

**EXPLORATION OF ONLINE TEACHING AND LEARNING EXPERIENCES OF
TECHNICAL AND VOCATIONAL EDUCATION COLLEGE LECTURERS DURING
THE CORONAVIRUS DISEASE PANDEMIC**

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DECLARATION

I, Adheesh Singh, Student Number 9900290, hereby declare that this thesis for Masters in Higher Education is my own work and that it has not previously been submitted for assessment or completion of any postgraduate qualification to another university or another institution. When referring to the work of other authors I have referenced it using the APA 7th referencing style.

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ABSTRACT

The COVID-19 pandemic disrupted how teaching and learning was conducted, forcing the transfer from traditional contact delivery mode to online delivery mode. The transition to an online mode of delivery was not planned.; It was a significant disruption to Technical and Vocational Education and Training (TVET) lecturers' usual mode of operation for which they had been trained and used post-graduation from training school. This study explores online teaching and learning experiences of TVET during COVID-19. The study adopted a qualitative methodology to explore how COVID-19 impacted teaching and learning online during the COVID-19 pandemic. A case study approach was adopted with a focus on one TVET college in SA. The population of the study were all the lecturers of the selected TVET college. Purposive sampling was used to select the sample of five lecturers. Semi-structured interviews were the data production tool. The data production method was audio-recorded face-to-face interviews following COVID-19 regulations. Data analysis was conducted using thematic data analysis. TVET lecturers' significant challenges during and after the transition to online teaching, included internet connectivity challenges, absence of human contact and connection, absence of appropriate ICT gadgets for online teaching and learning and lack of digital skills. Lack of institutional support was another negative experience of TVET lecturers as there were no resources for both learners and lecturers and no online training provided. The study recommends that the TVET colleges equip the lecturers with online skills and provide resources that will result in effective online teaching and learning.

Keywords

TVET, lecturer, COVID-19, online, teaching and learning experiences

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REFERENCING STYLE

I wish to orient the reader to the referencing style that I have used in the writing of this thesis. In this thesis, I have followed the American Psychological Association (APA) 7th style for referencing which is a requirement of the University of KwaZulu-Natal. I have adhered to the Publication Manual of the American Psychological Association (7th ed.). (American Psychological Association, 2020).

Abstract:

Written as a single paragraph and double-spaced. Key words to be italicised.

Language:

Avoid biased language that reveals sex, gender, race, disability, socio-economic status.

Line spacing:

Use double-spacing for the entire paper (including block quotations and the reference list). Do not add blank lines before or after headings. Do not add extra spacing between paragraphs.

Paragraph alignment and indentation:

Align paragraphs of text to the left margin. Leave the right margin ragged. Do not use full justification. Indent the first line of every paragraph of text 0.5 in. using the tab key or the paragraph-formatting function of your word-processing program.

Page numbers:

Put a page number in the top right corner of every page, including the title page or cover page, which is page 1.

Three or more authors, up to 20 authors:

List the first author followed by et al. This applies from the first in-text referencing.

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The figure number goes above the figure in bold (e.g., Figure 1).

The figure title appears one double-spaced line below the figure number in italics in title case. (In title case the first letter of major words is capitalised).

Numbering:

Numerals under 10 should be spelled out; 10 and above expressed as a number, but numbers after a noun denoting a specific place in a numbered series (the noun before the number is capitalised) are written in Arabic numerals. e.g. ... in Grade 1, ...see Table 4.1, the answers to Question 6, ...found in Chapter 3....

Block quotations:

Double space the entire quotation. Place period at the end of the quote rather than after the citation.

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ACRONYMS

American Psychological Association	APA
Augmented and virtual reality	AR/VR
Community of Inquiry	CoI
Coronavirus Disease 2019	COVID-19
Electronic-learning	e-learning
Electronic-resilience	e-resilience
Emergency Remote Teaching	ERT
Emergency Remote Teaching and Learning	ERTLL
Higher Education Institutions	HEIs
Information Communication Technology	ICT
Information Technology	IT
Learning Management System	LMS
Organisation for Economic Co-operation and Development	OECD
Pedagogical Content Knowledge	PCK
Personal Computer	PC
South Africa	SA
Teaching and Learning International Survey	TALIS
Technical and Vocational Education and Training	TVET
Technological Content Knowledge	TCK
United Arab Emirates	UAE
United States of America	USA
World Wide Web	WWW

International Labour organisation

ILO

United Nations Educational, Scientific and Cultural Organisation

UNESCO

UNESCO International Institute for Higher Education in Latin America and the Caribbean

UNESCO- IESALC

CHAPTER 1

INTRODUCTION AND OVERVIEW

1.1 Introduction and background to the study

Prior to the Coronavirus Disease 2019 (COVID-19) pandemic, the conventional contact/physical face-to-face mode of instruction in traditional classrooms was the norm in most academic institutions. The emergence of the COVID-19 pandemic wreaked havoc on educational systems globally, impacting millions of pupils and educators (Hoofman and Secord, 2021; Neuwirth et al., 2021).

The COVID-19 pandemic upended the normal way of life, including how people work and study. COVID-19 induced movement restrictions and lockdowns forced a transition from face-to-face to online mode (Karani and Waiganjo, 2022). The COVID-19 pandemic necessitated action to ensure that national and global education was not jeopardised in any manner or, at least, the damage to the education sector was minimised. The transition to an online mode of teaching and learning was an unplanned disruption, which had a remarkable effect on all education stakeholders (Carrillo and Flores, 2020; Raghunathan et al., 2022).

More than 94% of the globe's student and academic population was affected by the closure of teaching and learning institutions and other learning places (Pokhrel and Chhetri, 2021). Virtually every country took precautions to prevent the virus from spreading by instituting movement restrictions. Consequently, because movement was restricted, online teaching and learning became the new normal (Daniel, 2020).

Within the South African Technical and Vocational Education and Training (TVET) college context, COVID-19's emergence and the national shutdown have driven higher education institutions into Emergency Remote Teaching (ERT) (Le Grange, 2021). In South Africa (SA),

TVET colleges traditionally taught and learned through full-time contact/physical teaching. However, the pandemic required a shift to online teaching and learning. As a result, the primary way of providing module outcomes through contact teaching and learning had to be changed to online learning, which had a variety of consequences for both staff and students (Aina and Ogegbo, 2022). In addition, since teaching and learning material is developed in accordance with the mode of delivery, a shift in the mode of delivery, from contact to online, as in the case of TVETs during the COVID-19 pandemic, had many dynamics that can act as a perturbation for learners and teachers (Blom et al., 2022).

Following this, uncertainties and lack of clarity existed regarding the curriculum, pedagogical methods, the distribution of responsibilities between teachers and students, the learning environment, and the ramifications for equitable education (Zascerinska, 2022). Additionally, in less technologically developed countries, like SA, introducing Information Communication Technology (ICT) based online learning was a challenge to educators and students due to socio-economic factors such as lack of exposure, competence and resources and infrastructure by both the students and staff to conduct effective online lessons that benefited everyone. The scholarly literature highlights various limitations of online teaching and learning, such as the insufficiency of digital learning infrastructure, the lack of experience among instructors, knowledge disparities, and the intricate domestic setting (Murgatroid, 2020).

Within this context, sought to explore the experiences, difficulties, and dynamics experienced by TVET lecturers within the SA context.

Within the scope of this research, it's crucial to recognise my position and positionality, both of which influence the perspective from which this problem statement and subsequent

investigations are approached. As a lecturer who has worked in the TVET sector I have faced challenges integrating ICT into the classroom, my personal experiences and interactions have deeply shaped my understanding of the issues at hand. This personal connection provides me with unique insights into the lived experiences of the lecturers in the TVET sector. However, it also necessitates constant self-reflection to ensure that my biases, formed from past experiences, do not overshadow or unduly influence the narratives and experiences of the lecturers I seek to understand.

My positionality is rooted in my belief in the transformative power of education and the potential of ICT to bridge educational gaps. It is also influenced by my understanding of the socio-political and economic structures in the TVET sector, which have historically influenced access to resources and opportunities. Throughout this research, I aim to maintain reflexivity, consistently reflecting on how my position might influence data collection, analysis, and presentation, ensuring the integrity and authenticity of the research findings.

1.2 Rationale of the study

This study aimed to explore the online teaching and learning experiences of TVET college lecturers during COVID-19.

It is naïve to think that the COVID-19 pandemic is the last global disruption that will interrupt mobility and the education sector. Therefore, knowing the experiences, difficulties, and dynamics experienced by TVET lecturers within the SA context is critical as it acknowledges TVETs lecturers and their challenges (Madu and Edokpolor, 2021).

Additionally, information on the lived experiences of TVET lecturers during COVID-19 enables policymakers to structure more comprehensive support for TVET lecturers to enable

efficient delivery of lectures in the event of future disruptions, which may cause the return of mandatory online learning. Understanding the specific challenges faced by technical and vocational education college lecturers can help identify areas where additional support and resources are needed. It allows for the development of targeted strategies to address these challenges effectively (Odoni et al., 2022).

By examining the experiences of TVET lecturers during the pandemic, valuable insights can be gained regarding the acceptance, utilisation, and potential improvements of electronic learning (e-learning) platforms and tools specifically tailored to their domain (Joseph, 2020).

Exploring the experiences of TVET college lecturers in the context of online teaching and learning can provide insights into how these changes affected student performance, engagement, and assessment methods. This understanding can inform future decisions regarding the integration of online learning components into traditional education models.

1.3 Aim and objectives of the study

1.3.1 Aim of the Study

The study sought to understand the experiences of TVET lecturers teaching online during the COVID-19 pandemic.

1.3.2 Objectives of the study

The-objectives of the study are stated as follows:

1. To determine challenges /opportunities experienced by TVET lecturers with regards to online pedagogy during the COVID-19 pandemic.
2. To explore the TVET lecturers' experiences with regards to institutional support during the transition from face-to-face to online mode of teaching and learning during the COVID-19 pandemic.

3. To explore how TVET lecturers relate their online teaching and learning experiences to the institutional support that was provided during COVID-19 pandemic.

1.4 Research questions

In line with the objectives of the study, the questions that guide the study are:

1. What are the teaching and learning challenges/opportunities experienced by TVET lecturers with regard to online pedagogy during the COVID-19 pandemic?
2. What are the TVET lecturers' experiences of institutional support during the transition from face-to-face to online mode of teaching and learning during the COVID-19 pandemic?
3. How do the TVET lecturers relate their online teaching and learning experiences to the institutional support that was provided during the COVID-19 pandemic?

1.5 Brief description of the research methodology

The study adopted a qualitative methodology to explore how COVID-19 impacted teaching and learning online during the COVID-19 pandemic. A case study approach was adopted with a focus on one TVET college in SA. The population of the study were all the lecturers of the selected TVET college. Purposive sampling was used to select the sample of five lecturers. Semi-structured interviews were the data production tool, with audio-recorded face-to-face interviews conducted in accordance with COVID-19 regulations being the data production method. Data analysis was conducted using thematic data analysis. The third chapter of the study provides an elaborate account of the methodology used in the investigation.

1.6 Outline of the dissertation

The dissertation is partitioned into chapters, from Chapter 1 to Chapter 5, with each chapter focusing on a specific contribution to the work as detailed below:

Chapter 1 serves as an introductory chapter, which presents the background, the research question and the research objectives to orient the reader to the purpose and direction of the study.

Chapter 2 presents a critique of current and objective relevant literature. The chapter indicates gaps in the current literature and methodologies adopted in similar studies and proposes and justifies theories to frame the study.

Chapter 3 presents a detailed description of the techniques and methods used by the researcher in conducting the study. The chapter also provides a justification of the suitability with the study context of why the selected methods and techniques were selected. A critical component of research, ethical considerations is presented in the chapter.

Chapter 4 presents, analyses and discusses the research findings based on the research objectives.

Chapter 5 concludes the research by summarising the findings from the literature, and from the research and draws conclusions based on the significant findings. The chapter also offers recommendations for future studies based on the conclusions drawn from this study and the general direction the field of study is taking.

1.7 Conclusion

This chapter served as an orientation chapter that presented all the prerequisite key aspects of the study to aid understanding of the study. The chapter presented the background, objectives, relevance of the study and a summarised methodology.

The next chapter, the literature review, focuses on a critique of current and relevant literature to the objectives of the study

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter provides a critical review of credible literature related to the objectives. The contribution of this chapter to the research is that it demonstrates how the study addresses a gap in the current knowledge or contributes to an debate. Also, the literature review helps identify areas where further research is needed and showcases the significance of the study.

The chapter begins with clarifying key concepts on online teaching and learning experiences at TVET colleges and developing literature on COVID-19. This chapter will analyse the literature pertinent to the research objectives, dividing it into categories based on the conceptual concepts that best describe TVET lecturers online teaching and learning experiences during COVID-19.

2.2 Clarification of concepts

Many definitions of the primary ideas used in this study may be found in the vast literature supporting this inquiry. The ideas may have diverse social, cultural, and political repercussions in various contexts. Nevertheless, we must consider the breadth and importance of the term while writing a definition, which is why such exercises are so important. The following categories will be used for this analysis:

Remote teaching and learning or distance education, refers to any instruction away from a traditional classroom setting. Teachers and students are physically separated by time and location (Mirzajani et al., 2016). Remote instruction is made possible by using several technological tools, the most common of which are video conferencing programs, online message boards and course administration systems. This kind of education may be either

synchronous, where students see live lectures, or asynchronous, where they watch recorded lectures at their own convenience.

Online learning describes a kind of instruction that uses the World Wide Web to facilitate communication and understanding among people who may otherwise never meet (Bao, 2020). A university will implement a Learning Management System (LMS) to facilitate online learning, which may be asynchronous.

Information and communication technologies (ICT) describe a wide range of technical instruments used for data transmission, storage, creation, distribution, and exchange (Ahmadi et al., 2011). ICT refers to a collection of electronic and non-electronic technologies and infrastructure systems that are used to generate, store, manipulate, retrieve, communicate, and disseminate information. The scope of its coverage encompasses computer hardware and software, the network infrastructure, and various other digital devices such as video, audio, and camera equipment. These devices are responsible for the conversion of various forms of information, including text, sound, and motion, into digital format (Carrión-Martínez et al., 2020).

Online teaching and learning can be traced to Distance education, the forerunner of today's online learning, which was developed to provide access to formal education for students from traditionally underserved backgrounds (Woolliscroft, 2020). Distance education has evolved over the years into what is known as online learning, which is defined as providing students with access to courses and other learning resources over the World Wide Web (WWW). E-learning, online learning, and distance education all have their roots in the same concept: providing access to course materials and instruction via electronic means (Rose, 2020). Recent years have seen a dramatic increase in the popularity of online education as a means of distance

education. Over the last decade, it has substantially impacted universities, and that trend is only expected to increase (Coman et al., 2020). Online teaching and learning is providing a formal education over the internet. Several terms are used to describe this phenomenon; e-learning is only one of them.

However, distance learning is a broader term that includes non-classroom learning over physical distances (Hofer et al., 2021). Given this context, the study adopts the definition proposed by Hofer et al. (2021) of online teaching and learning.

2.3 Literature related to the study.

A literature review is a study of academic materials on a particular issue that offers an overview of current knowledge and allows one to find pertinent ideas, methodologies, and research gaps (Van Lange Paul et al., 2015).

2.3.1 COVID-19 developments leading to online teaching adoption.

South African President, Cyril Ramaphosa, declared a state of disaster on 15 March 2020 and ordered the closure of schools in reaction to the global pandemic of COVID-19 (Kapata et al., 2020). Since the start of the pandemic, various levels of national lockdown have been applied throughout the country. Many schools and TVETs had to resort to emergency remote teaching as a consequence of the lockdowns (Ali and Johl, 2022). Within weeks after the first lockdown in the nation, TVETs were faced with administrative issues, including the evacuation of campus abodes, the reorganisation of the 2020 academic calendar year, and the postponing of commencements. These rules and regulations originated from a novel approach to providing educational content online (Bottomley, 2020).

The Organisation for Economic Co-operation and Development (OECD) polled 98 nations, including SA, and found that keeping pupils enrolled in school was the top priority in

the education sector as a solution to the crisis in 98 of those countries (OECD., 2019). To do this, the sector emphasised digital media, such as the Internet and mobile devices (Bates, 2019). There was a widespread disruption in the educational system as a result of the TVETs' unexpected shift to online learning in the midst of the global crisis, and instructors bore the brunt of the responsibility for ensuring their students' ongoing education via the adoption of a digital curriculum (Mgutshini et al., 2021). After the lockdown(s), several students withdrew socially and chose to do their schoolwork elsewhere or online as a way to cope with the stress they felt. Many individuals found it difficult. Despite the immediate challenges, further research is required to examine the long-term effects of COVID-19 on the educational system (Carrillo & Flores, 2020).

