November grade 12 national senior certificate examinations in 2020, I used to call learners to attend physical sciences classes at schools, and again, I would send them clips and exam tips for the specific topics using our grade 12 WhatsApp groups.

The above statement provides additional support for the assertion that teachers faced challenges in fully covering the curriculum during the COVID-19 pandemic. The statement indicates that teachers devised a creative and innovative method to actively involve learners in their learning. This approach was designed to help learners understand the material thoroughly and review it to be adequately prepared for their final exams. The findings of the current study indicate that learners were exposed to both traditional and online classes during examinations. The teachers might have done this to help learners get top grades on their exams. The COVID-19 pandemic has prompted teachers to adopt a blended learning approach to cater to all learners, including those who have access to WhatsApp and those who do not. Following what Rachmadtullah, Marianus, Megan, Rusi, Achmad and Muhammad (2020) found, teachers should use blended learning methods to help low-income families who do not have access to the ICT tools they need for online learning. In addition to employing blended learning as a novel approach to education, this study highlights the rise of team teaching in schools due to the COVID-19 pandemic. T3 in School A revealed the implementation of team teaching. This decision was made in response to the need for teachers to collaborate due to larger class sizes and the requirement for schools to limit classroom occupancy to a maximum of 20 learners. T3 had this to say:

I teach grade 8 natural sciences and I have the qualifications to teach life sciences and agricultural sciences. During COVID-19, I taught grade 11 life sciences because classes were large, and the teacher could do it alone. During the days the grade 11 learners attended, I had to assist him, and during the days the grade 8 learners attended, the teacher had to assist me, too.

The previous statement indicates that teachers were required to teach all the

subjects they specialised in. The previously mentioned assertion indicates that teachers were required to create teams in response to the increased workload caused by the increase in the number of classes during the COVID-19 pandemic. According to DBE (2020a), collaborative teaching offers the advantage of sharing workload among teachers. The illustration also suggests that teachers were required to teach the same subjects using comparable resources for a specific grade level. The implementation of team teaching during the COVID-19 pandemic facilitated the development of stronger professional relationships among teachers. One could posit that COVID-19 has prompted teachers to engage in collaborative planning and skill sharing, resulting in a positive outcome where learners benefit from exposure to diverse teaching styles and ideas.

The previous discussion has indicated that a wide range of factors, including teacher- learner attendance, assessment methods, and progression standards, were adversely impacted. The COVID-19 pandemic has presented numerous challenges to the field of education, which may take several years to address and restore normalcy. Among the numerous challenges posed by the COVID-19 pandemic to education, it is crucial to recognise that many countries have recognised the need to transition to digital learning platforms. The above discussion also revealed the positive effects of COVID-19, namely, increased adoption of ICTs to improve the teaching and learning process and the implementation of team teaching to reduce workload during the COVID-19 pandemic.

4.3.2 Adoption of Online Learning During the COVID-19 Pandemic

The purpose of this study was to investigate the experiences of teachers and learners who used ICT for educational purposes during the COVID-19 pandemic. The data for this study have been collected from both participants and documents. The main research question that guided this data collection process was as follows: What are the opportunities and challenges associated with the use of ICTs for teaching and learning during COVID-19? This shift presented both opportunities and challenges. On the one hand, the use of ICTs allows remote learning, allowing learners to continue their education from the safety of their homes. It provides access to a wide range of educational resources, including online libraries, databases, and educational platforms. In addition, ICTs facilitate communication and collaboration among learners and teachers, fostering a sense of community

and engagement. However, there are also challenges associated with the use of ICTs for teaching and learning during the pandemic. Not all learners have equal access to technology and Internet connectivity, creating a digital divide that hinders their ability to fully participate in remote learning. This access gap can worsen existing educational inequalities. In this theme, the experiences of secondary teachers and learners as they transitioned to online delivery methods during the COVID-19 pandemic were explored. A variety of factors affected the efficacy of technological learning during the COVID-19 pandemic.

Through interviews with study participants, it was found that teachers' attitudes, readiness, abilities, economic status, and social issues all play a significant role in determining this effectiveness.

The current study explored the extent to which teachers and learners have embraced online learning during the COVID-19 pandemic to gain a comprehensive understanding of its usage. This section focusses on the in-service training that the Department of Education offers on the use of ICTs for online learning. Explores the readiness and abilities of teachers and learners to effectively implement this method during the COVID-19 pandemic. The discussions indicated that the Department of Education did not adequately provide in-service ICT education to teachers and learners on the Shiluvane Circuit, especially during the COVID-19 pandemic. The researcher had a one-on-one conversation with school managers about the implementation of online learning methods during the COVID-19 pandemic. School B T6 further demonstrated the lack of ICT training for teachers. T6 stated that the department only provides ICT training to teachers who will assist with the South African School Administration and Management System (SA-SAMS). Many South African teachers continue to face challenges in effectively integrating ICT into their teaching due to a lack of creativity and innovation. The main cause of this is that teachers lack computer administration training (Dlamini, 2022; Mahlo, 2022). T6 expresses concern about:

The circuit sends circulars year-in-year-out to train SA-SAMS administrators, the teachers who get trained are young teachers who help the school with patching of marks and doing schedules, old crocks like me and others cannot even use a computer.

The information provided indicates that the department offered ICT training specifically for teachers who assisted with administering SA-SAMS, rather than for all teachers. This suggests that the government prioritised the use of electronic devices for educational purposes but neglected other key elements such as the use of social media platforms for teaching and learning. In this case, the term "old crock" was used to refer to teachers who have been in the education system for a significant period. The study revealed that most older teachers lack the technological proficiency necessary to effectively use school ICT tools, such as computers. Older teachers were unable to use ICT tools due to their lack of readiness and inadequate training on the importance of integrating ICTs into education. T5 from School A brought up the issue of online teacher training. They mentioned that their curriculum for teaching methodologies during their study time focused only on traditional teaching methods. T5 placed significant emphasis on the following points:

Teachers who schooled long in the past, the likes of myself and others, when we are exposed to distance learning, it becomes a little bit challenging, we are not trained to administer online, we are trained to teach using textbooks, chalkboards, and chat methods.

This illustration indicates that many teachers received their training before the integration of educational technologies. The findings of this study imply that secondary teachers who had studied their teaching profession for a long time in the past experienced frustration because traditional face-to-face teaching methods were negatively affected during national lockdown. On the other hand, the study found that junior teachers were adequately prepared to use online learning with their learners, based on the findings obtained from one-on-one interviews conducted with them. Additionally, it was discovered that teachers have undergone pedagogical training to effectively incorporate technological devices into their teaching methods. One of the teachers from school B, referred to as T7, showed his preparedness and cheerful outlook towards ICTs. T7 mentioned that they are knowledgeable about ICT and prefer to use online learning methods. According to T7:

Changing to an online learning style was never a problem for me. I did ICT as

a module during the final year of my teaching degree. I used this method to teach learners because I knew it and because it was simple and convenient to deliver lessons.

