

**Exploring the impact of the use of technologies on accounting lecturers'  
pedagogy during online teaching.**

**By**

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## DECLARATION

I hereby certify that this dissertation, "Exploring the impact of the of use of technologies on accounting lecturers' pedagogy during online teaching: A Case Study at a TVET College," is entirely my own work and that all sources used or quoted have been properly cited.

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**Date** 1 November 2022

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## **DEDICATION**

In honour of my aunt Mokgadi Mokadikoa Ledile Makgato and my father Simon Rabothe  
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## **ABSTRACT**

The adoption of online learning by many institutions has become essential since December 2019, when COVID-19 cases began to manifest all over the world. South Africa's lockdown, which began on March 26, 2020, compelled higher education institutions to employ alternative teaching strategies and offer online support to students. Academic activities had to continue during this crucial period, even though students and lecturers were not in the typical classroom setting. This study sought to explore the impact of the use of the effects of technology on TVET accounting lecturers' pedagogy during online teaching under COVID-19 conditions. The study was guided by the interpretive paradigm, and adopted a case study design with a methodological approach because it had a qualitative design. Purposive sampling was used to select 12 accounting lecturers and convenience sampling was used to select the research site. Data was generated via questionnaires, observations, and interviews. The Unified Theory of Acceptance and Use of Technology (UTAUT) framed this study at a theoretical level. Age, lecturers' level of experience, and openness to learning were the three constructs used to build the conceptual framework in the UTAUT model.

The main findings revealed that accounting lecturers had access to a variety of technological tools, but they preferred to use the laptop and internet. The use of technologies impacted accounting lecturers' pedagogy in terms of instructional design, teaching, and personal growth. Technology has changed how they use their in-depth subject knowledge to design stimulating lessons and tasks that have inspired student centred learning. Since they needed to improve their familiarity with technology, their knowledge of it and content, as well as their understanding of best practices and online teaching pedagogy, lecturers created their own learning communities. The factors that constrain accounting lecturers' use of technology in the classroom was determined to be a lack of training for online teaching.

**Key words:** use of technology, purposive sampling, accounting lecturer's pedagogy, learning communities, online learning.

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## **LIST OF ABBREVIATIONS**

AEC:	Accounting Education Commission
BI	Behavioural Intention
CD ROM:	Compact DISC READ-ONLY MEMORY
COVID19:	Coronavirus Disease
DHET:	Department of Higher Education and Training
DoE:	Department of Education
EE:	Effort Expectancy
ELS:	Electronic Learning System
ICT:	Information and Communications Technology
ISAT:	Integrated Summative Assessment Task
IT:	Information Technology
LMS:	Learning Management System
NCV:	National Certificate Vocational
PE:	Performance Expectancy
SI:	Social Influence
TAM:	Technology Acceptance Model
TRA:	Theory of Reasoning Action
TVET:	Technical and Vocational Education and Training
USB:	Universal Serial Bus
UTAUT:	Unified Theory of Acceptance and Use of Technology
WESTCOL:	Western Technical Vocational Education and Training College
WI-FI:	Wireless Fidelity
WLAN:	Wireless Local Area Network
WWW:	World Wide Web
4IR:	Fourth Industrial Revolution

# CHAPTER 1

## INTRODUCTION

### 1.1. Introduction

The COVID-19 pandemic impacted all sectors of society, including education. Conditions of lockdown were introduced globally to contain the spread of the virus. Consequently, all social activities came to an abrupt halt. A measure adopted globally to prevent the spread of the virus and minimise infections involved the complete closure of the education sector from pre-school to higher education institutions and educational facilities (Pather et al., 2020). Simultaneously, all in-campus activities had been cancelled or postponed or re-imagined to comply with the required 1.5 m social distancing and all Covid protocols (Sahu, 2020). To save the academic year, all education institutions (schools, universities, TVET colleges) transitioned from face-to-face teaching and learning to online teaching and learning. Most universities are well equipped for online learning through investing in learning management systems (LMSs) such as Microsoft Teams and Blackboard Lim (2020). These LMSs enable the instructors to interact with their students virtually through live or recorded lectures, chatting, online exams and quizzes and assignments. This means that the pandemic has changed the way lecturers are expected to embrace technologies in their teaching, particularly in subjects like accountancy (Skhephe, Mantlana et al., 2021).