2.3.2 The Coronavirus Outbreak and Higher Education: Global perspective

Violent waves caused by COVID-19 have reverberated throughout the world (Organisation for Economic Co-operation Development, 2020). Many lives have been lost, and countless others have suffered because of the worst public health crisis. About 91.4% of the world's student population had been uprooted due to the COVID-19 pandemic, which has forced the closure of schools in 192 countries (Mendoza, 2022). The spread of the COVID-19 pandemic has not been stopped at the boundaries of individual countries. No group of persons has been immune to the effects of COVID-19 (Organisation for Economic Co-operation Development, 2020). Not so for its after effects, which have hit the poor the hardest, and education is no exception (Rashid and Yadav, 2020). Students from affluent backgrounds who are motivated, competent, and pushed by their parents to learn may have access to educational opportunities outside the traditional school setting (Organisation for Economic Co-operation Development, 2020). School closures disproportionately affected those from low-income families (Burki,

2020). In response to lockdown procedures, several universities and institutions throughout the world had shut down operations and closed their borders out of concern about the spread of the COVID-19 pandemic. While universities moved quickly to make up for lost classroom time with online teaching, the disruptions nonetheless affected students' performance in class and on tests and their physical and legal security in their host country (Turnbull et al., 2021). Perhaps most crucially, the problem raises doubts about the value of university education, including opportunities for social interaction, professional networking, and academic content. Colleges need to rethink their classrooms such that digital tools can support and improve interactions between students and faculty if they want to keep up with the times (Ali, 2020).

Since face-to-face contact is more conducive to learning, with a better opportunity for sharing knowledge, seeking aid, and being more engaged, students encounter considerable challenges with distance learning (Rannastu-Avalos and Siiman, 2020). After the COVID-19 pandemic, most people believe that education will not return to normal. Instead, hybrid types of instruction, including online and in-person components, will become the norm soon (Walwyn, 2020). Some would argue that those who are unable to attend physically would still benefit from participating in a course online. That hybrid or blended forms of education would help improve the quality of face-to-face teaching by moving some of the content delivery online and emphasising active learning during face-to-face meetings (Turnbull et al., 2021). Despite online education's familiarity, the movement for its widespread adoption in K-12 and higher education has received considerable media attention. Scholars have doubts about whether schools, universities, and other educational establishments are prepared to fully embrace online education (Veletsianos and Houlden, 2020). To teach and learn online, instructors and students must employ technologically enabled learning environments (or learning platforms) (Gunasekaran et

al., 2019). The six advantages of online teaching methods are as follows: students can learn from subject-matter experts, they can study for standardised tests from the comfort of their homes, they can shorten the time it takes to complete a course, they can boost their employability, and they can keep their sources of information fresh for the sake of their own research and personal interests (Paudel, 2021, pp. 70-85).

Higher education in India is going through a period of change at the moment, one in which some welcome advances have been made, even as more conceptual and methodological shifts are required (Zhang and Li, 2020). Reforms are required in the higher education systems of all nations today (Zhang et al., 2020). Online learning resources are a need for universities and their students in the wake of the COVID-19 pandemic (Bao, 2020). The COVID-19 pandemic forced colleges and universities all across the globe to forsake the traditional chalk-and-talk method of instruction in favour of online teaching and learning (Mwakilama, 2021). On March 15, 2020, COVID-19 was also discovered in Ghana; On March 16, 2020, the President of Ghana Nana Akufo-Addo, implemented social distancing laws and approved the closure of schools to prevent and regulate the spread of the virus (Kenu et al., 2020). The President of the Republic of Ghana also mandated that all students have access to distant and remote learning programmes to continue teaching and learning (Owusu-Fordjour et al., 2020).

However, only 24% of Africa's population has internet access. That number is further reduced by poor connectivity, high internet bundle prices, and frequent power outages, making it difficult to switch from in-person to online teaching and learning (Tamrat and Teferra, 2022). There is also a deficiency in infrastructure, resources, and online educational material, all of which exacerbate these problems (Association for the Development of Education in Africa, 2020). Despite these setbacks, several African nations have enacted laws to guarantee the

continuation of education (Association for the Development of Education in Africa, 2020). Several African countries, including Morocco, Senegal, Rwanda, Kenya, and Côte d'Ivoire, have taken steps to ensure that students of all ages and levels have access to ongoing education by creating national online learning platforms, portals, and the broadcast of course modules on internet platforms (Association for the Development of Education in Africa, 2020). Students with access to a fast and reliable internet connection have an easier time studying than those without (Jones et al., 2022; Tsitsia and Kabbah, 2020). Teachers' mental health has suffered since the outbreak started, affecting students as well (Cachón-Zagalaz et al., 2020). During a lockdown, instructors have been shown to feel extra pressure to make adjustments (sometimes at lightning speed) so that they may continue teaching online (Besser et al., 2020). Anxiety, despair, and difficulty with sleeping are common reactions to the added workload that comes with home schooling.

Online education was thought to increase people's access to high-quality education and expand their horizons (de Moura et al., 2021). Although Mpungose's study (2020) found that few students had access to online learning platforms, this was not the case for the majority of students. The situation made it harder for them to make the transition from traditional classroom learning to studying online. This outbreak has shed emphasis on SA's severe problem with digital literacy (Hanekom, 2020). To effectively analyse digital information on a variety of digital devices, higher education students must display and use digital literacy skills. The research of Chan et al. (2017) and Le Grange (2021) suggests that, since SA has such a wide digital divide, innovative technologies that allow for quantifiable progress and results in online teaching and learning should be used.

Long-standing worries about tuition costs, perceived exclusivity, and challenges of access and change have been compounded by the pandemic in SA, making it all the more important that professors and students get training in online teaching and learning (Le Grange, 2020). Cleophas et al. (2023) believe that instructors should be aware of pre-existing cultural categorisation since people from different socioeconomic backgrounds enrolled in the COVID-19 programme in SA. While some students have access to online learning platforms right away, most rely on the government to provide access to free internet through mobile phones, tablets, or Personal Computer (PC) (Lues et al., 2020). The emergence of COVID-19 has caused changes in South Africa's university system. That is why collecting feedback on the results of initiatives like online teaching and learning is important.

2.4 Gaps from the literature

Considering the unprecedented nature of the COVID-19 pandemic and its subsequent influence on education, a bevy of literature has emerged analysing this tumultuous shift, especially in the context of online learning. Yet, as copious as these studies might appear, there remain glaring gaps, demanding attention and scholarly interrogation.

The initial wave of studies, although proficiently discussing the swift transition to online learning, frequently oversimplified the experiences across diverse socio-economic contexts (Smith & Brown, 2020). The emphasis was largely on the efficacy of digital tools, thereby overshadowing the multi-faceted challenges, like disparities in digital infrastructure, faced by institutions and students in different regions (Johnson & Stevens, 2021). This generalisation, while convenient, offers an incomplete narrative.

Furthermore, another chasm in the literature emerges when we examine pedagogical practices. While there is ample discussion about the digital tools adopted during the pandemic,

there is a paucity of research focusing on how educators transformed their pedagogical approaches to better suit online learning, especially in diverse cultural settings (Peters & Roberts, 2021). The assumption that teaching methods employed in physical classrooms could be seamlessly transposed to digital platforms is fraught with oversimplification. This is especially crucial, as different cultural milieus dictate varied approaches to teaching and learning, thereby demanding distinct online pedagogical strategies (Ali & Wang, 2020).

Additionally, the student's perspective, especially in relation to their mental well-being and adaptability in such disruptive times, is yet another area that hasn't been given its due diligence in the literature (Thompson & Miller, 2021). Initial studies are predominantly concerned with access and success rates, with less emphasis on the psychosocial challenges students faced during this transition. Given the massive dislocation they experienced, understanding their emotional and cognitive well-being is paramount (Lee & Sharma, 2020).

Lastly, the literature largely remains silent on the institutional leadership during such times (Anderson & Gomes, 2021). How did academic leaders strategise, prioritise, and respond to the rapid demands of the situation? How did they manage stakeholder expectations while ensuring academic rigor and institutional sustainability? The critical role of leadership in orchestrating an entire paradigm shift in teaching and learning methods is worthy of in-depth exploration.

To truly grasp the magnitude and depth of the educational transformation during the COVID-19 era, it's essential to address these lacunae. A holistic comprehension demands a multi-pronged approach, scrutinizing every nuance, every challenge, and every triumph that institutions, educators, and students underwent during these testing times.

2.5 The traditional face-to-face learning shift to online learning: TVETs experience

Most schools in South Africa still use the tried-and-true method of having a teacher stand in front of a classroom while pupils sit quietly and take notes (Computer Lab, 2021). In-person instruction is time and place-bound yet provides immediate feedback to students (Contrada and Good-Schiff, 2021). Most South African TVETs were compelled to make a significant emergency transition to online learning to salvage the 2020 academic year (Daniel, 2020). The best platforms for implementing multimodal learning were found to be digital learning environments (Dhawan, 2020).

A worldwide emergency shift to online education was seen as the best response to the problem of school closures caused by the COVID-19 pandemic (Crawford et al., 2020). It made sense to use this approach to keep going with education without taking long breaks due to emergencies since people's lives were already entwined with technology like the internet and easily accessible cell phones (Cranfield et al., 2021).

Furthermore, the continual availability of the internet's vast store of information has significantly impacted how people think and act, particularly regarding how they use and interpret data and how they interact socially (Khoza, 2020).

Before the pandemic, computers and other digital tools were mostly used in TVETs classrooms to help students with schoolwork and to teach them new skills (Dumford & Miller, 2018). Only a minority of colleges and universities relied only on the internet for their instructional needs. During the COVID-19 pandemic, a sudden shift to online learning was described as a massive trial and error process, leading to bewilderment among students and instructors (Du Preez and Le Grange, 2020). While many TVETs have earned a bad reputation

for being slow to adopt new technology, we cannot discount the possibility of genuine institutional transformation (Du Preez & Le Grange, 2020).

At first glance, the vast realm of higher education and the niche sphere of TVET colleges might appear distinct, yet a closer examination reveals shared trajectories. Both arenas, whether universities or TVETs, have been shaped profoundly by the rapid technological evolution. As universities integrate cutting-edge digital tools to serve tech-savvy generations (Smith, 2019), TVETs, too, meld their hands-on curricula with modern equipment and digital simulations for industry readiness (Jones & Roberts, 2020). Moreover, confronted by global challenges like the COVID-19 pandemic, both educational contexts showcased resilience in migrating to online platforms, albeit with unique hurdles. Universities grappled with maintaining the intricacy of their subjects, while TVETs sought innovative ways to replicate hands-on training in a digital space (Brown & Peterson, 2020). Thus, the apparent repetition in literature isn't redundancy but a testament to the intertwined challenges and evolutions both settings undergo, highlighting the universality of certain educational experiences and responses.

Teachers in the field of technical and vocational education and training (TVET) may reach a large number of students over vast distances and time zones by offering their courses online. A hybrid approach was adopted for many schools that couldn't fully leap to online education: they still published and distributed printed materials while offering online courses (Herman, 2020). Due to the inconsistency of the South African postal service and students' inaccurate addresses, many students did not get their course materials on time (Govender & Olugbara, 2021). To get a full picture of COVID-19's impact on higher education, more information is needed on how the emergency switch to online learning impacted the TVETs sector, instructors, and students (Govender & Olugbara, 2021).

Most TVETs had already implemented digital engagement systems before COVID-19, allowing students to turn in assignments and providing them with information like class times, reminders, and grade reports (Kalantzis & Cope, 2020). As COVID-19 made evident, many traditional in-person TVET programmes were unprepared to make the transition to online education. To this extent, online teaching for all of its subjects is a unique feature among educational institutions (Kakuchi, 2021). Almost overnight, several schools made the decision to invest in infrastructure changes to facilitate the transition to and adoption of online education among faculty and students (Kakuchi, 2021). To facilitate the transition to online learning and, in many cases, to educate and support instructors and students to traverse the online learning environment, TVETs relied on management, educators, Information Technology (IT) departments, and support employees with online learning skills (Karakaya, 2021).

2.6 Transition to online learning during COVID-19: TVET lecturers experience

TVET lecturers, many of whom were unprepared for the shift to online education, were on the front lines of protecting students from the effects of the 15 Zero-rating is facilitated by mobile network suppliers and internet service providers who do not charge users to visit educational websites (Khoza, 2020). Teachers of TVETs were often tasked with creating, supervising, and maintaining recorded and online classes and adapting lesson plans accordingly (Kupe, 2020). Teachers had to rely on their gut feelings to guide them through the shift to online education since there was not enough time to standardise the process and no learning design model was to guide them (Kupe, 2020).

Lembani et al. (2020) state that three things are necessary for successful online learning: access to the internet, the right technology, and the knowledge to effectively use that technology.

It is safe to assume that not all TVET teachers are equally comfortable with or enthusiastic about using online education tools in their classrooms (Kupe, 2020). Access to computers and the internet during the COVID-19 outbreak did not always lead to effective online instruction (Li and Lalani, 2020).

Because of the rapid growth of online education, this study explores the issue of curriculum quality in continuing education. TVET's initial focus was on adapting already established curricula to a digital setting rather than on defining or understanding digital pedagogy in its granularity (Makombe, 2021). There was not enough time for TVET teachers to comprehensively evaluate the digital world's user interface in the light of the students' needs, skills, and constraints (Makombe, 2021). The classroom was set up as a teacher-centred environment, with the teacher doing most of the talking while students listened quietly with their devices muted. Despite the widespread use of so-called cutting-edge and enabling digital tools to facilitate education, many teachers have resorted to ineffective, outmoded approaches that bore, distract, and underwhelm their students (Marinoni et al., 2020).

Since many TVET teachers were from low-income households, they lacked the necessary grounding in ICTs when transitioning from traditional to digital classrooms (Mathew and Chung, 2020). Based on a survey conducted by United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 2020 among academics in the countries of sub-Saharan Africa, it was found that 216 million (91% of the total) do not have access to a personal computer at home. A further 199 million (or 82%) do not have a home internet connection, and 26 million (or 11%) pupils do not have access to mobile networks (Tadesse & Muluye, 2020).

2.7 Blended learning in higher education and the transition to online learning in the TVET sector

Blended learning is an educational approach that combines traditional classroom-based training (such as lectures or hands-on activities) with digital media (such as videos or podcasts) (Megahed and Hassan, 2022). Creating new digital infrastructure and instructional strategies may be required for effective blended learning to take off (Rasheed et al., 2020). Moreover, it assumes that teachers have the Pedagogical Content Knowledge (PCK) and Technological Content Knowledge (TCK) to use the appropriate devices in the classroom (Lachner et al., 2021). Despite the growing interest in the method, the evidence base for the use of blended learning in TVETs is thin. Higher Education Institutions (HEIs) and their teaching staff require considerable learning technology and instructional design to aid the shift to blended learning in higher education, which is still in its infancy (Ben Youssef et al., 2022).

Blended learning consists of traditional classroom training coupled with virtual learning environments (Cloete, 2017). The International Labour Organisation (ILO) asserts that blended learning is the most important systemic trend in education and learning, and its prevalence is growing as a result of digitisation (ILO, 2020). The use of specialised technologies in education, such as micro lectures specialised, and websites like Moso Educate and Ketangpai, is revolutionising classroom practices (Zhang et al., 2020). WhatsApp and Telegram are two of the most popular mobile messaging apps and have a disproportionate sway among TVET workers. Schools are using blended learning to ensure that online courses are treated with the same importance as traditional ones (ILO, 2020).

Significant investment in infrastructure, bandwidth, content development, and trainer and mentor training is required for the creation of blended learning solutions, the adoption of a

playful approach to learning (dubbed gamification), and the incorporation of augmented and virtual reality (AR/VR) into TVET and workplaces (ILO, 2020). Enhancing and sustaining student motivation throughout the instructional process, as well as enhancing students' comprehension and retention of course content, pose noteworthy obstacles in the realm of online education. (Hannigan & Gonzalez, 2019). E-learning methodologies rely heavily on LMSs like Blackboard Academic Suite to coordinate and facilitate students' participation in online coursework (Heinz, 2020). LMS is used to distribute and manage learning resources, including course notes, lecture recordings, electronic exams, and discussion forums, and is now commonplace at many higher education institutions. LMS can be accessible from anywhere with an Internet connection, just like any other web-based technology. LMSs may provide wholly online courses or augment conventional in-person classroom training (Garrison et al., 2010).