From the above extract, the participants indicated that they had received training in the use of ICTs for educational purposes. The expressions of the above participants also suggest that digital learning is part of the current curriculum. The incorporation or integration of technology into teaching qualifications in education is beneficial because it allows teachers to effectively adopt e-learning methods in their practice. This implies that junior teachers did not face significant difficulties in transitioning to online learning because they were already familiar with computer operations and other technological devices. The study findings further demonstrated that junior teachers use online learning due to its ability to optimise the teaching process. The implementation of online learning has provided advantages to junior teachers. The T8 from school B made the following remarks, which support this assertion.

I enjoyed the way the department emphasised the importance of using online learning during COVID-19 because these are my things. I have a degree in computer science and before the outbreak of COVID-19, I used to teach my learners using the overhead projector.

This researcher realised that having knowledge and skills in ICTs was important for teachers to successfully use online learning methods during the COVID-19 pandemic. The use of the phrase "my things" shows that the teacher has a positive attitude towards ICTs, as it reflects their enthusiasm for this teaching approach. The above statement suggests that teachers have the essential skills and knowledge required to use ICT tools effectively during the COVID-19 lockdown. Teachers found it enjoyable to transition from traditional face-to-face instruction to digital learning platforms.

Following the above discussion, it can be argued that while the department acknowledges the shift to online learning due to COVID-19, there is still a need for improvements. This is because, historically, the Department of Basic Education has not made sufficient investments in ICT facilities (DBE, 2021). To incorporate ICT tools for teaching and learning, it is necessary to begin by providing training and

altering teachers' attitudes. This will enable them to be prepared and willing to use technological tools for teaching and learning in school settings.

4.3.3 Access to ICT Tools

The study found that the government is encouraging the integration of ICTs into education to assist learners and enhance their academic achievements. However, it has been observed that schools have not been adequately equipped with the necessary technological resources and have not been able to effectively implement this initiative. Participants demonstrated that the use of ICT in educational institutions is accompanied by various difficulties. In the following excerpt, school B T8 discusses the impact of online learning tools on teaching and learning accessibility for schools, teachers, and learners:

Online learning is something imaginary, the department talks about it, but the resources for online learning were not available for us to use this style of teaching and learning during COVID-19. I did not use online learning because the school has few computers and they are only used for administrative duties, and there was no WI-FI router here at the school during COVID.

There is a perception that ICT tools are not accessible in schools, leading to the belief that online learning is merely a hypothetical concept (Chisango, 2021). The illustration above also shows that the school has a limited number of computers, which are primarily used for school administration purposes. The researcher is interested in the above extract because it highlights that the Department of Basic Education focusses on advertising the method of technological teaching but fails to adequately provide the necessary devices to support this learning approach. This implies that teachers were prepared to transition to online learning with their learners. However, this was not feasible due to the lack of government investment in online learning methods. The availability of ICT devices, such as computers and Wi-Fi routers, affects the success of online learning. Schools can adopt online learning if they have these necessary ICT facilities. School B T6 from school B disclosed that the lack of availability of online learning tools in schools was due to insufficient funds to acquire online learning resources. T6 raised concerns as shown in the following comment:

Our school falls under the no-fee school category, the school was not able to

buy data bundles and gadgets, we do not have the budget for them, and the department only allocated additional funds to buy COVID-19 planning, such as sanitisers and likes.

The previous statement indicated that schools lack a strategy for providing teachers and learners with ICT tools. The school's economic condition prevented them from purchasing technological tools for the effective implementation of online learning. This statement indicates that the government provided funding to schools for the purchase of COVID-19 planning. This was done to ensure that traditional in-person instruction could be conducted smoothly while implementing a rotational attendance system for learners. In addition to insufficient funding for ICTs, the study also highlights that schools lack long-term goals for implementing online learning, as they have not allocated a budget for this purpose. This is because each item in the school budget should align with the School Improvement Plans (SIP), which outline the school's future goals (DBE, 2020b). Research also found that the economic status of learners had an impact on the usefulness of online learning during the COVID-19 pandemic. The participant indicated that learners may face difficulties using the Internet to learn due to a lack of access to ICT devices. The following statement represents the sentiments of a teacher identified as T5 from school A:

Online learning was not carried out to the fullest because we are in a remote area where most parents are not working, so many learners do not have data or gadgets for online learning. Most of the learners in my class use mobile phones, which are not smart.

The above comment indicates that the presence of ICT devices plays a crucial role in influencing teachers and learners to transition to online learning. The study further shows that learners possess smartphones, but these phones are not suitable for teaching and learning due to the lack of appropriate software for digital learning. Furthermore, it has been discovered that the Shiluvane Circuit is located in rural parts where most parents are without work. Consequently, many of these parents cannot financially support the purchase of ICT devices for their children's online learning. The learners were unable to use online learning because they did not have access to smartphones, computers, and mobile data. The COVID-19

pandemic has presented difficulties for secondary learners in terms of their education. One of the main challenges they have faced is the lack of access to the necessary technological tools (Mahyoob, 2020). Furthermore, the study revealed that learners who did not have access to ICT tools only learnt when they physically attended school on a rotational basis. The study findings indicate that learners require a certain amount of time to acquire knowledge and develop skills within a given period. L4 from school A highlighted that the lack of digital tools has led to a delay in knowledge acquisition:

COVID-19 caused great devastation to me, I was not fortunate to have cell phones and other resources, and I was unable to learn properly because we had to attend three days a week, so we took the time to master the content.

The excerpt indicates that learners who did not have the financial means to access technology and did not have access to television and radio were unable to learn. Based on the previously mentioned statement, the study revealed that learners experienced discontentment with the rotational attendance system. They wanted to also participate in online learning but were unable to do so due to limited resources. As a result, the prevailing circumstances caused stress and a sense of missing crucial foundational knowledge. It becomes clear that the lack of technological tools hurts the online learning method. This implies that the people who used ICTs for educational purposes were those who had their own personal ICT devices.

4.3.4 The Benefits of Using ICTs for Teaching and Learning During the COVID-19 Pandemic

This section investigated the advantages of using ICTs for educational purposes in teaching and learning. The results of individual interviews and focus groups showed that both secondary teachers and learners experienced advantages of using online learning during the COVID-19 pandemic. The findings were derived from the responses provided by the participants. According to a study by Spitzer and Musslick (2021), the use of ICT during the COVID-19 pandemic proved advantageous for learners. This was mainly due to two factors: increased discipline among learners and the availability of ample time to learn at home. At present, the government is promoting the use of ICT tools, such as television and radio stations,

for educational purposes. Frans (2021) conducted a study on the determinants of ICT implementation in rural public schools. Frans's 2021 study found that the adoption of digital learning depends on two key factors: the discipline of learners and the availability of technological gadgets. Secondary teachers and learners have different perceptions of the benefits of electronic learning methods. The findings of the focus group interviews indicated that the learners were able to understand certain information through digital learning platforms during the COVID-19 pandemic. Most of the participants believed that the use of technology for instruction was a way to keep teaching and learning going while schools were closed due to lockdown regulations and rotating attendance of the learners. The results are consistent with previous studies that demonstrate how secondary teachers and learners were able to maintain their educational activities by using radio and television programmes (Amutha, 2020; USAID, 2021; DBE, 2020b). The following quote from T3 from school A demonstrates how pleased the learners were with the quick retrieval of the information:

Teaching using media benefits teaching and learning because it allows learners to repeat the information taught. For example, if we send voice clips to our WhatsApp group, the learners told me that they even used them during their revision. COVID-19 forced me to use various electronic gadgets and I think it was a learning era to learn how to use this method with learners.

This comment indicates that online learning is beneficial to both teachers and learners. The study found that secondary teachers and learners used social media platforms to conduct lessons from a transactional distance (Amutha, 2020). This is in line with the Limpopo Department (2022) report, which claims that teachers and learners had the opportunity to share knowledge and educational resources using the WhatsApp portals the government provided during COVID-19. The above statement also showed that the use of ICTs for educational purposes is significant, as it helps learners revise the acquired knowledge since it provides repetition of the materials. This extract is especially important to the current study as it also reveals the positive attitude of secondary teachers and learners towards digital learning. It is crucial to acknowledge that teachers recognise that we are currently in an era of technological advancement. The findings of this study found that some learners were happy with online learning because they had to manage their learning

process. The following comment was obtained from the focus group in school A by L3, who said:

Online learning helped me to be self-dependent. I had to listen to the radio from 8 p.m. to 10 p.m. to learn agricultural sciences, life sciences, and other subjects alone at home without having teachers check on me. Radio lessons benefited me because they taught me self-discipline and to focus on my own good.

The above comment shows that using ICTs for educational and instructional purposes during the COVID-19 pandemic has helped learners develop a sense of responsibility towards their education. In online learning, the responsibility for facilitating the learning process has shifted from teachers to learners, unlike in traditional physical teaching methods. The statement provides additional evidence that online learning has encouraged learners to approach education with a greater level of seriousness (Adarkwah, 2020). The learners had to wait until late to participate in digital learning sessions. During these sessions, they had to remain focused for two hours without direct supervision from their teachers. According to Siemens (2013), it is believed that teachers should take responsibility for their education. The statement above explains the benefits of using ICTs in education during COVID-19. It emphasises how ICTs allowed learners to learn crucial subjects that the rotational attendance policy put in place in most schools in the Shiluvane circuit. The research findings indicate that learners also experience advantages from utilising digital learning through internet web browsers. A learner identified as L8 from school B brought attention to the potential advantages of using the Internet by saying the following.

Using online learning taught me to further research my activities and other alternatives to doing schoolwork. The Internet helped me find simple study notes for economics.

The statement is significant to the researcher as it indicates that the participants derived advantages from using the online learning method to the point where they researched specific topics on different topics. The concept of research involves acquiring a deeper understanding of specific topics. Additionally, the results of the study revealed that digital learning facilitated comprehension of the subject matter.

It enabled learners to compare the information from their teachers and the ones available on the Internet platforms (Amutha, 2020). The benefits of using the Internet for learning are evident among secondary learners. One could argue that learners acquire a greater amount of information and knowledge through Internet learning compared to what is provided in traditional classrooms. This is because internet learning offers a wider range of information from various scholars.

It is worth noting that secondary learners and teachers who had access to technological devices and maintained a positive mindset experienced the benefits of using digital learning during the COVID-19 pandemic. The study revealed that the participants used various technological platforms, including television and radio programmes, social media platforms such as WhatsApp groups, and websites on the Internet. The study has shown that digital learning has several benefits for learners. First, it is particularly helpful during revision periods, allowing learners to review and reinforce their understanding of the material. In addition, digital learning platforms are effective in teaching core subjects, providing learners with comprehensive and structured lessons. Furthermore, these platforms allow learners to research specific topics, thus enhancing their knowledge and understanding of the subject matter. While online learning does provide numerous benefits, it is important to recognise that it also comes with certain drawbacks or limitations, which will be discussed in the next topic. According to Adarkwah (2020), several factors influence online learning experiences. These factors include access to ICT tools, teacher and learner training, and their attitudes.

4.3.5 Challenges of Using Online Learning During the COVID-19 Pandemic

Although some secondary teachers and learners found digital learning to be beneficial, participants also encountered some limitations. The constraints associated with online learning during the COVID-19 pandemic, as discussed in this thesis, relate to the challenges faced by teachers and learners in accessing online platforms, the lack of necessary technological resources in schools, and the societal inability to effectively support electronic learning. This section discusses the difficulties faced by secondary teachers and learners when integrating the Internet into education. The participants revealed that electricity power cuts are one

of the challenges for online teaching and learning. The absence of electricity has a significant impact on various aspects, including network connectivity. The lack of power banks has made it difficult for certain learners to access educational programmes on television or radio. L1 from school A revealed the difficulties of power outages claiming that load shedding caused limitations in online learning. L1 made the following remarks:

Our accounting teacher used to send us activities in the evening. It was a little bit difficult for me to access the information because, at the place where I live, there is no proper network, more specifically when the electricity is gone. The load-shedding made online learning difficult for me.

The previous assertion indicates that learners reside in areas with inadequate network connectivity during power outages. The statement suggests that the accounting teacher intended to use online learning with the learners. However, this was not practical due to network connectivity issues caused by Eskom load shedding, a challenge currently being experienced in South Africa (DBE, 2021). The statement implies that learners were ready to engage in online learning with their teachers, but they were unable to do so due to the current electricity supply situation in our country. Findings indicates that the learners had difficulty accessing the information that their teachers had provided. They had to wait for the return of electricity to establish a stable network connection and take remote lessons with their teachers. In addition to the limitation of network connectivity, the current study also found that learners were unable to use online learning due to the lack of the ICT resources necessary for internet-based education. The limitation of lacking appreciation for ICT tools was identified through a focus group discussion involving participants from School B. One of the participants, L5, made the following statement:

Ma'am for agricultural sciences usually sends homework, question papers, and timetables and sometimes helps those who ask questions with solutions in the evening. My problem is that I had to see all the materials she sent my classmates during the morning study because when I tried to open the web links sent on WhatsApp, most of them could not open on my phone.

The above statement suggests that the effectiveness of e-learning during the

COVID- 19 pandemic was dependent on learners having access to digital tools equipped with suitable software. The previous thought suggests that learners who possess outdated or inadequately equipped ICTs faced disadvantages as they were forced to complete their homework at school. This situation is unfavourable, as it resulted in delayed knowledge acquisition, promoted laziness, and negatively impacted the academic performance of learners. The teacher showed support for the use of ICTs for teaching and learning during COVID-19. However, the learners faced challenges because they did not have the ICTs necessary to complete their tasks. This study conducted one-on-one interviews to investigate the challenges teachers face in supporting learners through online learning. The findings revealed that online learning, as a method of instruction, presented a significant challenge in meeting the cognitive needs of each learner. T7 from school B revealed the distinction in knowledge acquisition by saying the following:

Mathematics is a challenging subject; slow learners must be assisted through additional classes. During COVID-19, I used the Internet to teach learners as a group. Learners who did not perform well used to complain that I am fast in explaining problems in WhatsApp groups, unlike what I do in the classroom, so it was difficult for them to learn because they did not get detailed explanations.