Learning management systems (LMS) played a pivotal role during the COVID-19 pandemic in facilitating the continuity of education in various settings. Here are the main points discussing the role of LMS during this period:

1. **Continuity of Education:** With the sudden closure of educational institutions worldwide, LMS platforms became the primary means to ensure the continuity of lessons, allowing institutions to upload, manage, and disseminate educational content seamlessly.
2. **Enabling Remote Learning:** LMS platforms' cloud-based infrastructure makes it feasible for remote learning to take place. Lessons, tasks, and materials were available to students anywhere, ensuring that learning was not confined to a physical classroom.
3. **Interactive Learning:** To facilitate in-person interactions, LMS platforms included capabilities like video conferencing, chat rooms, and discussion boards. These elements

encouraged peer-to-peer interactions and debates while maintaining a semblance of the interactive character of conventional classes.

4. **Assessment and Feedback:** Using LMS technologies, instructors were able to create online tests, quizzes, and assignments that in certain circumstances might be graded right away. The systems enabled prompt feedback, which is essential for student development and comprehension.
5. **Tracking and Monitoring:** The capability of LMS platforms to track student progress is one of its primary advantages. This became crucial during the pandemic for spotting pupils who could be having trouble with the new teaching style and enabling prompt interventions.
6. **Flexibility & Self-paced Learning:** The asynchronous learning capabilities of LMS platforms allowed students to access lessons at their convenience, catering to their individual paces and schedules.
7. **Resource Repository:** LMS platforms acted as a centralized repository where educators could upload a variety of resources – from readings to videos – ensuring students had all necessary materials in one accessible location.
8. **Adaptability to Diverse Educational Needs:** LMS platforms catered not just to academic institutions but also to corporate training programs, vocational training, and other educational endeavours. This adaptability was critical in ensuring diverse learning needs were addressed during the pandemic.
9. **Supporting Collaboration:** Despite physical distancing, LMS platforms bolstered collaborative learning through features like group projects, shared documents, and collaborative boards.

10. Ensuring Equity: While the digital divide remained a challenge, LMS platforms, especially those accessible on various devices including mobile phones, aimed to ensure a broader swath of students could access educational content than would be possible without such systems.

In essence, the COVID-19 pandemic underscored the significance of LMS platforms in the modern educational landscape, proving their worth not just as supplementary tools, but as essential components for delivering quality education in times of crisis.

2.8 Educational challenges of using ICT in education.

The use of ICT in developmental education programs has been met with a number of documented challenges from institutions, most notably from end-users who had technical concerns (Widodo and Riandi, 2013). One consideration for those looking to adopt new technologies is the amount to which they will be advantageous to them. However, economic considerations have historically taken precedence (Wang and Su, 2020). The emergence of COVID-19 has shown the susceptibility of the school system to extraneous influences (Bozkurt and Sharma, 2020). This shift to online education delivery methods presents several logistical and behavioural challenges, as Ribeiro-Silva et al. (2020) noted. This transition to online education has resulted in several practical and social challenges. If districts implement fair and even grading systems based on these standards, Feld (2020) argued that pandemic-related dread would negatively affect student academic performance. Issues with assessment and supervision, a heavy workload, compatibility (certain subjects, like sports sciences, need physical connections), and a lack of technological infrastructure and digital proficiency are among the most significant challenges (Adedoyin & Soykan, 2023).

Ethnic, economic, and resource disparities may impact student achievement, and the vast majority of educators lack the skills necessary to effectively provide a rigorous, globally relevant education to children anywhere in the world (Wang, 2017)). In carrying out their teaching activities and meeting these increased requirements, teachers often lack the expertise and resources required to modify instructional content and styles for students from disadvantaged backgrounds (Adedoyin et al., 2020). The cost of a reliable internet connection and the desktops, laptops, and tablets that students in low-income situations need to take advantage of online learning is out of reach (Demirbilek, 2014). In its place, individuals use their mobile devices to access educational resources, complete tasks, and even take exams (Chea et al., 2020). Before the pandemic, educators in the area lacked access to inclusion training and had limited opportunities to work with children from disadvantaged or otherwise diverse backgrounds (UNESCO, 2013).

2.8.1 Challenges posed by COVID-19 pandemic on TVETs.

Understanding the challenges faced by TVET educators is essential. There are several advantages to studying at a distance, as previously noted. However, it is also important to know some international teachers' challenges at the beginning of their careers. As Makombe (2021) explains, teachers might get frustrated with the process when they are forced to develop new skills to teach well online. Professors often assume that to be successful, they need to exhibit a sudden burst of brilliance, given the speed with which the shift to distance learning may be made. Teachers required pupils to have skills that not all had due to technological, physical, and time constraints they had no control over. Based on the research of (Mgutshini et al., 2021), these qualities include, but are not limited to, self-discipline and the ability to effectively manage one's time.

From a more literate point of view, teachers had to contend with distractions like reading and a lack of access to the Internet. Mpungose (2020), attributes some of the blame for this to yet another instance of digital injustice. As Mpungose (2020) explains, inequity exists when certain people have less access to resources like computers, the internet, technical support, and first-hand knowledge. As Mgutshini et al. (2021) pointed out, just providing students with access to resources is not enough to combat inequity; rather, it must be accompanied by support in other areas of their life. Mhlanga and Moloi (2020) found a connection between injustice and difficulties with technology, such as malfunctioning devices, limited internet access, and a lack of technical expertise.

The results of an intriguing study by Pashaliev (2021) demonstrate that many students experience stress and anxiety as a result of distractions at home and in the classroom. According to Sugata (2020), most professors see distractions, extra work, and technical difficulties as the main drawbacks of online and distance education. Furthermore, Tahiru (2021) addresses the issue of unfairness faced by many professors in their local settings owing to a deficiency in support-related services. In the absence of support from home, students have a harder time focusing and succeeding academically.

2.9 Opportunities for using ICT in online teaching and learning.

There has been a dramatic shift in the importance of ICT to distance learning delivery methods, particularly in the realms of open and remote learning (Rahman et al., 2021). As the use of technology in schools has expanded, so has the potential for both teachers and students to learn more (Rahman, 2021). Obtaining the necessary hardware and software is easy to integrate ICT into the educational system, but many other factors must also be considered. These include curriculum and pedagogy, institutional readiness, teacher competencies, and long-term financing,

(Rahman et al., 2021). Many positive aspects of online education stand independently, such as flexibility (Smedley, 2010), interaction (Wagner et al., 2008) and self-paced, individual study. The current increase in usage may be attributed to universities' efforts to align with local and worldwide policies and legislation to slow the spread of COVID-19 and keep classes on schedule (Quraishi et al., 2020).

Higher education institutions are quickly digitising their pedagogical processes as a response to the pandemic. Microsoft Teams, Google Classroom, Canvas, and Blackboard are examples of unified communication and collaboration platforms that teachers can use to design and deliver online courses, training, and skill development programs, in addition to the traditional educational and economic functions of universities (Petrie et al., 2020). In addition to completing their digital lectures, materials, and assessments alone, students in online classes may also interact and communicate with one another and, on occasion, work jointly with their instructors (Stauffer, 2020). More satellite sites, where universities or institutions provide classes at times and places that are convenient for students (particularly in rural areas), are among the goals of the South African Department of Higher Education and Training (Moyo and McKenna, 2021).

2.9.1 Benefits brought about by transitioning to learning online in comparison to traditional learning and teaching: Global perspective.

Over a long period, most online learning experiences for professors and students are designed and implemented specifically for online learning (Adam et al., 2020). Remote learning is just a transient and rushed activity during emergencies like the COVID-19 pandemic, so instructors and students do not benefit from the superb online learning that might be supplied if its design and implementation were carried out over a longer period. To ensure remote learning

is launched and supported within a certain time frame, instructors must immediately adapt their skills and learning and teaching materials to the online learning environment (using technology) (Bagwell, 2020). Since the pandemic, several works on Emergency Remote Teaching and Learning (ERTLL) and students' experiences with it have been published; these works apply to a broad range of contexts and areas of study throughout the globe.

From a Chinese perspective, Bolden (2020) found that many educators at South Korean universities lauded online education's portability, efficiency, focus, and cost-effectiveness. Less often claimed advantages include having a pleasant learning environment, being imaginative, engaging in new activities, getting along well with other students, and efficiently managing one's time. Many of these findings were corroborated by researchers in other nations. Bozkurt and Sharma (2020) revealed that students in both the United States of America (USA) and Malaysia valued adaptability highly. Teachers have well received the convenience, as Bolden (2020) found: courses may be accessed from anywhere.

Chisholm-Burns et al. (2021) examined how teachers in the United Arab Emirates assessed the benefits of online learning in terms of both cost and time savings. The paper confirms, using data from the United Arab Emirates (UAE), benefits similar to those stated above in other situations and additional benefits, including increased involvement and convenience. Although this was not the only thing we learned, the vast majority of professors also said that their students were more engaged, safer, and able to work at their own pace when they taught online.

Traditional methods of imparting information may promote student participation, but they fall short in many respects regarding the quality of the learning that takes place. You might say the same thing about the online learning approach that is so closely linked to this kind of

textbook delivery. According to a number of international surveys, not all faculty members are enthusiastic about the transition. Some are happier working alone, while others prefer keeping their families nearby.

Traditional classroom settings, known for fostering face-to-face interactions, naturally promote student participation, making lessons more engaging and dynamic (Johnson, Johnson & Smith, 1991). However, this approach can sometimes be overly teacher-centered, with a reliance on lectures that may limit deeper learning experiences (Freeman et al., 2014). When we pivot to online learning, a concern arises: if implemented poorly, it can simply replicate the lecture format of traditional teaching. Rather than fully exploiting the expansive digital tools available, such as interactive simulations or discussion forums, online methods might just echo the conventional textbook delivery (Means et al., 2013). Additionally, the transition to online platforms isn't universally welcomed. According to Allen and Seaman's 2018 study, educators' opinions on online learning are mixed, with some cherishing the solitude and flexibility it offers, while others yearn for the community feel of a physical academic setting or the distinct separation between professional and family life (Bolliger & Halupa, 2012). This balance between traditional and online modalities underscores the complexity of evolving educational paradigms.

2.10 Adaptation and Challenges of Educational Institutions During the Transition to Online Learning Amidst the COVID-19 Pandemic

While some teachers and administrators were resistant to the shift to online education, the majority embraced the new method with open minds and eager hearts (UNESCO, 2020). A South African institution was able to purchase computers for teachers and staff thanks to bursary funding (UNESCO, 2020). Though students' access to learning tools was an administrative issue, their competence with and comfort with the technology was pedagogical (WHO, 2020). For students, trainees, and apprentices, the systematic inability to continue planned learning and training processes occurs when technical and vocational schools and training institutes discontinue regular operations (UNESCO, 2020). Students are losing face-to-face instruction and internship opportunities to online learning (UNESCO, 2020).

During the pandemic, remote learning served as a lifeline for education, but the possibilities offered by digital technology go well beyond a quick remedy (OECD, 2019). There has been a radical shift in how, when, and where people study as a result of the prevalence of digital tools (Reimers and Schleicher, 2020). On top of that, the utility of a given technological tool depends on how it is put to work (OECD, 2019). Only 53% of instructors in 2018 polled by the OECD's Teaching and Learning International Survey (TALIS) permitted students regularly or continually use ICT in the classroom (OECD, 2019). Even before the crisis, a sizable percentage of educators (18% on average across OECD countries) saw a serious need for training in the effective use of ICT in the classroom (OECD, 2019). Teaching students with special needs is the most often cited need for professional development among teachers (OECD, 2019) In spite of this, teachers not only admit to wanting ICT instruction but also say they seldom use online courses to further their careers. Overall, just 36% of lower secondary teachers in OECD

countries took online courses or seminars for professional development in 2015, compared to 62% who participated in such activities in person (OECD, 2019).

In March 2020, the Italian government announced initiatives to support distance learning. These initiatives include providing schools with digital platforms and resources for distance learning, lending digital devices to students from low-income backgrounds, and providing training for school staff in distance learning methodologies and approaches (Republic of Italy, 2020). In May 2020, Italy announced additional measures to grant greater funding to cover expenses linked with school and university reactions to the pandemic (Republic of Italy, 2020). These supplementary monies will be used for the forthcoming school year to cover the costs of necessary services, safety tools, and cleaning supplies at colleges and universities (Republic of Italy, 2020). Staff development in the areas of knowledge and skills necessary to build student-centred teaching strategies should be encouraged and supported throughout the expansion of online learning and efforts to integrate technology into learning processes (Goode et al., 2007; Huang et al., 2020). School leaders need to address the organisational factors of teacher support and incentive to engage in the change, both of which have been shown to have an impact (Wang et al., 2020).

2.11 The Imperative of Integrating ICT in Educational Practices: Efficacy, Training, and Cultural Challenges

Learners may take part in high-quality learning experiences, get access to information and knowledge, and contribute fully to society with the help of innovative solutions that can be made possible by technological advancements (IESALC, 2020). The successful use of ICT in educational settings can revolutionise instruction and provide students with more agency (IESALC, 2020). Therefore, teachers must have the skills required to integrate ICT into their

professional practices to guarantee learning equity and quality for all students (IESALC, 2020). Teachers that are able to use ICT in the classroom effectively will be better equipped to instruct their pupils and help them grow as digital citizens (IESALC, 2020). Teachers who were not ready or able to go beyond using ICT as topic teaching tools did not effectively support students' use of ICT in the twenty-first century as a medium for the development of higher-order thinking and active learning (Ertmer and Ottenbreit-Leftwich, 2013; Hwee & Yew, 2018). So, it is crucial to train educators on the subject matter and professional skills necessary for integrating ICT into their lessons (Hwee et al., 2018). Hung (2016) found that, when comparing male and female teachers, the former were more likely to be well-prepared in the domain of learning-transfer self-efficacy. In comparison to instructors with a bachelor's degree, those with a master's degree placed a greater emphasis on students' communication and learning-transfer self-efficacy. Despite efforts to improve teacher training, there are still gaps in knowledge of information and communication technologies among Indonesia's educators, according to studies on this topic (Widodo et al., 2013). It's worth noting that, even at Indonesia's colleges that train educators, ICT is often reserved for presenting lessons (Yusuf, 2016). According to these results, not only does Indonesia favour in-person instruction, but the country also has a deeply ingrained educational culture that places a premium on teachers (Widodo and Riandi, 2013).

2.12 The Profound Shift: COVID-19's Acceleration of Digital Transformation in South African Higher Education

COVID-19 has impacted every home and classroom in SA, and its ripples may be felt for years to come (Dube, 2020). The influence of COVID-19 on student life and the environments in which they study and live is far-reaching and deep. Many educational institutions are still working on putting in place or improving their living and learning systems to provide students

with the best possible education. African countries, say Fernandez and Shaw (2020), were forced to close schools to stop the spread of the virus and ensure that lockdown measures were carried out (higher education institutions). On top of that, Fernandez and Shaw (2020) state that universities must ensure that all of their students have access to their courses through online distance learning mediated by ICT.

In some ways, the digital revolution of higher education has been accelerated by COVID-19, and this has resulted in universities being obliged to build virtual cultures. That is just one example of the dramatic shifts that have taken place in our homes and classrooms. Institutions of higher education are required to suspend all on-campus activities for the duration of 2020 (Sugata, 2020). This has resulted in the delivery of education being shifted to the digital medium. The burden of ensuring the continuity of education has fallen on universities, disrupting the daily routines of many (Mpungose, 2020). Mpungose (2020) argues that this change has widened the gap between privileged and disadvantaged students.

2.13 Community of Inquiry (CoI) Framework in Online Learning

The Community of Inquiry (CoI) framework posits that meaningful and deep learning occurs through the interaction of three core elements: cognitive presence, social presence, and teaching presence (Garrison, Anderson & Archer, 2000). Specifically, in the context of online learning, the CoI framework provides a lens through which the complexities of educational experiences can be understood.

Garrison et al. (2010) further stress the importance of social presence in online learning, which facilitates a community where learners can collaboratively construct meaning. Such social interactions have proven vital for TVET educators transitioning to online teaching, given the

applied nature of their subject areas. The teaching presence, on the other hand, is pivotal for structuring content and guiding students, which becomes challenging in a virtual environment.

Given the pandemic's rapid shift to online education, the cognitive presence—the ability to construct meaning through communication—becomes paramount (Shea & Bidjerano, 2009). Especially in the TVET sector, where practical applications and demonstrations play a crucial role, this lens can shed light on how effectively such experiences can be simulated or transformed for online contexts.