The stipulated portion indicates that the learners expressed dissatisfaction with technology-based learning. This suggests that the learners had become used to the teacher's use of practical illustrations during classroom instruction. This point is crucial because it uncovers the attitude of secondary learners towards the use of e-learning during the COVID-19 pandemic. The expression provides additional evidence that teachers were not effectively adapting their teaching methods to accommodate the diverse intellectual capacities of individuals. This claim supports the notion that mathematics is a challenging discipline that requires teachers to employ a comprehensive instructional approach. The results of this study suggest that the transactional distance between teachers and learners had an impact on the concentration of learners in online classes. This was due to the lack of teacher monitoring, which affected the ability of learners to remain focused. Some learners are suspected of using the Internet to play instead of focussing on academic matters by T3 from school A.T3 made the following comment:

It is boring. Sometimes you send learners work, they do not respond, and they are online. Maybe they are playing songs on TikTok or Facebook. There is absolutely nothing I can do for them because they are far away.

Previous remarks indicate that teachers experienced a loss of control, which is a common occurrence in classroom settings. Teachers are unable to discipline learners who choose not to complete their tasks or behave improperly due to the transactional relationship that exists between them and their learners due to school closures caused by the pandemic. The effectiveness of online learning was found to be limited due to the lack of teacher supervision, which is crucial to motivate learners to stay focused and take their education seriously (Spaull, 2020).

This theme examined the obstacles that teachers and learners face in online learning. To ensure the long-term effectiveness of online learning, it is essential for all individuals involved in the educational process to actively work towards overcoming the obstacles that hinder its implementation. The ability to act and tackle obstacles is crucial to transitioning the education system to a fully online format, considering the current era of technological progress.

4.3.6 The Potential of Using ICTs During the COVID-19 Pandemic

The present theme explores the possibilities of using ICTs in the field of education. The main research questions were addressed through interviews with secondary teachers and learners, as well as by analysing relevant documents. Based on the analysis of participants and the existing literature on ICTs in education, it has been found that online learning has the potential to advance the educational system by introducing technological innovations (LDE, 2022). The findings suggest that ICTs can be advantageous, but only if there is an improvement in the overall standard of living. This implies that the use of ICT devices can be advantageous for learners if they have the financial means to acquire them. This is due to the time-saving nature of these devices. However, learners need to exercise discipline, as teachers can only provide instruction and learners may be tempted to use online platforms for purposes unrelated to their studies. The school A T1 emphasised the importance of learner discipline in ICT with the following statement:

ICTs can be helpful if the government can provide schools with gadgets strictly programmed for online education.

The statement above highlights that providing learners with unprogrammed electronic equipment can be a disadvantage, as they may still use these ICTs for non-academic activities such as streaming films. The issue of discipline was highlighted in the South African Democratic Teachers' Union Shiluvane Circuit report (2023). According to the report, teachers expressed disappointment in the behaviour of learners in classrooms. Specifically, it was observed that many learners misuse school smart tablets by watching films instead of using them for educational purposes. It is suggested that the government develops school smartphones with restrictions on unauthorised programmes.

The study found that secondary learners were capable of learning using applications and websites. According to the DBE (2020b), the government is expanding its efforts to support learners to embrace digital learning. In collaboration with Mindset, the government has created grade 11 study guides that align with the South African curriculum. These study guides are available on Google Play, the Apple Store, and Microsoft accounts for a wide range of topics.

The current study also discovered that digital learning provides learners with exposure to technology, which can be used in the future to investigate various career options. During a focus group discussion at School A, a participant identified as L4 shared his perspective on the potential benefits of online learning. L4 made the following claims about how online learning can help prepare learners to be technologically proficient.

The world uses technology for almost everything. Education is the key to the world of technology, so ICTs would be a tremendous weapon to help us as learners fit into the world of technological advancement.

The above statement implies that we are now living in an era characterised by advanced technological advancements. The statement suggests that education is the only effective means of introducing children to technology. One could argue that by fully integrating technology into the education sector, learners will acquire the necessary skills to become valuable contributors to society. This is because technology plays a significant role in various aspects of society. The use of ICTs in secondary schools provides numerous benefits and helps learners better transition to higher education. This is because on-line learning methods are predominantly

employed in tertiary institutions (DHET, 2020). The study found that online learning facilitates teachers' independence in finding solutions and promotes the development of self-confidence, self-identity, and maturity. A teacher from school B, T8, expressed that:

When I do not understand certain topics, I will simply Google wherever I am; I have to wait for my dad at school to help me.

The study revealed that when teachers have difficulty understanding certain topics, they rely on Google for assistance instead of waiting for their designated helper at school. The statement above implies that the Internet could make subject matter more accessible and easier to understand, regardless of time or location. Additionally, the integration of ICTs into education can facilitate rapid knowledge acquisition for individuals. The key importance of this study lies in its demonstration of how digital learning enables teachers to become self-reliant, thus improving their confidence.

The study discovered that ICTs in education not only enable teachers to become self- sufficient but also have the potential to bridge the transactional distance between teachers and learners, as well as between learners and schools. A learner identified only as L7 from school B mentioned the following:

During COVID-19, our class teacher used the Facebook page to give us updates, activities, and feedback. In my opinion, these platforms can also be used during recess.

The extract reveals that teachers used ICTs during COVID-19 to communicate with learners when they were at home. This seems fundamental, as the learners reveal that those social media platforms can be used for instructional purposes in the future even when the learners are far away from educational institutions during the holidays. It becomes clear that ICTs can be used as supplements by secondary teachers and learners to make teaching and learning possible anytime and anywhere.

The report from DBE (2021) on methods to increase grade 12 results further revealed the essential potential. The report indicated that ICTs have potential because they are user-friendly and can be used in the future to address the

challenges of textbook shortages in schools.

Additionally, the research indicates that online learning can establish an environment without paper use. A teacher named T2 from school A made the following statement:

Online learning has the potential to reduce or eliminate the issue of littering in classrooms.

The statement suggests that school environments are unclean due to learners polluting them by throwing papers. The claim proposes that electronic learning has the potential to replace books and printed papers, which are known to contribute to school pollution.

4.4 CONCLUSION

In this chapter, data collected from twenty participants from two sampled secondary schools are presented, analysed, and interpreted. The study participants comprised two school managers, four department heads, six junior teachers, and ten learners from two participating schools found in the Shiluvane Circuit of the Mopani-West District in Limpopo Province. The collected data was interpreted and thematically analysed using the three identified interrelated main themes, namely: the influence of using ICTs for teaching and learning during the COVID-19 pandemic, the impact of using online learning in secondary schools as a delivery mode during the COVID-19 pandemic and the potential of using ICTs in education.

The study found that the COVID-19 pandemic affected teachers and learners. Some of these effects are extra work because teachers miss school due to the COVID-19 pandemic, lost knowledge because schools have to use rotating attendance systems because they do not have enough classrooms, bad lesson planning because the curriculum has been cut, and lower standards for learners' progress because the government changed the weighting of SA-SAMS. The study revealed the positive effects of COVID-19 on education, such as the implementation of blended learning and team teaching. The study also found that teachers and learners adopted the Internet due to their possession of ICT, and it also revealed that some did not use the Internet because they did not have the technological tools. The study also found that readiness and attitude play a role in

the integration of online learning. The study outlined the potential of using the Internet in education, such as preparing learners to be technologically fit, providing a wide range of information that simplifies the subject matter, breaking the transactional distances that exist between learners and teachers, learners and schools, and replacing physical books to create a clean school environment. In the subsequent chapter, Chapter 5, to be specific, the researcher provides a summary of the study findings, conclusions, recommendations, limitations, and implications.

CHAPTER 5: SUMMARY OF THE STUDY FINDINGS, RECOMMENDATIONS, LIMITATIONS, AND CONCLUSIONS

5.1 INTRODUCTION AND OVERVIEW OF THE STUDY

Chapter 1 presented the introduction of the research process that describes the background, problem statements, research questions, study objectives, research methodologies, definition of operational concepts, study limitations, delimitations, and ethical considerations.

Chapter 2 presented a concise review of the literature based on the use of ICTs for instructional purposes in schools during the COVID-19 pandemic.

Chapter 3 presented the research design and methodology that were used to carry out the study.

In Chapter 4, the researcher analysed, interpreted, and discussed the key findings of the study sourced from interviews conducted with participants and the reviewed literature.

In this chapter, Chapter 5, the researcher presented a summary of the study's main findings, recommendations, limitations, and conclusions. This current study presented data on the experiences of teachers and learners of using ICTs for educational purposes during the COVID-19 pandemic from the two secondary schools found in the Shiluvane circuit of Mopani-West in Limpopo Province, Republic of South Africa. The study participants consisted of secondary school teachers, learners, and principals. The researcher selected teachers for the study based on their years of experience as teachers and deliberately considered their specific positions within the schools sampled. In addition, the researcher selected learners based on their gender and the grades they attended school. What follows is a summary of the main findings of the study.

5.2 SUMMARY OF THE MAIN FINDINGS OF THE STUDY

The researcher explored the use of ICTs for teaching and learning in secondary schools in Shiluvane Circuit, Mopani West District, Limpopo Province during the COVID-19 Pandemic. The study had to answer three important questions, which were:

- What are the experiences of teachers and learners of using ICTs for teaching and learning during the COVID-19 pandemic?
- What are the opportunities and challenges associated with the use of ICTs for teaching and learning during the COVID-19 pandemic?
- What potential do ICTs have to make teaching and learning possible during the COVID-19 pandemic?

The above research questions were to help the researcher in achieving the study objectives, which were:

- To explore the experiences of teachers and learners of using ICTs for teaching and learning during COVID-19 in two secondary schools of the Shiluvane Circuit, Mopani District.
- To discover the effects of COVID-19 on teaching and learning in secondary schools in Shiluvane Circuit in Mopani District.
- Explore the potential of ICTs to improve teaching and learning in secondary schools.

The interactions between participants and researchers during the interviews and the data obtained from the documents yielded results that revealed the readiness, attitudes, and perspectives of teachers and learners toward the use of digital learning during COVID-19. Study participants answered a set of semi-structured open-ended questions during the interview process, allowing them to share their experiences regarding the use of ICTS for learning purposes. The following six themes emerged from the collected data:

- The influence of using ICTs for educational purposes during the COVID-19 pandemic.
- The adoption of ICTs during COVID-19.
- Access to ICT tools.
- The benefits of using ICTs for teaching and learning during the COVID-19 pandemic.
- The challenges of using ICTs for educational purposes during COVID-19.

- The potential of using ICTs in education.

Participants' responses to the first research question revealed that secondary teachers and learners understand the importance of ICTs in teaching and learning and that COVID-19 has changed the overall normal functioning of the education sector. They further revealed the importance of implementing digital learning and team teaching in schools as practical solutions to the problems emanating from the COVID-19 pandemic. Using this question, the study was able to uncover the impact of using ICTs for educational purposes in secondary schools during the COVID-19 pandemic.

Furthermore, participants highlighted several benefits and challenges that they faced due to the sudden transition to digital learning during the COVID-19 crisis. The study revealed that many advantages emerged from using ICTs during the pandemic, and some of them are the following: breaking the transactional distances that exist between teachers and learners and between learners and schools. Carlos, Manuel, and Juan (2021) conducted a study on the use of electronic learning during COVID-19 in Spain, revealing that some teachers and learners enjoyed the benefits of digital learning due to their preparedness, ownership of the necessary ICTs, and positive attitude toward its implementation.

In addition to the benefits of ICTs, participants also outlined the main challenges associated with the use of digital learning during COVID-19. Those challenges were, for example, a lack of suitable ICT devices, a lack of training, and poor network connectivity. The responses of the participants to the question revealed that the government did not invest much in online learning, and, on the other hand, the country was not completely ready to embrace e-learning due to Eskom's electricity cuts (DBE, 2020b). Additionally, the learners revealed that they could not use the online learning method due to their economic status; some of the learners did not have mobile phones. Their parents could not pay them because most were unemployed. The participants also revealed that online learning can improve the academic performance of learners in schools as it allows access anytime and anywhere. Furthermore, they revealed that ICTs can ensure that teaching and learning continue to function without interruptions. The study reveals that due to precautionary measures, teachers and learners with pre-existing health conditions were absent from school. This resulted in

in increased workloads for teachers, a rise in ill-discipline within schools, and a reduction in available classroom space.

Participants' teachers indicated that learners with low academic performance were the most affected and needed additional support and attention. The study findings revealed that to address these challenges, teachers explored the potential solutions of online learning and team teaching. Of the havoc that the school system experienced due to the crisis; the COVID-19 pandemic has had some positive effects on education. One of these was the implementation of team teaching, which allows learners to acquire knowledge from a variety of voices and teaching styles from their teachers. Furthermore, the team-teaching approach has fostered stronger professional relationships among teachers (DBE, 2020d).

Teachers indicated that they are unsure about the comprehension of slow learners and that they are facing challenges in completing the curriculum coverage. The study findings indicated that curriculum changes have caused learners to not receive the full content necessary for their upcoming grades, resulting in gaps in their understanding. The LDE (2022) report on matriculation results confirms that learning gaps in grade 11, which are essential for understanding grade 12 content, impacted the learners' performance.

Analysis of the responses of the participants showed that the COVID-19 pandemic has had a significant impact on teaching and learning. The study has shown that the COVID- 19 national lockdown regulations had a significant impact on teachers and learners who relied solely on traditional teaching methods. However, those who used blended teaching and learning methods were able to adapt and continue with their lessons.

The study findings revealed that the South African Department of Education has not provided adequate service-based ICT education, resulting in difficulties when it comes to incorporating ICT into teaching and learning. The study also found that there is a lack of creativity and technological proficiency among many senior teachers, while junior teachers are well prepared for online learning. The study results indicate that certain teachers possess the skills and knowledge required for effective use of ICT as a teaching and learning tool.