2.14 E-resilience of Educational Institutions during Crises

E-resilience refers to the capacity of institutions to utilise digital tools and platforms to ensure continuity in education during disruptions (Selwyn, 2011). The COVID-19 pandemic tested the e-resilience of many educational institutions worldwide, especially in the TVET sector. Given the nature of technical and vocational courses that often require hands-on experience, understanding the e-resilience of these institutions provides insights into their adaptability and innovation.

Weller (2018) argued that the resilience of educational institutions during crises is heavily reliant on their existing ICT infrastructure and the digital literacy skills of both educators and students. The TVET institutions' shift to online teaching due to the pandemic illuminates their capacity to innovate and adapt swiftly, a true testament to their e-resilience.

A crucial factor to consider is the institution's support for educators during this transition. As seen in the experiences of TVET lecturers, the e-resilience of an institution can be heavily influenced by the training, resources, and support provided to its educators (Weller, 2018).

2.15 Adaptive Pedagogical Strategies in Online TVET Education

In the context of TVET, online teaching isn't merely about moving content to digital platforms; it's about translating hands-on, practical skills into an online environment. According to Ke and Kwak (2013), the pedagogical strategies need to be adaptive, prioritising engagement and ensuring learners achieve the same depth of understanding they would in a traditional setting. This becomes especially crucial when the foundation of TVET relies heavily on hands-on training.

Hodges et al. (2020) emphasise the significance of "emergency remote teaching" during the pandemic, differentiating it from well-planned online education. For TVET lecturers, this involved not just understanding the online tools but also devising new strategies to compensate for the absence of physical tools and environment, stressing the importance of adaptive pedagogy.

2.16 The Role of Assessment in Online TVET Courses During COVID-19

Assessment drives learning. In TVET, assessment often revolves around demonstrations of practical skills. When teaching moved online, the assessment paradigm also faced immense challenges. According to Crisp (2017), in online education, there is an opportunity not just to replicate but to innovate in terms of assessment.

In the light of the pandemic, TVET institutions had to either find online proxies for practical tests or revise their assessment criteria entirely. Many used a mix of methods, relying heavily on project-based assessments and simulations (Butler-Henderson et al., 2020). It highlights the intrinsic relationship between the method of instruction and the mode of assessment, and how one influences the other, especially in a challenging environment like that of COVID-19.

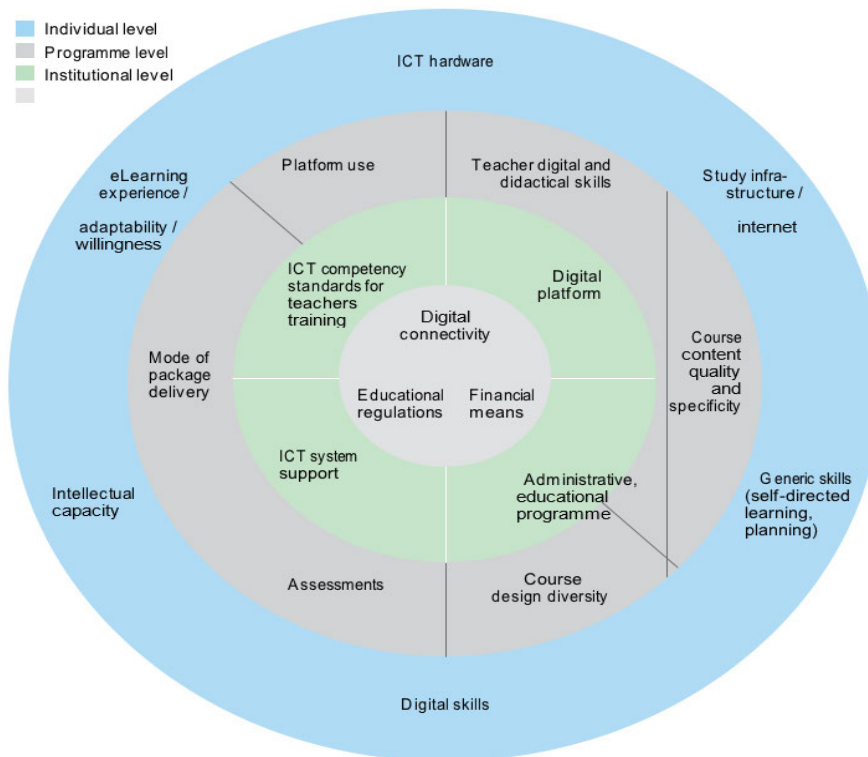
2.17 Conceptual framework

The conceptual framework serves as the researcher's map or guide in navigating the complexities of their study (Johnson & Christensen, 2008). It identifies the specific concepts or variables of interest and outlines the relationships among them, often depicted visually. The theoretical basis for this research will be Van der Laar's (2020) conceptual framework for building resilience via education to mitigate the shock of the Covid19 pandemic on higher education's approach to instruction. The inclusion of technology into living and learning environments has shown resilience in the face of the pandemic, making this a relevant topic for research.

Figure 2.1 shows the four components of the architecture that work together to establish the electronic-resilience (e-Resilience) of educational institutions after a shock (Van der Laar, 2020). Personal fortitude (in this case, a dark blue) is the foundation. The second (violet) layer shows programme-level resilience. Institutional resilience is green in the third layer, while macro-level resilience is pink in the fourth layer.

Figure 2.1 (Van der Laar, 2020)

E-Resilience of Educational Institutions



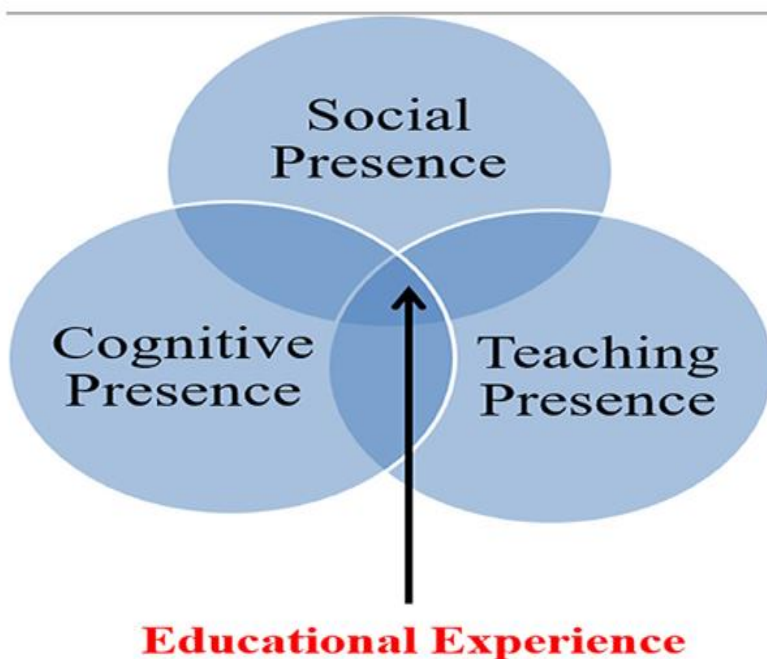
Students and housing counsellors have felt the effects of the pandemic in almost every facet of their daily lives. However, adaptation strategies need to be developed to increase the likelihood of survival for all parties involved. Many students have been impacted by the use of technology, making it all the more important to have support from institutions. Further evidence is shown by Chiemeké and Imafidior (2020) that universities are obligated to train their staff to assist students better during this pandemic. This study needs to focus on the house advisors, since they are the ones who will have the most consistent interaction with the students despite the continued ban on contact courses. Therefore, the conceptual framework presented here is appropriate.

2.18 Theoretical framework

The theoretical framework, on the other hand, anchors the research within the broader scholarly literature (Grant & Osanloo, 2014). It builds upon existing theories or models relevant to the research topic and serves as a foundation from which the study arises. Hook (1959) used the Community of Inquiry (CoI) paradigm to investigate how technological challenges affect educators' online instruction. It was from Dewey's notion of collaborative-constructivist learning that the CoI framework was developed, and it has since found widespread use in online educational contexts (Hook, 1959). The CoI framework consists of three forms of presence overall: cognitive presence, social presence, and pedagogical presence. These three types of presence should be accounted for in any viable theoretical framework for CoI. Using content analysis and coding, the resulting themes from literature reviewed above are into three categories: social, teaching, and cognitive presences, based on their observations of online conference call transcripts. There were three subheadings under teaching presence: directed subject matter instruction, online discussions encouraged by instructors, and well-designed learning materials. The term cognitive presence was coined to describe the degree to which people in a given configuration of an inquiry community can construct meaning via sustained conversation (Garrison et al., 2010). There are four levels of cognitive presence, each with its own desirable and overlapping characteristics: the triggering event, exploration, integration, and resolution. Garrison et al. (2010) proposed that a technique to evaluate the systematic evolution of thought across time, may be gained by using these cognitive presence measurements. Learners' ability to project their individual characteristics into a community of inquiry via affective expression, transparent communication, and other strategies for fostering group cohesion was referred to as social presence.

Figure 2.2 (Garrison, Anderson &Archer, 2010)

Primary Types of Presence Examined by the CoI Framework



2.18.1 Cognitive presence

The Col's mental presence is significantly related to the development of critical thinking, sometimes referred to as the ultimate aim of higher education (Garrison et al., 2010). After reading John Dewey's (1938) seminal work on reflective thinking, Garrison and Arbaugh (2007) developed the Practical Inquiry framework to operationalise cognitive presence within a reflective process (experience, reflection, conceptualisation, and experimentation). As Dewey saw it, the cornerstone of a good education was the kind of introspective, self-directed learning that inevitably leads to the development of critical thinking skills. As the Col framework suggests, the ability to think critically does not grow in isolation. Instead, it depends on a combination of the three factors (mental capacity, social presence, and teacher presence) (Garrison et al., 2010). Dewey's theory of critical thinking agrees with this idea; he argues that it

takes a defining experience to kick off the critical thinking process and lead to the creation of new knowledge. The end goal of cognitive presence is to improve the ability to make mental connections and put knowledge to use (Garrison et al., 2010). The current CBL curriculum greatly benefits from this line of thinking.

2.18.2 Social presence

Advocates of the Col framework understand the importance of social presence in creating a community of inquiry. However, studies that put too much weight on the social aspect at the cost of the educational and mental ones were called into doubt (Garrison et al., 2010). Instead, they argued for a holistic strategy that considers the interplay between social (in the community), educational (in the classroom), and cognitive (in critical thinking) factors (critical thinking). Social cohesion and honest dialogue are crucial when building a Community of Inquiry. The intersection of classroom and community is a fertile ground for developing pedagogical practices that strengthen social and academic learning (Garrison et al., 2010). This finding is significant because it sheds light on how TVET college instructors during COVID-19 felt about their students' and students' experiences with online education.

2.18.3 Teaching presence

Students cannot expect to succeed in online courses without regular engagement with their peers and with the instructor. Therefore, to actualise personally relevant and educationally worthwhile learning outcomes, it is essential to promote instructional presence in technology-mediated education via the following three elements: design, facilitation, and direction (Garrison et al., 2010). For this educational goal to be realised, three supplementary factors are required: three ways to teach: 1) organising and designing lessons, 2) facilitating class discussions, and 3) giving lectures (Anderson et al., 2001). Research conducted on ERTL during COVID-19 found

that student performance improved when instructors were present during online lessons (Aristovnik et al., 2020).

Cognition, social context, and schooling all influence one another. Shea & Bidjerano's (2009) investigation of the connections between these three features provides a detailed description of this phenomenon. According to the findings, social presence mediates the relationship between teaching and cognitive presence. Furthermore, these educators believe that teaching and maintaining a social presence are the actions necessary to provide paths to epistemic involvement. While examining the dynamics of an online learning environment during COVID-19, I found the Col framework applicable because it acknowledges the intersection of social (community), cognitive (critical thinking), and instructional (classroom) elements. The importance of setting the tone, choosing appropriate readings, and encouraging the growth of new ways of talking about things is also acknowledged. Since this is a COVID-19 project, I argue that these three ideas are fundamental to studying teachers' online pedagogical and scholastic experiences.

2.19 Conclusion

The literature review conducted in this chapter provided a comprehensive overview of existing research related to the topic under study. Throughout the review, several themes and patterns emerged, showcasing the depth and breadth of scholarship in this domain. Central to the literature is multi-faceted dynamics of online education, especially in the wake of the COVID-19 pandemic. Predominantly, the shift to online learning, while promising, has posed notable challenges both pedagogically and logistically. Moreover, a recurrent observation in the reviewed literature was the challenges faced on eLearning, further highlighting complexity of online education.

However, there remain gaps in the current body of knowledge, particularly regarding online education which are mainly Oversimplification Across Socio-Economic Contexts, Pedagogical Practices in Online Learning and Institutional Leadership & Strategy. These gaps underline the significance of the present study and its potential contribution to the academic discourse. In synthesising the extant literature, this chapter has laid a solid foundation upon which the subsequent research chapters will build, moving from established knowledge towards new discoveries. The next chapter is the research design and methodology, which details and rationalises the investigative approach adopted.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter describes the research methods used to achieve the study's objectives. The methodology chapter in research is crucial as it demonstrates an understanding of research theory, evaluates the reliability and validity of the study, establishes the research design, enumerates the research steps, ensures valid and reliable results, and may contribute to methodological advancements. It provides a comprehensive account of the methods employed in the study, allowing readers to assess the quality and integrity of the research process.

The chapter then outlines the research methodologies, paradigm, approach, participants, and sampling procedure. Research as trustworthiness and quality criteria are also presented. The chapter ends with a discussion of the measures taken to ensure that the research upheld ethical standards in research involving humans. All selected techniques and chosen methods are justified.

3.2 Research design

The research design serves as the framework that provides coherence and structure to the research effort. Various research designs exist, and their classification is determined by the intended purpose of the research (Kazdin, 2021; Sileyew, 2019). There are five research designs, Causal-comparative research, Correlational research, Explanatory research, Descriptive research and Exploratory research (Sileyew, 2019).

Causal-comparative research is a methodology used to identify cause-effect relationships between independent and dependent variables. It aims to determine the consequences or causes of differences among different groups (Patten and Galvan, 2019). This type of research involves

studying and comparing groups that have already experienced the independent variable, focusing on understanding its effect on the dependent variable. It is often conducted retrospectively, examining past data or conditions (Liamputtong, 2020).

Correlational research is a design where data on variables is collected without manipulating them. Correlational research explores the relationship between variables and measures the degree to which they vary (Asamoah, 2014). Correlation does not imply causation, meaning that a correlation between two variables does not indicate that one variable causes the other. Correlational research is useful for gathering data quickly from natural settings and generalising findings to real-life situations (Seeram, 2019).

Exploratory research is conducted to gain initial insights and familiarity with a specific topic or problem. It aims to explore and generate ideas, hypotheses, and potential research questions. Exploratory research is often the first step in the research process and helps lay the groundwork for subsequent research, such as explanatory research. It allows researchers to delve into a subject area and gather preliminary information before formulating more focused research objectives (Swedberg, 2020)

Explanatory research seeks to provide an understanding of the reasons and causes behind a particular phenomenon. Explanatory research aims to answer "why" questions and goes beyond merely describing or exploring a topic. Explanatory research builds upon exploratory research by providing in-depth explanations and establishing causal relationships between variables (Harris, 2019).

Descriptive research aims to accurately describe the characteristics, behaviours, or phenomena being studied. Descriptive research primarily provides an objective and detailed account of the subject of interest. Descriptive research methods can be both quantitative and

qualitative, depending on the research objectives. It helps in obtaining valid and reliable results by carefully designing the research approach (Siedlecki, 2020).

3.2.1 Rationale for chosen research design.

This study selected the exploratory research design. Exploratory research aims to uncover new and interesting information (Swedberg, 2020). In the context of exploring online teaching and learning experiences during the pandemic, there is a need to understand the unique challenges, strategies, and outcomes associated with this shift to remote education. Exploratory research allows researchers to delve into this relatively unexplored area and discover novel findings (Rezigalla, 2020).

The flexible nature of exploratory research allows researchers to adapt their methods and approaches as they gain insights and knowledge about the topic (Mbaka & Isiramen, 2021). Given the rapidly changing nature of the COVID-19 pandemic and its impact on education, an exploratory research design enables researchers to explore various aspects of online teaching and learning experiences, including the challenges faced, instructional strategies employed, and the effects on both lecturers and students.

Finally, exploratory research is sometimes referred to as a grounded theory approach (Privitera, 2022). This approach emphasises building theories based on the data produced rather than starting with preconceived hypotheses. Exploring online teaching and learning experiences allows researchers to develop theories or models that emerge from the data, providing a deeper understanding of the phenomenon under study (Casula et al., 2021).