Despite acknowledging the shift to online learning due to COVID-19, the

department still has potential for further improvement. According to DBE (2021), government has historically failed to make sufficient investments in ICT facilities. The study findings suggest that public secondary schools encountered difficulties in fully implementing digital learning due to inadequate government funding for this instructional approach.

The study also revealed that the government is actively promoting the integration of ICTs in education as a means of improving the academic performance of learners. The lack of the necessary technological resources in schools has led to an ineffective implementation of the initiative. The study revealed that the absence of ICT devices, such as computers and Wi-Fi routers, has an impact on the success of online learning. The reason for the limited availability of ICT tools in schools is the insufficient funds allocated to purchase these resources. Furthermore, the study revealed that most schools in the Shiluvane circuit are classified as non-fee-paying schools. As a result, they face financial constraints that prevent them from purchasing data bundles and gadgets. T1 from school 1 reveals that the government provided funding for COVID- 19 planning at school A to ensure smooth in-person instruction and the successful implementation of a rotational attendance system for learners.

The study findings clearly show that the financial situation of the learners also plays a significant role in determining the effectiveness of online learning during the COVID-19 pandemic. Many learners who reside in remote areas face a lack of access to ICT devices. Furthermore, their phones are not suitable for online teaching and learning as they lack suitable software for digital learning. Zinyemba, Nhongo, and Zinyemba (2021) highlight the financial challenges faced by parents in rural areas, particularly those who are unemployed. These difficulties often result in a reduced ability for parents to provide their children with ICT devices for online education. The lack of technological tools has harmed the online learning method. This is because people who had personal ICT devices were the ones who were able to use ICTs for educational purposes.

Isolated rural communities in the Shiluvane Circuit house many schools, where a notable proportion of parents are unemployed. The negative impact of not having technological tools becomes apparent in online learning. The study showed that

people who had the financial resources to buy personal ICT devices were the only ones who used ICTs for educational purposes since the government did not provide them.

The study found that the COVID-19 pandemic has resulted in increased use of ICTs for educational purposes. Current research indicates that the improved discipline of learners and the sufficient time allocated for home learning during the pandemic have resulted in greater benefits from digital learning. The study revealed that the government is actively encouraging the use of ICT tools, such as televisions and radio stations, for educational purposes. According to Frans (2021), the degree to which digital learning is embraced depends on the discipline of learners and the accessibility of technological devices.

The findings of the focus group interviews indicated that the learners were able to effectively understand and comprehend information when using digital learning platforms. Teachers and learners use social media platforms to facilitate lessons and bridge the gap between them, exchanging knowledge and educational resources. Spitzer and Musslick (2021) indicate that online learning has played a crucial role in fostering a sense of responsibility among learners, as it has shifted the responsibility of facilitating the learning process from teachers to learners themselves. The study revealed that the learners also benefited from using internet browsers, as they were able to research specific topics in different learning areas.

This thesis also examined the difficulties encountered by secondary teachers and learners as they strive to incorporate digital learning into their teaching and learning experiences during the COVID-19 pandemic. The crucial issues revolve around the ability to access on-line platforms, the insufficient availability of technological resources in schools, and society's lack of preparedness to support e-learning. Sibanda and Mathwasa (2021) revealed that the occurrence of electric power cuts has had a significant impact on network connectivity, creating difficulties for certain learners in accessing educational programmes. Learners who residing in areas with limited network connectivity faced difficulty accessing information during power outages (DBE, 2021). They had to wait for electricity to be restored to establish stable network connections. Furthermore, learners faced difficulties in accessing online learning platforms, as they lacked the essential ICT resources required for online learning. The learners needed access to digital tools equipped

with suitable software for online learning to be effective during the pandemic. The participating teachers expressed their support of using ICTs for teaching and learning amid the COVID-19 pandemic.

However, learners encountered difficulties because they did not have access to the required ICT resources.

Participants expressed their dissatisfaction with technology-based learning. They had grown accustomed to the teacher's use of practical illustrations during classroom instruction and felt that this method was more effective for their learning. The study revealed that the impact of ICTs on reducing the transactional distance between teachers and learners was largely experienced during the pandemic because teachers encountered a decrease in control. Furthermore, it was also noted that to successfully transition the education system to a fully online format, it is essential to have the ability to act and address any obstacles that may arise. This is particularly important given the current era of technological progress.

The current study explores the difficulties that secondary teachers and learners experienced when trying to incorporate digital learning into their education during the COVID-19 pandemic. The ability to overcome these obstacles is essential to ensure the long-term effectiveness of online learning (DBE, 2022). The findings of this study indicate that certain factors contributed to the lack of success of the digital learning method. Lack of proper infrastructure, including power supply and network connectivity, emerged as one of the main reasons contributing to the lack of success of the digital learning method. This limitation has made it difficult for the government and the community to implement and apply technology effectively as a teaching and learning tool during the COVID-19 pandemic.

The study also examined the potential of using ICTs for teaching and learning, with a specific focus on the advantages of online learning. The findings indicate that the use of ICTs has the potential to improve the educational system through technological innovations. However, it is important to note that these advancements can only be effective if there is an overall improvement in the standard of living. The utilisation of ICT devices can offer numerous benefits to learners, assuming they possess the financial means to obtain them. However, learners must exercise discipline in their usage.

The 2023 report of the South African Democratic Teachers' Union Shiluvane Circuit brought attention to the problem of learners using school smart tablets for activities unrelated to their academic studies. The government is taking steps to improve its security.

support for learners in adopting digital learning. As part of this initiative, study guides for grade 11 are now available on Google Play, the Apple Store, and Microsoft accounts (DBE, 2022). Digital learning provides learners with exposure to technology, enabling them to develop skills that can be used in the future to explore a wide range of career options. The study found that the use of ICT in education helps teachers become more independent in problem solving and promotes the growth of self-confidence, self-identity, and maturity. The use of ICT in education has multiple benefits. This current study found that digital learning empowers teachers to become more self-sufficient and helps to bridge the gap between teachers and learners, as well as between learners and schools. The DBE (2021) report emphasises the significant potential of ICTs in addressing the problem of textbook shortages in schools and creating a paperless environment. Research findings suggest that ICTs can improve living conditions, save time, and help learners adapt to technology. However, learners need to exercise discipline to avoid using the Internet for non-academic purposes.

5.3 STUDY RECOMMENDATIONS

Data obtained through interviews with participants and document analysis regarding the use of ICTs for educational purposes inform the recommendations of this study. This study presents recommendations for the adoption of digital learning in secondary schools.

- The study conclusion clearly shows that schools, teachers, and learners have not fully embraced the use of ICTs in education. The failure of the Department of Basic Education to invest in technology that allows online learning is the main reason for this lack of adoption. Therefore, this study recommends that the government provide schools with the necessary ICT infrastructure. It is also important that the department provide regular training programmes for the professional development of ICT teachers.
- The findings of this study revealed that the learners who fully used the online

learning approach had their own personal ICT tools. Therefore, the present study suggests that parents should consider purchasing essential electronic devices that will enable their children to actively participate in online learning.