3.3 Research methodology

There are three primary research methodologies, qualitative, quantitative and mixed methods (Pandey & Pandey, 2021).

Qualitative research focuses on understanding and exploring complex phenomena, often in-depth and from multiple perspectives. Qualitative research involves collecting non-numerical data such as interviews, observations, and textual analysis (Walliman, 2021). Qualitative research is suitable for exploring subjective experiences, beliefs, and perceptions, investigating social and cultural contexts and their influence on behaviour, studying complex and nuanced phenomena where quantitative measurements may be insufficient and generating rich and detailed descriptions and narratives (Wan, 2022).

Quantitative research involves collecting and analysing numerical data to establish patterns, relationships, and statistical significance. Quantitative research employs structured instruments such as surveys, experiments, and measurements (Adams & McGuire, 2022). Quantitative research is applicable in examining cause-and-effect relationships and making predictions, generalising findings to larger populations, conducting statistical analyses to test hypotheses and quantify phenomena, measuring and comparing variables using statistical methods and conducting large-scale studies that require numerical data analysis (Mishra & Alok, 2022).

Mixed research design combines elements of qualitative and quantitative research approaches to gain a comprehensive understanding of a research problem. Mixed research involves collecting and analysing both numerical and non-numerical data in a sequential or concurrent manner (Leavy, 2022). Mixed research is suitable for complementing qualitative data with quantitative data or vice versa to provide a more comprehensive analysis, triangulating findings from different sources or methods to enhance the validity and reliability of results, exploring research questions that require a deeper understanding and statistical analysis

simultaneously and addressing research questions that benefit from the strengths of both qualitative and quantitative approaches (Bairagi & Munot, 2019).

3.3.1 Rationale for the research design chosen.

The qualitative research methodology was meticulously chosen for this study due to its distinctive capacity to explore and interpret intricate human experiences. At the core of qualitative research lies its potential to uncover profound human interpretations, especially during unparalleled events such as the COVID-19 pandemic (Braun & Clarke, 2013). Given that the pandemic has induced a myriad of individual and collective experiences, it is paramount to tap into the subjective narratives, emotions, and perceptions related to it.

Qualitative methodology stands out in its ability to illuminate the deeper nuances of human behaviour, intricate social interplays, and the rich cultural tapestries that frame our reactions to external stimuli (Creswell & Poth, 2018). It doesn't merely capture data; it captures the essence of lived experiences. In the context of our research, which focuses on online learning and lecturer wellbeing amidst the pandemic, this methodology is pivotal.

Moreover, qualitative research, with its inductive essence, doesn't restrict the inquiry within predefined bounds; rather, it enables the organic emergence of theories and concepts from the data, fostering a richer, bottom-up understanding of phenomena (Žukauskas et al., 2018; Patel & Patel, 2019). Such an approach is indispensable when navigating uncharted territories like the sudden shift to online education and its impact.

3.4 Research paradigms

A paradigm is a set of assumptions or beliefs about essential aspects of reality (Kankam, 2019). The three main research paradigms are positivism, interpretivism, and critical theory; each paradigm represents a different philosophical framework and approach to conducting research (Kumatongo & Muzata, 2021)

Positivism is a research paradigm that assumes there is one objective reality, which can be observed, measured, and explained using scientific methods (Park et al., 2020). Positivists believe that research should be value-free and aim for objectivity and generalisability. The Positivism research paradigm relies on quantitative data production methods, such as experiments, surveys, and statistical analysis to test hypotheses and establish causal relationships.

Interpretivism, also known as constructivism or phenomenology, emphasises the subjective nature of reality and the importance of understanding social phenomena from the perspectives of the individuals involved. Interpretivists believe that social reality is complex and can be best understood through qualitative methods, such as interviews, observations, and textual analysis (Alharahsheh & Pius, 2020). They focus on exploring meanings, experiences, and social interactions and often use inductive reasoning to generate theories and interpretations.

Critical theory is a research paradigm that aims to uncover and challenge power structures, social inequalities, and oppressive systems (Siddiqui, 2019). It views knowledge as inherently political and seeks to promote social change and emancipation. Critical theorists' critique existing social, political, and economic systems and use qualitative methods, such as critical discourse analysis and ethnography, to examine power dynamics and social injustices

(Yong et al., 2021). They often engage with participants in the research process and advocate for social justice and equality.

3.4.1 Rationale for the chosen paradigm

The study adopted the interpretive paradigm. Interpretivism is closely associated with qualitative research methods, such as interviews, observations, and textual analysis (Alharahsheh & Pius, 2020). These methods allow researchers to capture rich, detailed, and contextual data that can provide insights into the social reality being studied. Interviews and observations, in particular, are commonly employed techniques in interpretive research (Iovino and Tsitsianis, 2020).

Interpretivism is useful for investigating complex and interrelated social processes like the adoption of online learning where quantitative evidence may be insufficient or challenging to obtain. This paradigm allows researchers to delve into the nuances, intricacies, and contextual factors that shape these processes, such as lecturer-adminin/lecturer-student relationships, organisational dynamics, or social interactions (Gupta et al., 2022).

Moreover, the interpretivism paradigm acknowledges the significance of participants' viewpoints as subjective, which is very applicable in the COVID-19 context where everything was new for everyone and different lecturers processed the situation differently

3.5 Population

The study population is defined as the operational representation of the target population from which the sample is actually selected (Hammond & Wellington, 2020). It can include people, objects, animals, measurements, or other elements with common characteristics or attributes. The study population is distinct from target population: The target population refers to the larger group of individuals or elements to which the research findings will be generalised

while the study population is a subset of the target population and represents the specific group from which the sample is chosen (Stratton, 2021).

The target population are TVET lecturers, while the study population are the lecturers at the selected TVET college. Five lecturers participated in this study.

3.6 Sampling and sampling procedures

Sampling in research involves selecting a representative group from a larger population to collect data and make inferences or generalisations about the population (Lohr, 2021).

Sampling aims to gather information from a subset of the population in a feasible and cost-effective manner. Sampling allows researchers to draw conclusions about the characteristics, trends, or relationships within the larger population based on the collected data (Islam and Aldaihani, 2022). There are two types of sampling in research, probability and non-probability sampling.

Probability sampling is a sampling method in which each member of the target population has a known and non-zero chance of being selected for the sample (Berndt, 2020). It allows for random selection and ensures that every individual in the population has an equal opportunity to be included in the sample. Probability sampling techniques include simple random sampling, stratified random sampling, cluster sampling, and systematic sampling. Probability sampling aims to provide a representative sample that accurately reflects the target population's characteristics. Probability sampling allows researchers to make statistical inferences and generalise findings to the larger population with a known level of confidence.

Non-probability sampling is a sampling method in which the selection of individuals for the sample is based on non-random criteria. Non-probability sampling does not guarantee equal chances of selection for each member of the population, and the probability of inclusion for each

individual is unknown. Non-probability sampling relies on specific criteria or convenience in selecting individuals for the sample (Islam and Aldaihani, 2022). Examples include purposive sampling, convenience sampling, snowball sampling, and quota sampling.

3.6.1 Rationale for selected sampling method

This research used non-probability sampling, specifically purposive sampling. Non-probability sampling may be used when probability sampling is impractical or specific subgroups need to be included. Non-probability sampling methods are often easier and less costly to implement compared to probability sampling (Islam & Aldaihani, 2022).

Purposive sampling was selected because purposive sampling entails the researcher determining the inclusion criteria and selecting only those people who satisfy the inclusion criteria (Denieffe, 2020; Islam & Aldaihani, 2022). The inclusion criteria: i) lecturers who were employed at the selected TVET college, ii) lecturers with more than five years of lecturing experience pre-COVID-19 at the selected TVET college. The inclusion criteria ensured that only experienced lecturers participated and only lecturers with pre-COVID-19 and COVID-19 lockdown experience at the selected TVET college.

Inclusion Criteria:

1. **Occupation:** Participants must be currently teaching National Certificate Vocational at this TVET college.
2. **Duration:** Lecturers must have a minimum of two years of teaching experience in the Business Studies and Technology curriculum. This ensures that they have substantial experience navigating the challenges and opportunities of the curriculum and can provide rich insights.

3. **ICT Interaction:** Participants should have attempted to integrate ICT tools into their teaching process at least once in the past year. This ensures that they can provide first hand experiences regarding ICT's benefits and challenges in the classroom.
4. **Willingness to Participate:** Lecturers must be willing to actively participate in the study, sharing personal experiences, challenges, and opinions regarding ICT integration.

Exclusion Criteria:

1. **Subject Specialisation:** Lecturers who specialise only in subjects other than Business Studies and Technology, even if teaching in Grade 12, will be excluded.
2. **Geographical Constraints:** Lecturers from colleges outside the district will not be considered, ensuring that the study remains region-specific.
3. **Temporary Staff:** Substitute or temporary lecturers, who might not be deeply involved with the curriculum or colleges ICT resources, will be excluded.
4. **Limited ICT Interaction:** Lecturers who have never attempted to use or integrate ICT tools into their teaching methodology will be excluded, as they might not provide insights pertinent to the research's primary objectives.

3.6.2 Sample size

The sample size is a subset of the population selected for a survey or experiment. It represents the number of units or observations that will be included in the study. In any qualitative study, the determination of sample size is particularly problematic and prone to interpretation; however, a key determinant of sample size in all qualitative studies is the concept of saturation (Aguboshim, 2021; Mwita, 2022).

The final sample size is five, comprising five lecturers from the selected TVET college. The sample size of five is selected as it is a sample size that can infer data saturation within qualitative contexts (Braun & Clarke, 2021; Fusch & Ness, 2015).

3.7 Data production tools

Data production tools are software programs or devices used to collect and analyse data in research (Li et al., 2019). They can include various instruments such as paper questionnaires, computer-assisted interviews, case studies, checklists, surveys, interviews, observation tools, and biological sampling methods (Pandey & Pandey, 2021).

The choice of data production tool depends on several factors, including the research objectives, research design, target population, type of data needed, and available resources (Islam & Aldaihani, 2022). Researchers should select appropriate tools that align with their research goals and ensure that the chosen tools are reliable, valid, and ethically sound. Data production tools suitable for exploratory qualitative study include Interviews, surveys, focus groups and observations (Lobe et al., 2020).

Interviews are a common method of qualitative data production. Interviews involve structured or unstructured conversations with individuals or groups to gather in-depth information and insights (Carr et al., 2019). Surveys can be used for both quantitative and qualitative data production (Creswel & Poth, 2018). In the context of qualitative research, surveys may include open-ended questions that allow participants to provide detailed responses and share their experiences or perspectives (Groenland & Dana, 2020). Focus groups involve bringing together a small group of individuals to discuss a specific topic or issue. A moderator facilitates these group discussions and encourages participants to share their thoughts, opinions,

and experiences, generating rich qualitative data (Islam & Aldaihani, 2022). Observations involve directly observing and documenting behaviours, interactions, or phenomena in natural or controlled settings. Observations provide first hand qualitative data by capturing real-time information about individuals or groups (Nassaji, 2020).

3.7.1 Rationale for selected data production tool

The research used interviews as the data production tool. Interviews allow researchers to gather detailed and nuanced information directly from the participants (Islam & Aldaihani, 2022). By engaging in open-ended conversations, researchers can explore lecturers' perspectives, challenges, successes, and opinions related to online teaching and learning experiences. The COVID-19 pandemic presented unique challenges for the education sector, including the rapid shift to online teaching. Interviews provide an opportunity to explore the multifaceted aspects of lecturers' experiences, such as their adaptation strategies, pedagogical approaches, technological challenges, and student engagement. Interviews allow researchers to delve into the personal narratives of TVET college lecturers, providing a deeper understanding of their emotions, motivations, and lived experiences during the pandemic. This can contribute to a more comprehensive analysis of the impact of the COVID-19 crisis on teaching and learning in TVET settings.

There are three types of interviews, structured Interviews, unstructured Interviews and semi-structured Interviews (Lobe et al., 2020).

In structured interviews, the questions are predetermined in terms of both topic and order. The interviewer follows a standardised script and asks each participant the same set of questions.

This type of interview provides consistency and allows for direct comparisons between participants.

Unstructured interviews have no predetermined questions. The interviewer engages in a free-flowing conversation with the participant, allowing for a flexible exploration of the research topic. This type of interview allows for in-depth insights and the emergence of unexpected information but can be less standardised and harder to compare across participants.

Semi-structured interviews are a blend of structured and unstructured interviews. The interviewer has a set of predetermined questions but also has the flexibility to probe and explore new directions based on the participant's responses (Hammond & Wellington, 2020). This type of interview balances structure and flexibility, allowing for in-depth exploration while maintaining consistency across participants.

3.7.2 Rationale for the use of semi-structured interview

Semi-structured interviews were selected because semi-structured interviews allow researchers to acquire in-depth information and evidence, providing a deeper understanding of the participants' experiences, challenges, and successes (Islam & Aldaihani, 2022). This is particularly relevant in a study focused on exploring the complexities and nuances of online teaching and learning experiences. Also, the semi-structured nature of interviews allows participant answers to guide future research questions and help in the development of a more comprehensive understanding of the experiences of technical and vocational education college lecturers during the pandemic (Magaldi & Berler, 2020). Moreso, semi-structured interviews offer a balance between structured and unstructured interviews as they provide the advantages of both approaches, including comparable and reliable data, while also allowing for the flexibility to ask follow-up questions and explore emerging themes (Walliman, 2021).

3.8 Data production method

The data production method involved a one-to-one semi-structured interview with questions being sourced from a pre-prepared interview guide. The interview guide that was centred around the research problem, research questions and information from the literature (Wagner et al., 2012). The initial phase of the interview plan began with matters of approval and permission to keep records of the discussions, and key questions and wrapped up with a concluding statement (Wagner et al., 2012).

The interviews comprised both direct questioning with open-ended questions. All interviews have audio recordings. The interviews were carried out in English.

3.9 Data analysis

Reyes et al. (2021) considers data analysis to be a process by which a researcher searches and arranges transcripts of the interviews, observatory notes, or other non-textual materials to understand the phenomenon better. Similarly, Nzinyane (2010) defines qualitative data analysis as a systematic review, synthesis, and interpretation of data to describe and explain the phenomena or social worlds being studied.

3.9.1 Data analysis methods

In qualitative data analysis, there are primarily 5 data analysis techniques, content analysis, thematic analysis, grounded theory, phenomenological analysis and narrative analysis.

Content analysis is a method that systematically examines textual data to identify themes, patterns, and meanings. Researchers analyse the content of texts, such as interview transcripts, field notes, or written documents, to derive qualitative insights.

The thematic analysis involves identifying, analysing, and reporting patterns (themes) within qualitative data. Researchers immerse themselves in the data and identify recurring

patterns of meaning, which are then organised into themes. The thematic analysis allows for a detailed exploration of the data and capturing the richness of participants' experiences.

Grounded theory is an inductive approach in which theories or concepts emerge from the data. Researchers start with open coding, which involves labelling and categorising data, then move to axial coding, which involves exploring relationships between categories. Finally, selective coding is applied to develop a comprehensive theory based on the analysed data.

The phenomenological analysis aims to understand and describe the lived experiences of individuals (Bingham & Witkowsky, 2021). Researchers thoroughly examine participants' experiences and focus on identifying the essential structures and meanings within those experiences. This approach allows for an in-depth exploration of subjective experiences and the interpretation of their significance.

The narrative analysis focuses on understanding the stories and narratives shared by participants. Researchers examine narratives' structure, content, and meaning to gain insights into personal experiences, identities, and social dynamics. This method explores how individuals construct and make sense of their experiences through storytelling (Coyle & Lyons, 2021).

3.9.2 Rationale and methodology of selected data analysis method

The study used thematic data analysis. Thematic data analysis was selected because of its ability to identify patterns and themes, flexibility, and provide insights into and from participants' experiences, perceptions, and behaviours (Robinson, 2022).

The thematic analysis allows for an in-depth exploration of participants' experiences, perspectives, and narratives. By using thematic analysis, the study can delve into the nuances and complexities of online teaching and learning experiences during the pandemic and capture the richness of participants' accounts.

The thematic analysis allows for an interpretive understanding of the data, focusing on the meaning and significance of participants' experiences (Coyle & Lyons, 2021). By analysing the themes that emerge, the study can gain insights into the lecturers' perceptions, challenges, coping strategies, and the impact of the pandemic on their teaching and learning approaches.