- Data collected from participants and the literature showed that both teachers and learners found online learning to be beneficial. They used online platforms to access shared learning resources, exchange study tips, and participate in revision activities. Therefore, it is recommended that teachers and learners continue to use technology to improve the academic performance of learners.
- The study's conclusion highlights the difficulties faced by both teachers and learners during the transition to online learning, primarily due to power outages and unreliable network connectivity. The study therefore recommends that there should be close collaboration between the government and all other stakeholders.

5.4 RECOMMENDATIONS FOR FURTHER STUDY

The researcher conducted a comprehensive study on the experiences of teachers and learners with digital learning during the COVID-19 pandemic. However, more research is required to explore the following research areas.

- Cordini and De Angelis (2021) conducted a study on the effects of COVID-19 on education. Their research found that parents were preventing their children's return to school due to concerns surrounding the COVID-19 pandemic. Based on the findings of this study, research could be conducted on the influence of parental participation in facilitating online learning for their children.

- In the current study, the researcher studied the readiness of teachers and learners for electronic learning. The study revealed that there is a need to investigate the impact of government funding on the implementation of online learning methods in educational institutions.

- In their respective studies, Kallo, Mitchell, and Kamalodeen (2020), as well as Kulal and Nayak (2020), have examined the various responses to the COVID- 19 pandemic that present significant challenges. Teachers face

challenges in facilitating online learning due to inadequate training and professional development opportunities for conducting virtual classes. Based on the findings, the researcher recommends initiating a study to explore the impact of ICT teacher training on learner learning outcomes.

- The present study has revealed that learners are highly dependent on the use of mobile phones. There is a need to conduct a study to examine the impact of technology-based instruction on learners' motivation and learning outcomes.
- Researchers should conduct more studies to investigate the implementation of digital learning in secondary schools in various provinces in South Africa. This will contribute to the existing body of literature and facilitate comparative analysis among the different provinces.

5.5 STUDY LIMITATIONS AND DELIMITATIONS

Although this study produced the results the researcher hoped to achieve in terms of the research paradigm, design, conceptual framework, and objectives, there were some unavoidable limitations and challenges that must be recognised. Like all case studies, the interpretation of the findings of this study is limited in several ways. The sample size used in the study was small and it is important to note that case study research does not allow for broad generalisations about a larger population. The teachers and learners' experiences discussed here were of participants in the Shiluvane Circuit, Mopani-West District, and as a result, the findings of this study could not be generalised to other circuits. Another challenge was the issue of getting enough people to participate in the study. The researcher would have liked to include as many participants as possible to gain a broader understanding of the topic under investigation, but limited resources made this impossible. The subjective nature of human experiences limited the scope of the study, and as a result, the researcher decided to use the qualitative research method for data collection and apply thematic data analysis. Despite the limitations and delimitations that the researcher experienced, the study managed to achieve its objectives as established at the beginning.

5.6 CONCLUSIONS

The findings of this study have provided valuable information on the importance of online learning for teachers, learners, government, and society. Three factors closely tie together the successful integration of technology in education: school readiness,

Accessibility of ICT tools and attitudes of teachers and learners toward online learning. The study examined the experiences of teachers and learners in Shiluvane District, Mopani District of Limpopo Province, regarding the use of ICTs for teaching and learning. The data was collected through interviews and document analysis and then thematically analysed. The developed themes effectively addressed the research questions and successfully achieved the objectives of the study. The study findings indicated that participants recognised the importance of online learning and acknowledged that incorporating ICTs into the secondary school curriculum is essential. This demonstrates a prominent level of preparedness among participants to use ICTs in education. However, this study has uncovered several factors that hinder teachers and learners in effectively implementing online learning. The study was able to show practical solutions that can help overcome the challenges. This study adds to the existing literature on online learning in secondary schools. It focusses on the experiences of teachers and learners in two public secondary schools during the COVID-19 pandemic, specifically with respect to the use of ICTs for teaching and learning.

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ANNEXURES

ANNEXURE 1: RESEARCH ETHICAL CERTIFICATE FROM THE UNIVERSITY OF VENDA

ETHICS APPROVAL CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Mr XE Chauke

STUDENT NO:
11630960

PROJECT TITLE: **Teachers' and learners' experiences of using ICTs for teaching and learning during COVID-19: A case of two secondary schools in Shiluvane Circuit.**

ETHICAL CLEARENCE NO: **FHSSE/23/CSEM/04/1406**

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr NP Mafenya	UNIVEN, Curriculum Studies	Supervisor
Dr MG Muremela	UNIVEN, Curriculum Studies	Co-Supervisor
Mr XE Chauke	UNIVEN, Curriculum Studies	Investigator – Student

Type: master's research
Risk: Straightforward research without ethical problems (Category 1)
Approval Period: June 2023 – June 2024

The Research Ethics Social Sciences Committee (RESSC) hereby approves your project as indicated above.

General Conditions
While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following.

- The project leader (principal investigator) must report in the prescribed format to the REC:
  - Annually (or as otherwise requested) on the progress of the project, and upon completion of the project.
  - Within 48hrs in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
  - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the REC. Would there be deviated from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date; a new application must be made to the REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the REC retains the right to:
  - Request access to any information or data at any time during the course or after completion of the project,
  - To ask further questions; Seek additional information; Require further modification or monitor the conduct of your research or the informed consent process.
  - withdraw or postpone approval if:
  - Any unethical principles or practices of the project are revealed or suspected.
  - It becomes apparent that any relevant information was withheld from the REC or that information has been false or misrepresented.
  - The required annual report and reporting of adverse events was not done timely and accurately,
  - New institutional rules, national legislation or international conventions A it necessary

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE
Date Considered: June 2023

Name of the RESSC Chairperson of the Committee: Prof TS Mashau

Signature

UNIVERSITY OF VENDA
OFFICE OF THE DIRECTOR
RESEARCH AND INNOVATION
2023 -06- 14
Private Bag X5050
Thohoyandou 0950

University of Venda
PRIVATE BAG X5050, THOHOYANDOU, 0950 LIMPOPO PROVINCE SOUTH AFRICA
TELEPHONE (015) 962 8504/8313 FAX (015) 962 9060
"A quality driven financially sustainable, rural-based Comprehensive University"

ANNEXURE 2: RESEARCH ETHICAL CERTIFICATE FROM LIMPOPO DEPARTMENT OF EDUCATION

CONFIDENTIAL

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE PREMIER

Office of the Premier

Research and Development Directorate

Private Bag X9483, Polokwane, 0700, South Africa

Tel: (015) 230 9910, Email: mokobij@premier.limpopo.gov.za

LIMPOPO PROVINCIAL RESEARCH ETHICS

COMMITTEE CLEARANCE CERTIFICATE

Review Date: 05 July2023

Project Number: LPREC/94/2022: PG

Subject: Teachers' and Learners' Experiences of Using ICTs for Teaching and Learning during COVID-19: A Case of Two Secondary Schools in Shiluvane Circuit

Researcher: Chauke XE

Chairperson: Prof I Swarts

Swarts

Chairperson: Limpopo Provincial Research Ethics Committee

The Limpopo Provincial Research Ethics Committee (LPREC) is registered with National Health Research Council (NHREC) Registration Number **REC-111513-038.**

Note:

i. **This study is categorized as a Low Risk Level in accordance with risk level descriptors as enshrined in LPREC Standard Operating Procedures (SOPs)**

ii. **Should there be any amendment to the approved research proposal; the researcher(s) must re-submit the proposal to the ethics committee for review prior data collection.**

iii. **The researcher(s) must provide annual reporting to the committee as well as the relevant department and also provide the department with the final report/thesis.**

iv. **The ethical clearance certificate is valid for 12 months. Should the need to extend the period for data collection arise then the researcher should renew the certificate through LPREC secretariat. PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRIES.**

ANNEXURE 3: APPLICATION TO CONDUCT THE STUDY IN THE SHILUVANE CIRCUIT

P O BOX 275

NKURI

0858

21 JUNE 2023

THE CIRCUIT MANAGER

SHILUVANE CIRCUIT

DEAR DR. MASETLA

REQUEST TO CONDUCT RESEARCH IN THE SHILUVANE CIRCUIT

I am Chauke XE, and I am writing this letter to ask for your permission to conduct a research study titled: Teachers' and learners' experiences of using ICTs for teaching and learning during the COVID-19 pandemic: A case of two secondary schools in Shiluvane Circuit of Mopani District, Limpopo province. Here is an application letter, as well as the University of Venda and Limpopo Department of Education ethical clearance certificates.

I will be grateful if you can put the above-mentioned facts in order, as I keen to learn about the teachers' and learners' experiences of using ICTs for education during COVID-19 pandemic in your circuit.

Yours sincerely

CHAUKE XE

ANNEXURE 4: PERMISSION TO CONDUCT THE STUDY IN THE SHILUVANE CIRCUIT

Re: PERMISSION TO CONDUCT RESEARCH: SHILUVANE CIRCUIT

Wed, 21 Jun 2023, 20:04

Thanks Dr, well received!

On Wed, 21 Jun 2023, 19:29 Modjadji Amanda, <amandamodjadji@yahoo.com> wrote:
Sir Chauke X.E

1. The above matter bears reference
2. The request to conduct research in two of our secondary schools about the topic," Teachers' and learners' experiences of using ICT for teaching and learning during COVID 19" is granted.
3. Take into consideration conditions stated Provincial Department of Education.
4. Produce both the letters of permision from Province and Circuit at the two schools you are intending to conduct your research.
5. As circuit we wish you the best in your studies and appreciate the fact that your study will make a positive impact in the faculty of Education.

Duly signed
Dr. Masetla 21 June 2023
Shiluvana circuit Manager

ANNEXURE 5: PARTICIPATING TEACHERS' CONSENT FORM

CONSENT FORM FOR TEACHERS:

General:
Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, (***CHAUKE XIHLUKE EXCELLENT***), about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: **FHSSE/23/CSEM/04/1406_**,
- I have also received, read and understood the above written information (*Participant Letter of Information*) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

I, …… …… …… ……

(***CHAUKE XIHLUKE EXCELLENT***) herewith confirm that the above participant has been fully

Informed about the nature, conduct and risks of the above study.

Full Name of Researcher

CHAUKE XIHLUKE EXCELLENT Date**: 20/07/2023** Signature: 

Full Name of Witness (If applicable)

Date: 20/07/2023 Signature……..

Full Name of Legal Guardian (If applicable)
…… Date…… Signature……..

ANNEXURE 6: PARTICIPATING LEARNERS' CONSENT FORM

CONSENT FORM FOR SCHOOL LEARNERS:

General:
Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, (***CHAUKE XIHLUKE EXCELLENT***), about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: **FHSSE/23/CSEM/04/1406** _,
- I have also received, read and understood the above written information (*Participant Letter of Information*) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

I, ...

(***CHAUKE XIHLUKE EXCELLENT***) herewith confirm that the above participant has been fully

Informed about the nature, conduct and risks of the above study.

Full Name of Researcher

CHAUKE XIHLUKE EXCELLENT Date**: 20/07/2023** Signature: 

Full Name of Witness (If applicable)

Date: 20/07/2023 Signature.....

Full Name of Legal Guardian (If applicable)
..... Date..... Signature.....

ANNEXURE 7: INTERVIEW GUIDE FOR TEACHERS

TEACHERS INTERVIEW GUIDE

Study title: Teachers' and learners, experiences of using ICTs for teaching and learning during COVID-19 pandemic: A case of two secondary schools in Shiluvane Circuit.

Student: CHAUKE XIHLUKE EXCELLENT

Student number: 11630960

Degree: M.Ed.: Curriculum studies

Questions:

1. What effects does COVID-19 have on the teaching process?
2. Optimistically, there were opportunities for using ICTs in education that you came across during the pandemic. What were they, and why?
3. What were the challenges that you met when you switched from the traditional teaching method to online learning, and why?
4. In addition to the alternatives used, what are the mitigating factors that can help improve the effectiveness of technological teaching during a pandemic?
5. What is the potential of using ICTs for educational purposes, and why?

ANNEXURE 8: INTERVIEW GUIDE FOR LEARNERS

LEARNERS INTERVIEW GUIDE

Study title: Teachers' and learners, experiences of using ICTs for teaching and learning during COVID-19 pandemic: A case of two secondary schools in Shiluvane Circuit.

Student: CHAUKE XIHLUKE EXCELLENT

Student number: 11630960

Degree: M.Ed.: Curriculum studies

Questions:

1. What effects did COVID-19 have on learning process, and why?
2. ICTs provided opportunities. What were those opportunities, and why?
3. What were the main challenges in moving away from the traditional classroom method to online learning, and why?
4. Do you think there are any alternatives that can be used to make learning interesting and effective? Support your answer.
5. What potential does learning online have, and why?

ANNEXURE 09: ENGLISH LANGUAGE EDITING DECLARATION CERTIFICATE

Jale Professional Certificate of English Language Editing

Author: **CHAUKE XIHLUKE EXCELLENT (11630960)**

This is to certify that the manuscript titled Teachers' and Learners' Experiences of Using ICTs for Teaching and Learning during COVID-19: A Case of Two Secondary Schools in Shiluvane Circuit has been edited for English language -, grammar, punctuation, and spelling by Prof J Nyoni, an expert in the field of Education leadership, Management, Law and policy. The manuscript has been reviewed and edited to ensure that it meets the highest standards of English usage.

Prof J Nyoni guarantees that the manuscript has been edited to the best of his ability and that it is free from errors in English language usage. The certificate is issued on 17/01/2024.

Prof J Nyoni

University of South Africa

Jale HOLDINGS

ANNEXURE 10: TURNITIN ORIGINALITY REPORT

Teachers' and Learners' Experiences of Using ICTs for Teaching and Learning during COVID-19: A Case of Two Secondary Schools in Shiluvane Circuit.

ORIGINALITY REPORT

15%	13%	6%	4%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

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