Thematic analysis is designed to identify patterns and themes within qualitative data (Terry & Hayfield, 2021). It provides a systematic approach to organising and categorising the data, allowing the researchers to identify common themes and variations across the lecturers' experiences. This can help uncover key issues, challenges, and successes related to online teaching and learning during the pandemic.

The following steps, adapted from Castleberry and Nolen (2018) and (Smith, 2015) were applied in analysing data using thematic analysis:

Stage 1: Preparing and organising data.

It is the first stage in the analysis process. To develop the study, each piece of information must be explored. It is essential to transcribe interview recordings into a comprehensible format to see the content with greater clarity. During the process of sorting through the material, I made preliminary notes and identified the fundamental themes used for analysis.

Stage 2: Exploring the general sense of the data.

After organising data, the next step is understanding the data so that the researcher can code and create research themes. I took time to understand the data that had been produced after transcribing the data. In the present study, the researcher elected to transcribe the interviews to get acquainted with the data. In addition, I immersed myself in the data to understand the depth and breadth of the data's substance.

Stage 3: Coding the Data

After getting familiar with the data, the next stage in thematic analysis is to code the organised data transcripts. Due to the qualitative character of the data used in thematic analysis, I identified and annotated the text with noteworthy points and phrases, which I then used to conduct a successful analysis and describe a code as the most fundamental part of data that may be considered meaningful. Coding is therefore a component of the analysis; I began to organise the data into meaningful groupings. At this stage, I was already tasked with determining the optimal strategy for data coding, which would eventually decide whether the themes are data-driven or theory-driven. In this study, I used a theory-driven strategy to begin coding to adhere to the study's goals and objectives.

Stage 4: Establishing themes.

The term thematic is used at this time. Essential to the process of thematic analysis is the identification of themes. This stage entails exploring the identified codes and keywords and categorising the data according to several categories. The themes mentioned at this level serve as a road map for the study.

Consequently, researchers must devote sufficient time to data analysis. After selecting the themes, assessing them and confirming that they align with the study's central purpose is necessary. At this stage, the researcher may fine-tune the selected topics and make any necessary adjustments. After identifying the suitable topics for the study, it is vital to define them and establish criteria that will allow classifying the data within each subject correctly. Due to the qualitative character of the data produced in thematic analysis, it is essential to establish criteria to avoid misunderstanding. It adds to the reduction of human mistakes and time savings throughout the process.

3.10 Trustworthiness

Trustworthiness in qualitative research refers to the credibility, dependability, confirmability, and transferability of the research findings and the overall rigour of the research process (Connelly, 2016). Establishing trustworthiness is essential for ensuring the quality and reliability of qualitative research. The following key aspects contribute to trustworthiness in qualitative research:

3.10.1 Credibility

Credibility demonstrates the research results' authenticity and reliability and the study context (Shenton, 2004). Credibility may be bolstered by sustained interaction, triangulation, debriefing, and member verification (Gunawan, 2015). In the current study, credibility was established by authentically capturing the participants' personal experiences as described during data production. In addition, I aimed to participate in extended engagement, persistent observation, triangulation, and negative case analysis.

3.10.2 Transferability

Transferability is the ability to transfer results from one setting to a comparable circumstance or person without losing their relevance (Stahl & King, 2020). For transferability, qualitative researchers use detailed description (Adler, 2022). My aim for the present study was to guarantee that a thorough description was used throughout the planning, execution, and reporting phases of the research. I also sought to ensure that all reports were as thorough as possible to satisfy the transferability requirement.

3.10.3 Confirmability

Confirmability relates to the impartiality and correctness of data (Rose & Johnson, 2020). It is the capacity for data to stay consistent in terms of its correctness, relevance, or meaning

between two or more independent parties. Researchers employ an audit trail, triangulation, and reflexivity to meet the confirmability requirement (Pratt et al., 2020). In this study, I used a research notebook to record process-related information, such as interview times, experiences, and events that did not necessarily pertain to the primary data. In addition, used triangulation by using interviews, and a range of literary sources.

3.10.4 Dependability

Dependability relates to the issue of whether the research method and processes can be followed to gather and understand data (Bloomberg & Volpe, 2016). It refers to the consistency of study findings throughout time. The researcher should employ an audit trail, step-by-step replication, and reflexivity when addressing dependability (Henderson et al., 2022). The dependability of the conclusions is established by the consistency and quality of the data, which enables readers to assess the sufficiency of the analysis by replicating the researcher's decision-making process. Audit trails and self-reflection were the two tactics used to ensure the dependability of the present investigation.

3.11 Ethical considerations

Research ethics is conducted within legal, academic and social statutes of what is acceptable during the course of an investigation (Tolich & Tumilty, 2021). Armond et al. (2021) assert that ethical considerations refer to principles and values that must be adhered to when engaging in human affairs. Ethical considerations prevent individuals or society from engaging in actions that may cause harm. It is a deterrent for individuals and entities to engage in malicious behaviour. The role of ethical considerations is crucial, particularly in the context of research.

As a result, ethics is concerned with how to conduct solid research and how the existing methods might be applied appropriately as detailed below.

3.11.1 Permission to carry out the study through the University of KwaZulu-Natal ethics process.

As per the requirement of the University of KwaZulu-Natal (UKZN) the first step in conducting my research was to obtain the gatekeepers permission. Therefore, permission was requested from the College of Education at the TVET to start the fieldwork. Upon receiving authorisation, a duplicate of the correspondence was distributed to the department and the participating lecturers and members involved in the study. Prior to beginning the research, a comprehensive explanation of the research objectives was provided to both the principal and the participants. In addition, the participants were appraised of the confidentiality of their identity and were assured of their right to withdraw from the study at any point without any adverse impact on their employment status.

3.11.2 Informed consent

Informed consent refers to the participant's complete knowledge of all aspects of the research (Quadrelli, 2018). I explained the goal of the study to the participants. This signifies that the participants were sufficiently informed to understand that they were participating in the study and what was expected of them. This material included the goal of the study, the procedures to be employed, and the potential outcomes of the study, as well as the accompanying demands, pain, and inconveniences (De Vos et al., 2011). I ensured that all participants were informed about the purpose of the study, the nature of their involvement, their rights, and what would be done with the data produced. Before each interview, participants received and signed a permission and information form detailing all study components.

3.11.3 Voluntary participation

Participation must be optional, and participants must not feel compelled to take part (Leedy et al., 2019). After presenting the details of the study, potential participants were asked whether they would be willing to participate. Participants who agreed to participate in the study signed a consent form. At any point, participants might withdraw from the research. After five years, all data produced by this participant will be deleted.

3.11.4 Confidentiality

Confidentiality is employed to preserve the privacy of all participants by preventing the disclosure of any information gathered during this investigation (Pietilä et al., 2020). The secrecy of the participants in this study was safeguarded by assigning a unique number to each participant in lieu of a distinguishing trait.

3.11.5 Anonymity

Anonymity is the practice of concealing the identities of all participants (Goodwin et al., 2020). To safeguard their identities, each participant was assigned a special number that would act as a pseudonym. This ID was used to identify the information, conclusions, and results.

3.11.6 Storage and preservation of data

Throughout the investigation, the transcripts were stored in a lockup and electronic research data on an encryption key-protected laptop. After completing the study, the electronic data was removed from all computers and moved to a password-protected flash drive. The transcripts and the flash drive will be kept for five years in a safe. The researcher will remove the digital data from the flash drive after five years and delete the electronic data.

3.11.7 Dissemination of findings

The college library will receive a copy of the dissertation. The research findings will be presented at national and international conferences and published in reputable publications.

3.12 Conclusion

This chapter focused on the research methodology and covered the research paradigm and approach, research design, sampling procedure, research tools, data production procedures, and data analysis. The chapter concluded with the trustworthiness, ethical issues, and data processing and analysis. To ensure the study's rigour, I employed procedures that allow for greater participation.

The next chapter will focus on presenting and interpreting results for qualitative study analysis.

CHAPTER 4

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter focuses on the presentation, interpretation and analysis of the data produced. The importance of the chapter is that it addresses the objectives based on the collected data. This chapter provides findings and discussion from the exploration of online teaching and learning experiences of TVET_college lecturers during the COVID-19 pandemic. A thematic analysis was followed with this study being located in the interpretivism paradigm in mind.

4.2 Thematic analysis of qualitative data

To ensure a thorough and nuanced examination of the results, qualitative data pertaining to the number of individuals who conveyed a particular perspective were generated and scrutinised. The study's findings were obtained through the analysis of data that were produced via interviews which identified four major themes and their corresponding subthemes. These are presented in Table 4.1.

Table 4.1**Summary of the Themes and Sub-themes**

NUMBER	THEME	SUB-THEME
1.	Level of experience with online learning as compared to traditional learning. Rapid transition to online teaching and learning.	1. Level of experience teaching online learning 2. Connecting as educators
2.	Challenges experienced by TVET lecturers with regard to online pedagogy during the Covid-19 pandemic.	1. Internet connectivity challenges 2. Absence of human contact and connection 3. Absence of appropriate ICT gadgets for online teaching and learning 4 Lack of digital skills for efficient online teaching and learning
3.	Opportunities of using ICT in online Teaching and Learning	1. Lecturers' ICT skills 2. Integration of ICT in lectures 3. Digital technology in the classroom
4.	The institutional support given to lecturers during online teaching.	1. Lack of Resources for learners and lecturers. 2. No online training is provided

The precise findings from the data analysis and discussion for each theme are presented below. The following sections will elaborate on the themes by introducing each theme and subtheme, providing evidence, and then contextualising the findings using literature that concurs with or disputes the findings of the study. To ensure the anonymity of each participant, a unique Educator number is provided to each individual.

4.3 Level of experience with online learning as compared to traditional learning and the rapid transition to online teaching and learning: TVET lecturers' experience.

4.3.1 Level of experience with online teaching and learning

The participants revealed that they lacked Online teaching experience. In terms of the level of experience teaching online, the majority of participants noted that they lacked sufficient ICT skills or any IT training to teach online properly. The participants/lecturers had always been accustomed to face-to-face instruction with conventional learning techniques.

This is demonstrated by the quoted responses below.

''Um, I'm very much lacking in experience in teaching online. All 10 years has been teaching face to face, um, from what I've seen.'' (**Participant 1**)

''Um, I have little experience with online besides the course that I am doing from the course that I'm doing. What I like is that online is more. You have access to many; many more resources and you get to work at your own pace.'' (**Participant 2**)

''Look, I had very little to no experience with online learning. When, when we, during the Covid-19, I'm used to the traditional learning methods because that's all I have known. But now with the UNISA online course, I, I think I will learn a bit more. Although the course is a bit challenging because we don't receive lectures, or we don't receive as much help as we had hoped.'' (**Participant 3**)

''Uh, very limited experience with online teaching. We currently doing a course through UNISA on how to conduct online lessons, but we have not had much experience.'' (**Participant 5**).

4.3.2 Experiences of rapid transition to online teaching and learning

During the COVID-19 pandemic, there was a dramatic transition to online learning, which has been defined as a large-scale trial-and-error process, leaving both students and lecturers bewildered (Badat, 2020). Lecturers at TVET colleges were frequently responsible for producing, overseeing, and maintaining recorded and online classes and revising lesson plans as necessary (Carrillo and Flores, 2020). Due to a lack of time to standardise the process and a lack of a learning design model, lecturers were forced to rely on their intuition to lead them through the transition to online education (Dhawan, 2020).

4.3.3 Connecting as educators.

The participants revealed that they experienced difficulties in their transition to online teaching and learning. This sub-theme provides details on how educators connected during teaching online. Online teaching and learning was a new experience for most lecturers. Lecturers, therefore, had to work together when they experienced challenges teaching online.

The quick move to online learning necessitated lecturers promptly adapting and adopting an untested online learning strategy. This is demonstrated by the quoted responses below of the recollection of the difficulties encountered by educators.

It was the circumstance. Everyone was in this fear state. It was a very anxious time, not only for us in South Africa, but for the entire world. There are some older individuals who are resistant to technology. It was really difficult for them to become accustomed to this new way of delivery. (Participant 5)

To be honest with you, transitioning to online teaching suddenly was very difficult, our minds were caught unprepared. (Participant 3)

These findings agree with Herman (2020), who concluded that students and lecturers were confused as a result due to switch to online learning during the COVID-19 pandemic, which has been termed a massive disruptive pandemic, lecturers were obliged to move to online instruction with little time to prepare, acting as instructional designers and pedagogical facilitators using tools that few had mastered (Karakaya, 2021). Their lack of experience teaching in a virtual environment was widely reported in the media, while student demand for these learning methods has skyrocketed (Mathew & Chung, 2020). This may result from lecturers' lack of pedagogical expertise in remote delivery and students' reluctance to use this strategy.

In the early stages of the pandemic, it was particularly challenging for lecturers to maintain frequent one-on-one contact sessions.

Teaching presence, as outlined in the CoI framework, entails the design, facilitation, and direction of cognitive and social processes to achieve learning outcomes. The responses from participants highlight a pronounced gap in their teaching presence, particularly when transitioning to online formats. The absence of sufficient ICT skills and the limited exposure to IT training as voiced by the lecturers underscored the challenges faced in navigating the virtual teaching landscape. The long-standing reliance on face-to-face instructional methods, as reflected in the participants' statements, evidences the traditional notion of teaching presence, where the educator's physical presence and conventional techniques dominated the learning environment. The abrupt shift to online learning disrupted this traditional teaching presence, necessitating the cultivation of a new form of presence within the digital realm. The anecdotal references to courses like the one through UNISA, as mentioned by Participant 5, indicate attempts to establish a renewed teaching presence in online settings. However, the steep learning

curve and the challenge of moving from traditional to virtual spaces reveal the depth of transformation required in terms of pedagogical skills and technological proficiency. In essence, the participants' narratives around their level of experience with online learning, when viewed through the lens of the CoI framework, shed light on the complexities and nuances associated with establishing a robust teaching presence within the rapidly evolving digital education landscape.

4.4 Challenges experienced by TVET lecturers with regard to online pedagogy during the COVID-19 pandemic.

In the semi-structured interviews, the participants were asked to discuss the difficulties/opportunities that TVET lecturers encountered with online pedagogy during the COVID-19 pandemic. These hurdles included insights regarding their students' difficulties and the impediments they encountered as educators.

The participants revealed that they encountered difficulties in terms of connecting to students due to connectivity challenges, absence of human contact and connection, absence of appropriate ICT gadgets for online teaching and learning and lack of digital skills for efficient online teaching and learning.

4.4.1 Internet connectivity challenges

The participants expressed their requirement for internet connectivity when conducting online teaching in the context of challenges related to internet connectivity. Participation in digital learning sessions or the consumption of pre-recorded media necessitated the use of internet-enabled digital devices, such as computers, tablets, or smartphones, by both instructors and students, who were required to remain at home and log in to a preferred hosting platform.

All the participants noted the challenge of conducting online teaching in the absence of a reliable internet connection for their students. The challenges stemming from the lack of access to electricity and internet connectivity were not limited solely to students. Some participants have expressed concerns regarding connectivity, which has raised questions about the credibility and competence of educators to effectively facilitate online sessions.

''Imagine being in charge of the session and being ejected out of the classroom because of a dip in connectivity, it's not just the technical issue of reentering the room; it's also the flow of the session, the credibility.'' (**Participant 2**)

''I believe it is dependent on your location in South Africa due to data connectivity. Also, in impoverished places, online teaching might not be as viable, as we have encountered students with financial difficulties to be able to afford data bundles.'' (**Participant 1**)

Research on digital education recognises the lack of internet connectivity as the most significant barrier to accessing the online learning environment in SA (Herman, 2020; Kupe, 2020).

This viewpoint reinforces the assertion that students residing in rural areas encounter a disadvantage in the context of online learning due to their lack of access to the infrastructure that their urban counterparts possessed (Amnesty International, 2020). Moreover, the difficulties associated with attending the session in person are compounded by the digital proficiency required to navigate the virtual learning environment.

According to the 2018 Global Competitiveness Report by the World Economic Forum, the Fourth Industrial Revolution and digital skills have been identified as key economic growth and development drivers. As per the report, South Africa's insufficient uptake of Information and Communication Technology (ICT) and delayed acquisition of digital skills have placed the

country at the 116th position out of 140 nations. This has characterised the nation as ill-equipped to thrive in the forthcoming economy (World Economic Forum, 2018). Simultaneously, the development of critical thinking abilities is imperative in post-secondary education, necessitating the instruction of techniques for accessing and distributing web-based information to students (Dube, 2020).

4.4.2 Absence of human contact and connection

Another subtheme from the interviews was the absence of human contact and connection. Participants experienced feelings of isolation when working remotely. Participants felt the distance due to the absence of face-to-face teaching. They believed that this distance impeded the development of ties between students, lecturers, and institutions.

''The first-year students from last year have no idea what's going on. I believe that was a significant adjustment for them.'' (**Participant 4**)

'' Students were just adjusting to college life and meeting their educators and peers when they were placed into a scenario where they were essentially working alone.'' (**Participant 5**)

These results align with the assertions made by Fernandez and Shaw (2020), who posited that academic and social engagements typically cultivate a feeling of affiliation and, in the absence of such a sense of belonging, students may exhibit reduced motivation towards academic tasks. Recent research suggests that students have reported experiencing feelings of loneliness amidst the pandemic (Labrague et al., 2021). Exhibiting attentiveness and concentration in a conventional classroom environment necessitates the possession of self-discipline. Maintaining attentiveness and alertness during online classes necessitates a significant amount of self-discipline. The duration of attention spans has decreased further. This notion intensifies in the

digital arena; the virtual classroom demands an even more profound reservoir of self-discipline. It's alarming, however, to note the ebbing tide of attention spans in such settings. As education adapts, so too does the very nature of our attentiveness, revealing an intricate dance of focus and distraction.

In accordance with Vygotsky's social constructivist theory, which posits that learning is inextricably linked to the social context and interpersonal relationships that surround the learner (Seifert and Sutton, 2009), the participants' observed that digital learning has heightened students' desire for connectivity to facilitate the learning process and adapt to the learning environment. Despite the participants' willingness to engage in online sessions, their involvement was impeded by various factors such as their living conditions, intermittent power outages, and unreliable internet connectivity.

4.4.3 Absence of appropriate ICT gadgets for online teaching and learning.

The participants revealed an absence of appropriate ICT gadgets for online teaching and learning.

Participants viewed the lack of an appropriate learning platform for the live streaming of lectures as a barrier to teaching and learning on the campus. They emphasised that most TVETs have not provided lecturers and students with the required online teaching and learning tools.

''The majority of lecturers lacked Wi-Fi and laptop computers.'' (**Participant 1**)

''Uh, the biggest challenge, I think, that I have found is that most of our students come from disadvantaged backgrounds, and they do not have the resources needed to do online during Covid because of the fact that they didn't have resources. Uh, we used. Uh, because they did most didn't have access to the internet.'' (**Participant 2**).

''Some don't even have smartphones, so they weren't even able to do the WhatsApp. So when we came back to work after COVID-19, we had to re-teach the stuff that we did teach during COVID-19 via WhatsApp. So that was, um, doing the work twice.'' (**Participant 2**).

''Online instruction did not work well at our campus because our students did not have access to computers and the internet. We communicated via WhatsApp and some students did not have data.'' (**Participant 3**).

These remarks highlight the concern that the insufficiency of suitable pedagogical and technological tools hinders the execution of online instructional practices. This resonates with a study by Tamrat and Teferra (2022) who noted that the absence of substantial resources and infrastructure has hindered the ability of higher education institutions in Ethiopia to transition to online courses and programs. It is possible that the TVET colleges were unable to provide their educators and learners with sufficient educational materials and resources due to comparable factors. Inadequate resources and infrastructure may have hindered the conversion of classrooms into online-learning hubs. The application of Heifetz et al. (2009) Adaptive Leadership Theory can facilitate understanding the insufficiency of technologies used in online teaching and learning. The theory of adaptive leadership facilitates the ability of leaders to engage in collaborative efforts with all relevant stakeholders, thereby enabling the development of optimal solutions through the application of innovative thinking.

The issue of computer accessibility in developing countries has garnered attention, prompting the implementation of ITC initiatives aimed at creating cost-effective laptops and tablets suitable for rural settings. These devices come equipped with pre-installed educational materials and use low-voltage recharging mechanisms such as manual dynamos and solar panels (Dube, 2020). The effectiveness of these programmes, designed to offer solutions to

impoverished populations, has been hindered by infrastructure limitations and the substantial expenses associated with production and upkeep (Carrillo & Flores, 2020).

4.4.4 Lack of digital skills for efficient online teaching and learning

The participants revealed that there was a lack of digital skills for efficient online teaching and learning.

The participants lack of efficient ICT skills also stood as a major constraint to the successful integration into online teaching.

''We were caught unaware without adequate the technical knowhow to operate the ICT gadgets.'' (**Participant 5**)

''The other major challenge was there was no IT specialist guy nearby to help us through the online teaching process.'' (**Participant 2**)

The study resonates with Kupe (2020) who articulated that, since there wasn't enough time to standardise the process and no learning design model to provide direction, lecturers had to rely on their instincts to lead them through the transition to online education (Kupe, 2020). The initial focus of TVET was on converting existing curricula to a digital environment rather than developing or comprehending digital pedagogy in its finer details (Motaung & Makombe, 2021). TVET lecturers lacked sufficient time to thoroughly analyse the user interface of the digital world in light of the students' requirements, capabilities, and limitations (Motaung & Makombe, 2021). Since many TVET lecturers came from low-income families, they lacked the requisite ICT background when they switched from a traditional classroom to a virtual one (Mathew & Chung, 2020).

The abrupt transition to online teaching, as exemplified by the participants' testimonies, highlights the unpreparedness of TVET lecturers in terms of technological infrastructure and digital proficiency. Their inability to seamlessly conduct online sessions, stemming from unstable internet connections and the lack of appropriate digital devices, reveals a disrupted teaching presence. The sentiment that "we were caught unaware without adequate technical know how to operate the ICT gadgets" from Participant 5 accentuates the gap in digital pedagogical skills and the emergent need for the redefinition of teaching presence in online environments. The mentioned lack of standardised processes, learning design models, and available IT support further emphasizes the challenges faced by lecturers in establishing a solid teaching presence amidst the crisis. The subtheme on the "absence of human contact and connection" underscores the breakdown of social presence. The feelings of isolation and the perceived barrier in building relationships between students, lecturers, and institutions are indicative of the challenges in fostering a sense of community online. The concerns raised by Participant 4 and 5, noting that students, especially first-year ones, felt disconnected and were adapting in isolation, provide insights into the disconnection felt during remote learning experiences. The mention of decreased attention spans in the digital setting alludes to the difficulties in maintaining engagement and ensuring effective communication, further indicating obstacles to maintaining social presence in online classrooms.

4.5 Opportunities for using ICT in online teaching and learning.

The study's findings showed that, particularly in open and remote learning, the significance of information and communication technology (ICT) has dramatically changed for distant learning delivery techniques. The participants revealed that they were presented with

limited opportunities to use ICT in their online teaching and learning as they lacked the necessary skills. Therefore, the subthemes emerged, which are: lecturers' ICT skills, integration of ICT in lectures, and digital technology in the classroom.

4.5.1 Lecturers' ICT skills

A subtheme that emerged was the lecturer's ICT skills. The participants expressed the need for ICT skills as evident below:

''We had to quickly upgrade our ICT skills, which of course was an advantage because the skills you acquire remain with you even after COVID-19.'' (**Participant 3**)

Lecturers must promptly adapt their skills and learning and teaching materials to the online learning environment (using technology) to ensure that remote learning is launched and supported within a specified timeframe (Bagwell, 2020).

Possessing a pleasant learning environment, being inventive, engaging in new activities, getting along well with other students, and managing one's time well are less frequently cited advantages. Researchers from other countries confirmed many of these findings. Bozkurt and Sharma (2020) found that pupils in the United States and Malaysia placed high importance on adaptability. Educators have favourably embraced the convenience.

4.5.2 Integration of ICT in lectures

Another sub-theme that was revealed was the integration of ICT in lectures.

The participants expressed the need to integrate ICT in lectures.

''I think if there is anything COVID-19 has done for use is to make TVET colleges understand the importance of integrating ICT in the lectures.'' (**Participant 2**)

To combat this pandemic, universities are rapidly digitising their instructional methods. Educators have the option to use integrated communication and collaboration systems such as

Canvas, Microsoft Teams, Blackboard and Google Classroom to design and provide web-based courses, instruction, and proficiency enhancement initiatives, in addition to the customary academic and financial objectives of educational institutions (Carrillo & Flores, 2020).

4.5.3 Digital technology in the classroom

The participants communicated their views on digital technology in the classroom.

''Imagine being in charge of the session and being ejected out of the classroom because of a dip in connectivity, it's not just the technical issue of re-entering the room; it's also the flow of the session, the credibility.'' (**Participant 2**)

''I believe it is dependent on your location in South Africa due to data connectivity. Also, in impoverished places, online teaching might not be as viable, as we have encountered students with financial difficulties to be able to afford data bundles.'' (**Participant 1**)

During the pandemic, distance education was a lifeline for education, but the opportunities afforded by digital technology extend far beyond a fast fix (OECD., 2019). As a result of the proliferation of digital technologies, there has been a profound shift in how, when, and where people learn. Upon reviewing the guidelines presented in section 3.4.2 of Chapter 3 by the European Data Portal pertaining to the efficacious assimilation of online learning, it is evident that South Africa falls short of the prescribed benchmarks for triumph in the domains of unfailing hardware and internet accessibility, as well as the essential proficiencies for adept use of technology (Mlambo & Ndebele, 2021). Continuing research and surveys conducted among higher education institution students globally indicate that the transition to online learning was not universally perceived in a negative light. From survey findings, it can be inferred that students perceive an enhancement in their self-reliance and digital competencies (Govender & Olugbara, 2021). Educational professionals are similarly impacted. As per the findings of a

report published by the International Association of Universities (2020) regarding the influence of COVID-19 on higher education worldwide, the majority of participants perceived the shift towards online learning as a chance to enhance their professional competencies, cultivate adaptable learning approaches, and progress in their respective vocations.

Learning outcomes should be combined with synchronous and asynchronous learning, the evaluation of novel tools and systems to facilitate remote learning (Marinoni et al., 2020). This demonstrates not only a growth in digital skills, but also a mental shift toward the educational benefits of technology.

In the context of Theme 3, focusing on the opportunities of using ICT in online Teaching and Learning, the relevance of the Communities of Inquiry (COI) framework becomes particularly evident. Beginning with lecturers' ICT skills, the emphasis on cognitive presence becomes palpable as TVET lecturers, having swiftly enhanced their ICT competencies, were positioned to delve deeper into content, thereby fostering higher order thinking and comprehension within their community of learners. This capacity not only promoted teaching presence—owing to the improved instructional design and organisation that came with increased ICT proficiency—but also boosted social presence, with educators navigating online environments more effectively to foster connection and unity among students. As the discussions transition to the integration of ICT in lectures, the narrative unfolds to reveal that such integration can profoundly stimulate cognitive engagement, allowing students to interact dynamically with content. Beyond just being a tool, ICT becomes instrumental in curating a rich, multi-modal learning environment, underscoring the teaching presence. Furthermore, it fosters collaborative learning experiences, thereby enhancing the social presence and enabling students

to cultivate a shared understanding in the virtual realm. Lastly, the incorporation of digital technology in classrooms not only facilitates diverse content representation, appealing to a myriad of learning styles and ensuring cognitive engagement, but also aids in blending learning environments, streamlining teaching methods, and promoting peer interactions. Through interactive digital platforms, students can bolster relationships and collaboratively construct knowledge. This interweaving of themes with the COI framework illustrates the profound alignment of the study's data within a pedagogically robust model.

4.6 Institutional support given to lecturers during online teaching.

Two subthemes emerged under this theme: the lack of resources for learners and lecturers as well as the online training provided. The findings from the study revealed that the ICT infrastructure, such as laptops or tablets, and data for participants were not delivered until COVID-19 was nearly under control. The majority of participants bemoaned the absence of institutional support during the shift to online education. They noted that the majority of lecturers were accustomed to traditional face-to-face instruction and hence required ICT skill-upgrading training and ICT resources such as laptops.

4.6.1 Lack of Resources for both learners and lecturers

The participants revealed that lecturers needed resources to conduct online teaching and learning but were limited due to the absence of resources.

''Um, most of us have never ever taught online, so we needed resources like a laptop. We needed data, and more importantly, we needed to be taught how to teach online. But besides that, there was no other support.'' (**Participant 2**)

4.6.2 No online training provided.

The participants indicated that they did not receive training in online teaching.

''From face to face to the online mode of teaching and learning. During the Covid-19 pandemic, they did not provide training of lecturers and they did not provide the resources for both the learners and the lecturers to be able to conduct online learning. So, no training and no resources were provided.'' (**Participant 5**)

''No support was really given during Covid-19 by the institutions. So, for me, it wasn't a positive experience. I felt very overwhelmed, and I did not feel equipped to properly teach my students during that time.'' (**Participant 5**)

''No, we did not. We were left. We were at home, and we were left. Our own devices to plan on how we are going to get work to the students. Most of us just used WhatsApp plus groups to communicate with them.'' (**Participant 3**) *I think laptops or tablets and data for lecturers were only provided towards this year 2022. And we also were, didn't have any knowledge on how to conduct online, so we didn't receive that support.''* (**Participant 2**)

When they switched from traditional to digital classrooms, many TVET lecturers from low-income homes lacked the essential ICT background (Mathew, 2020). The classroom was designed to be teacher-centred, with the teacher doing most of the talking while students listened silently with muted devices. Despite the widespread use of so-called cutting-edge and enabling digital resources to facilitate education, many lecturers have resorted to inadequate, archaic practices that bore, distract, and underwhelm their students (Megahed & Hassan, 2022).

In examining the institutional support rendered to lecturers during online teaching, the COI framework's significance becomes discernible. The profound lack of resources for both learners and lecturers, particularly during the sudden pivot to online learning due to the

pandemic, critically affected the teaching presence. Without the necessary tools and skills, lecturers struggled to design, organise, and facilitate effective online instruction. The absence of adequate training further exacerbated this challenge. The omission of online training not only hampered the cognitive presence, as the educators, not being sufficiently versed in the art of online teaching, might have been unable to stimulate higher-order cognitive processes among learners, but also impeded the nurturing of a constructive social presence, since the untrained educators may not have fostered effective communication and group cohesion in the virtual environment. Furthermore, the reported lack of support and the overwhelming feelings shared by participants during the transition reflect the absence of an effective community of inquiry. This experience highlights how pivotal institutional support is in cultivating the three presences - cognitive, social, and teaching - in an online learning environment. The delayed provision of essential ICT resources only underscores the importance of having these components in place for a seamless and effective teaching and learning experience.

4.7 Conclusion

In this chapter, I gave a detailed reflection of the experiences of participants teaching online during the COVID-19 pandemic. The chapter documented the challenges experienced by participants when teaching online. The study's results demonstrate the experiences of TVET college lecturers and the level of support provided by the TVET college. The results further highlight that limited resources made transitioning from traditional to online learning difficult. The transition to online teaching and the use of digital platforms have also highlighted the

socioeconomic inequalities among TVET college students, which has an impact on online teaching and learning.

In reflecting upon the findings of this thematic analysis, it's essential to dovetail them more intrinsically with the Community of Inquiry (CoI) framework. At its core, CoI postulates the convergence of social, cognitive, and teaching presence as the cornerstone for a meaningful online learning experience (Garrison, Anderson, & Archer, 2000). Our findings, when viewed through the prism of CoI, hint at the intricate interplay of these presences, underscoring the significance of each in shaping the digital pedagogical landscape. For instance, the themes emphasising lecturer-student interaction and collaborative learning echo the tenets of social presence, while those highlighting the challenge of content delivery resonate with the teaching presence. Furthermore, drawing parallels with contemporary literature in the field, it becomes evident that our findings mirror broader trends and challenges witnessed globally. The synthesis of our data with seminal works in the domain not only enriches the depth of our insights but also positions our research within a wider academic discourse, thereby reinforcing its relevance and applicability in understanding the nuances of online learning during unprecedented times.

CHAPTER 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

5.1 Introduction

This chapter presents the research summary, conclusion, recommendations and limitations of the study. The chapter acts as a conclusion for the research as it provides the key points of the study.

I was able to use the lived experiences and perceptions of the TVET lecturers to extract a clear picture of their experience in online teaching and learning during the COVID-19 pandemic.

5.2 Summary of the research methods

The primary goal of the research was to comprehend how technical and vocational education college lecturers experienced online teaching and learning throughout the coronavirus pandemic. I set out to accomplish some prerequisite goals, these included the level of experience teaching online learning, difficulties encountered by participants with regard to online pedagogy during the COVID-19 pandemic, opportunities to use ICT in online Teaching and Learning, and institutional support provided to lecturers during online teaching. In KwaZulu-Natal, the research was carried out in a TVET college. Five lecturers from this TVET institution participated in the research. Face-to-face interviews were performed using the explorative qualitative methodology. To gather and analyse the necessary data, an interpretative and/or constructivist philosophical paradigm was used. Interviews that were semi-structured were used to obtain data. The theme analysis technique was suitable given the data produced. The data was analysed using categories of themes and sub-themes, as shown below.

5.3 Conclusions: the major findings of the research

This section presents findings derived from the qualitative research study that sought to understand the online teaching and learning experiences of technical and vocational education and training college lecturers during the coronavirus pandemic.

5.3.1 Teaching and learning challenges/opportunities experienced by technical and vocational education and training lecturers with regard to online pedagogy during the COVID-19 pandemic.

The first research question sought to understand the challenges /opportunities experienced by technical and vocational education and training college lecturers during the COVID-19 pandemic.

Lecturers experienced great difficulty in terms of teaching online during the COVID-19 pandemic. The participants' accounts in the study revealed that TVET lecturers encountered difficulties in connecting to students due to connectivity challenges, the absence of human contact and connection, the absence of appropriate ICT gadgets for online teaching and learning and the lack of digital skills for efficient online teaching and learning.

Participants indicated that they lacked adequate internet connectivity due to insufficient data or poor internet connectivity. Some participants indicated that they were sometimes ejected from the lesson due to a dip in connectivity. Further, some participants also made mention of the challenges faced by students in terms of no data bundles being provided for learners from rural areas.

The study participants' accounts revealed that they felt the absence of human contact. They experienced a feeling of distance from their work peers. Participants indicated that they

experienced a sense of isolation and distance due to the absence of traditional face-to-face teaching and learning.

The participants' accounts in the study revealed an absence of appropriate ICT gadgets for online teaching and learning. Participants indicated that the lack of these gadgets posed a barrier to teaching and learning. Participants also indicated that they used WhatsApp groups but found it ineffective as students did not have smartphones. Most students come from previously disadvantaged backgrounds; therefore, reaching students regarding online teaching and learning was difficult.

The study participants' accounts revealed that they lacked digital skills. This was a significant challenge as online teaching and learning required computer literacy. Some participants indicated that it was their first time teaching online and that they did not have the necessary skills to conduct lessons.

5.3.2 TVET lecturers' experiences of institutional support during the transition from face-to-face to the online mode of teaching and learning during the COVID-19 pandemic.

The second question sought to understand the institutional support given to lecturers during the COVID-19 pandemic. Participants indicated they were not given ICT gadgets to teach online. The majority of participants stated that they did not receive Institutional support to teach online. Some participants indicated that they were not taught how to teach online. They also indicated that they did not receive online training. These results show that lecturers were not prepared for online teaching and learning. Challenges such as lack of support for the integration of technology into their practice hindered effective teaching and learning.

5.3.3 TVET lecturers relating their online teaching and learning experiences to the institutional support that is provided during the COVID-19 pandemic.

The third question sought to understand how lecturers relate their online teaching and learning experiences to the institutional support provided during the coronavirus pandemic.

Participants indicated that they were left to function on their own. Some participants did not view the situation as a positive experience. Participants indicated that they did not feel equipped to teach their students online. These findings reveal that the participants did not have sufficient experience and support for teaching online.

Participants' experience with teaching online indicates online teaching and learning was ineffective. The absence of institutional support further exacerbated online teaching and learning. Management's lack of support also resulted in lecturers losing interest in online teaching and learning. Management is responsible for providing resources and support for effective teaching and learning, but they failed to meet this obligation during the COVID-19 pandemic.

5.4 Implications of the study

The ensuing recommendations are proffered for the purpose of intervention. The extant research literature indicates that educators have encountered obstacles with respect to their connectivity. It would have been prudent for Technical and Vocational Education and Training (TVET) institutions to have established robust connectivity infrastructure prior to the onset of the COVID-19 pandemic. For quite some time now, South Africa has been progressing towards a state of technological advancement. The concept of online instruction and education is not a novel occurrence. Institutions of higher learning must prioritise investment in internet connectivity across all tertiary campuses. The pedagogues, too, encountered a dearth of interpersonal interaction due to their sole exposure to in-person instruction. It was inevitable that

we would transition from face-to-face interactions to online interactions. It would have been expected that institutions of higher learning would have provided their esteemed faculty with the requisite knowledge and competencies to deliver instruction in virtual environments effectively. Incorporating blended learning into the educational framework would have benefitted pedagogy and scholarship favourably.

The present study has ascertained that remote instruction and learning from the domicile is a viable substitute work arrangement in the midst of the pandemic predicament. It is imperative to note that optimal execution of online teaching and learning from home necessitates collaboration between the employer and its employees. In this particular instance, it is imperative to note that the provision of assistance from the institution's administration is of utmost importance in enabling optimal staff output. Conversely, it necessitates a certain level of dedication on the part of every scholar to amalgamate virtual pedagogy and scholarship with conventional face-to-face instruction.

The research indicates that educators were provided with restricted assistance amidst the COVID-19 outbreak. The provision of information and communication technology infrastructure and devices by institutions of higher learning has been inadequate. The aforementioned circumstance impeded the efficacy of online pedagogy. The instructors have conveyed that they were not in receipt of the laptops in a timely manner, thereby impeding their ability to conduct online lectures. Institutions of higher education must furnish laptops to their academic staff to facilitate the integration of online pedagogy into the present curriculum. Pursuing online learning or teleworking from the comfort of one's abode necessitates substantial material backing, and providing such resources could substantially augment this experience.

As elucidated in this scholarly investigation, the dearth of digital resources and/or commensurate assistance significantly influences the efficacy of virtual pedagogy and erudition. The dearth of experience in the realm of online pedagogy presented a formidable obstacle. Prospective investigations or scholarly inquiries could encompass the inclusion of instructors from alternative TVET institutions to juxtapose their pedagogical encounters in the realm of online instruction. It is imperative to pay meticulous attention to the requirements of educators with respect to the assistance demanded and the assistance dispensed amid the ongoing pandemic. The quality of lecturers' teleworking experience from their homes would be markedly enhanced if the institution exhibited its backing by promptly and effortlessly furnishing both its staff and students with the essential resources to facilitate their adaptation to remote learning and their professional milieu. One may inquire as to the rationale behind transitioning to online instruction if the students are not accessible or actively participating in the educational process or if there is insufficient assistance being offered.

5.5 Delimitations and limitations of the study

The selected TVET college is the sole educational establishment used as a data source. The TVET college in question comprises six campuses, all of which are situated within the KwaZulu Natal region. This impeded my ability to acquire information from TVET institutions located beyond the borders of KwaZulu-Natal. Consequently, the findings of the study are limited in their applicability to the specific TVET college under investigation rather than being representative of the broader population of TVET colleges. An additional constraint pertains to the fact that certain individuals may decline participation in the research, and it should be noted

that the COVID-19 pandemic represents a recent and unprecedented phenomenon, thereby resulting in a dearth of available studies.

Moreover, the recruitment of participants was challenging owing to the widespread impact of the COVID-19 pandemic.

5.6 Directions for future study

There are multiple prospective avenues for further investigation that can expand upon the discoveries of this research.

Longitudinal studies are necessary to investigate the enduring effects of the abrupt transition to online instruction on technical and vocational education college instructors. This research endeavour has the potential to evaluate alterations in the instructional methodologies, pedagogical strategies, and requirements for professional growth among educators over a prolonged period. Longitudinal studies have the potential to examine the efficacy of support mechanisms and interventions that have been implemented to tackle the difficulties encountered by these instructors.

An alternative avenue for investigation could involve an examination of the efficacy of diverse teacher training initiatives and supportive measures extended to instructors in technical and vocational education colleges amidst the pandemic and the examination of the effects of said interventions on the online pedagogical competencies, self-assurance, and general contentment with the instructional and educational procedures. This approach could be augmented by an investigation into the efficacy of distinct pedagogical methodologies and technologies employed by instructors in technical and vocational education colleges amidst the pandemic.

In light of the fact that online learning has become a permanent feature of TVET, it is imperative to explore the establishment of industry best practice standards and directives that are

custom-made for lecturers in TVET colleges. These measures will ensure effective online teaching and learning during emergency situations. This can facilitate the formulation of policy decisions and bolster the creation of all-encompassing strategies for forthcoming emergencies or disruptions in the realm of education.

By adhering to these guidelines for prospective research, scholars can make a valuable contribution to the expanding corpus of information regarding virtual pedagogy and educational encounters in technical and vocational institutions in response to any disruption that may force riveting back to full online studies.

5.7 Conclusion

This chapter contains a summary that focuses on the most important aspects of the study. After that, the chapter offered the findings and conclusions of the study, as well as suggestions for further research and possible courses of action. The results are consistent with the replies provided by those who took part in the survey.

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APPENDICES

Appendix A-Interview guide

Exploration of online teaching and learning experiences of technical and vocational education college lecturers during the corona virus disease pandemic.

The objectives of the study are:

1. To determine challenges /opportunities experienced by technical and vocational education lecturers with regards to online pedagogy during the corona virus pandemic.
2. To explore the technical and vocational education lecturers' experiences with regards to institutional support during the transition from face to face to online mode of teaching and learning during the corona virus pandemic.
3. To explore how technical vocational education lecturers relate their online teaching and learning experiences to the institutional support that is provided during the corona virus pandemic.

Question explanation

The first three questions are qualifier questions to determine if the interviewee meets the inclusion criteria and to also make the interviewee comfortable as they are general easy questions.

Question 4 to 6 are related to the first objective.

Questions 7 to 12 are related to the second objective.

Questions 13 to 15 are related to the third objective.

Interview question Guide

1. Where do you work and what is your current work title?

2. How long have you been in this role and what is your age?

6. From your experience, what are some of the opportunities that you have experienced as a lecturer with regards to online instruction?

7. What challenges and opportunities have learners been confronted with when engaging in online learning versus face-to-face learning?

15. What recommendations would you make to the institution in terms of providing support to students to promote a better transition to online learning?

Appendix B- Participant's Consent Request

Adheesh Singh

█ █ █

█

Chatsworth

4092

█

Email: █

28 July 2022

Dear potential participant

I wish to invite you to participate in the study, "Exploration of online teaching and learning experiences of technical and vocational education and training college lecturers during the coronavirus disease pandemic."

The study will involve interviewing five lecturers. The study will be guided by the main research questions that reflect on the transition to online learning during the COVID 19 impact. You will be involved in a structured interview, open-ended interview, where there will be a set of questions based on a topic that will be asked as we engage in a conversation to learn about your experiences during the COVID 19 pandemic. Due to the current situation caused by the COVID 19 pandemic, an interview will be conducted through a recorded Zoom communication. The interview will take approximately 30 minutes.

There are no risks involved in this study, however if you feel uncomfortable at any time, please inform me, the researcher. The participation in this study is entirely voluntary. The purpose of this qualitative study is to explore the challenges experienced using online learning during the COVID 19 pandemic. I believe that participating in the study will provide you with an opportunity to reflect on your experience and share these in terms of the challenges of using online teaching during the pandemic.

Anonymity and confidentiality will be ensured as no names of persons will be revealed in the research reports that will be written and published. Data generated from the interview will be stored on an audio tape and given a strict confidentiality. It can only be accessed by me and my supervisor for research purposes. At the present time, I am not aware of any risks in your participation. Because participation in this study is entirely voluntarily, you may withdraw anytime if you no longer want to participate.

There are no immediate benefits to you from participating in this study. However, this study will be extremely helpful to me in developing a research report on this topic that I hope will provide a useful viewpoint on challenges experienced using online teaching during the pandemic. The study hopes to explore and understand the experiences of lecturers using online teaching during the pandemic.

If you would like to receive feedback on this study, I will record your email address separately and can send you the final report from the study when it is completed. If you have any further questions or concerns about the research, please feel free to contact me via email (█) or telephonically (█). Alternatively, feel free to contact

my supervisor, Dr Thoko Mnisi, via email (mnisi@ukzn.ac.za). You may also contact the UKZN Humanities & Social Sciences Research Ethics Committee; contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X54001

Durban 4000

KwaZulu- Natal, South Africa

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Appendix C - Consent Form**CONSENT**

I _____ (your name and surname) have been informed about the study entitled “Exploration of online teaching and learning experiences of technical and vocational educational and training college lecturers during the coronavirus disease pandemic.

I understand the purpose and procedures of the study.

I have been given an opportunity to answer questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

I have been informed about any available compensation or medical treatment if injury occurs to me as a result of study-related procedures.

If I have any further question/concerns or queries related to the study I understand that I may contact the researcher at _____.

If I have any questions or concerns about my rights as a study participant, or I am concerned about an aspect of the study or the researcher then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001 Durban 4000 KwaZulu-Natal,

South Africa Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Additional consent, where applicable

I hereby provide consent to: Audio- record my interview YES / NO

Taking of field notes YES / NO

Signature of Participant
(Where applicable)

Date

Signature of Witness

Date

Appendix D- Principal's consent request



Enquiries: PA to the Principal
Imibuzo: Ms N Dlamini
Navrae:

Telephone: 031 250 8400
Fax Number: 031 250 8404
Address:

Date: 2022-10-17
Usuku:
Datum:

Mr A Singh

Township
4092

Dear Singh

RE: REQUEST FOR USING COLLEGE AS SITE OF RESEARCH

Thekwini TVET College has no objection to you using our College as a site of research on exploration of on-line teaching and learning experiences of TVET Colleges lecturers during Covid-19: A case-study of a TVET College.

However, the following conditions for external research apply:

- The College will have right to approve content with regard to research instruments and research analysis.
 - The relevant documents must be forwarded to the College Principal and approval of usage will be given by the College Principal in writing.
- The name of the College or any of its sites cannot be used in any documents
- The name/s of staff employed by the college cannot be used.
- The use of any findings that reflect negatively on the College, its partners or any related body must be approved in writing by the College Principal.

Please note that the failure to comply with all of the above conditions will result in the necessary legal action against you.

Your cooperation in this regard will be highly appreciated.

Yours faithfully

Mr. NE Mchunu
College Principal

I have read the content of this letter and I accept the conditions

A.SINGH
NAME

[Redacted Signature]
SIGNATURE

2022-10-20
DATE

Appendix E – UKZN Ethical Clearance



24 October 2022

Adheesh Singh (9900290)
School Of Education
Edgewood Campus

Dear A Singh,

Protocol reference number: HSSREC/00004719/2022

Project title: Exploration of online teaching and learning experiences of technical and vocational education and training college lecturers during the coronavirus disease pandemic

Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 07 September 2022 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. **PLEASE NOTE:** Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 24 October 2023.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,



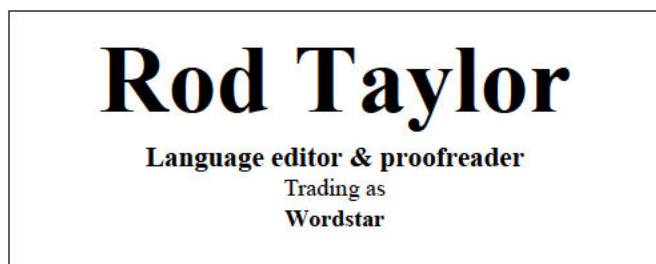
Professor Dipane Hlalele (Chair)

/dd

Humanities and Social Sciences Research Ethics Committee

Postal Address: Private Bag 954001, Durban, 4001, South Africa

Telephone: +27 (0)31 260 8150/9557/3587. Email: hssrec@ukzn.ac.za. Website: <http://research.ukzn.ac.za/research-ethics>

Appendix F – Editing certification

ic Road

Randpark 2194

[Redacted]
Email: wordstar@iafrica.com

21 June 2023

To whom it may concern**Language Editing – Adheesh Singh.**

I have reviewed the dissertation entitled “Exploration of online teaching and learning experiences of technical and vocational education college lecturers during the coronavirus pandemic” in terms of spelling, language and grammar and have made recommendations to the author concerning the changes necessary.

R. Taylor
MBA BSc DTM

Appendix G: Turnitin report

Adheesh Singh | EXPLORATION OF ON-LINE TEACHING AND LEARNING EXPE... /null < > ?

EXPLORATION OF ON-LINE TEACHING AND LEARNING EXPERIENCES OF
TECHNICAL AND VOCATIONAL EDUCATION COLLEGE LECTURERS DURING
THE CORONAVIRUS DISEASE 2019 PANDEMIC

ADHEESH SINGH

Submitted in fulfillment of the requirements for the degree of
Masters in Higher Education

in the

College of Education, School of Humanities

at the

University of Kwazulu-Natal

2023

Supervisor: Dr.T.E. Mnisi

Match Overview

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