Skhepe et al. (2020) assert that using technologies such as telematics, blended learning, live broadcasts, smart phones and broadband connectivity to the internet and social media, has brought about substantial changes to learning, apart from providing equal opportunities to all learners. These scholars further state that through the adoption of innovative technologies, learning has moved away from being a one-man activity and become collaborative in nature and more learner centred. However, as certain technologies become more accessible and user friendly, learners look forward to experiencing them and seeing for themselves what these platforms entail Mpungose (2020). Furthermore, when teachers are positive about using technology in the classroom, the process of transforming teaching and learning takes place in educational settings. Some lecturers and students might face challenges in coping with the new way of online teaching and the use of technologies as they are dependent on the traditional methods of teaching and learning such as chalk and talk, journal entries and balancing books, and practical work (Alshurafat et al., 2020; Bidabadi et al., 2016). There are many studies which focused on the challenges and factors that hinder the adoption and use of online teaching

and learning systems under normal conditions (Al-Rahmi et al., 2019; Karsten et al., 2020). However, there is a paucity of research on teaching of subject that is dependent on traditional methods of chalk and talk and the transition to an online teaching and learning system. One such subject is accounting. This study thus seeks to explore the impact of the use of technologies on TVET accounting lecturer's pedagogy during online teaching and learning under COVID 19 conditions.

## **1.2. Rationale behind the Study**

There is much motivation for the use of technologies in the teaching of accounting Khemini, (2021). It is argued that teaching technologies can help accounting students gain the necessary knowledge and skills to empower them for lifelong learning and adaptability for 21st century skills (Rajeevan,2020).

Wen (2016) asserts that incorporating relevant computer software and technology into accounting classrooms creates a new type of learning environment that provides a different platform for teaching and learning. Traditional approaches are often blamed for producing accounting students who have good technical abilities but lack the necessary skills and expertise (Wen, 2016). Changes in the way accounting knowledge and skills are taught and developed for learners are necessitated by the demands of an ever-changing business environment. Accounting lecturers can be thought of as knowledge transfer agents and skill providers, and they should take advantage of technologies that can improve their classroom practice and assist their students (Khemini, 2021). Considering these points, it is thus essential to explore the use of technologies in accounting classrooms, more so during online teaching under pandemic conditions.

I am employed at a TVET college, that has five campuses. COVID 19 conditions of lockdown necessitated the transitioned from face-to-face lectures to online teaching and learning. The campus where I work offers courses that focus on business studies and accounting. As I am aware of the current discourse about the need for accounting lecturer to incorporate the use of technologies in their teaching, I decided to explore the impact of the use of technologies on accounting lecturers' pedagogy.

## **1.3. Purpose of the Study**

The purpose of the study was to explore the impact of the use of technologies on TVET Accounting lecturers' pedagogy and the factor that enable or constrain the TVET accounting lecturers use of technologies in their classroom during COVID-19.

#### **1.4. Objectives of the Study**

The objectives of this study are:

- I. to ascertain what technologies are used by TVET accounting lecturers during online teaching and learning under COVID-19 conditions;
- II. to establish how the use of technologies impact TVET accounting lecturers' pedagogy; and
- III. to determine the factors that enable or constrain the TVET lecturers' use of technologies in their classroom.

#### **1.5. Research Question**

The following three research questions guide this study:

1. What technologies are used by TVET accounting lecturers during online teaching and learning under COVID-19 conditions?
2. How does the use of technologies influence TVET accounting lecturers' pedagogy?
3. What factors enable or constrain the TVET lecturers' use of technologies in their classroom?

#### **1.6. Significance of the Study**

The findings of the study provide insights into the impact of the use technologies on accounting lecturers' pedagogy during the transition to online teaching under Covid conditions. Further, the findings are expected to assist TVET colleges to plan the implementation of the effective online teaching and learning in their accounting classrooms, and provide continuous professional development support to TVET accounting lecturers.

#### **1.7. Clarification of Key Terms**

In this section, the terms used in this study are clarified to help the reader.

##### 1.7.1. E-readiness classrooms

Classrooms that are specifically designed for delivering and supporting electronic learning systems (Çaliskan & Caner, 2022).

##### 1.7.2. E-learning

A term that refers to flexible learning using ICT resources, tools, and applications, with a focus on interaction between teachers and students, the online environment, and

collaborative learning. It can also refer to structured and managed online learning experiences that use the Internet, CD-ROMs, software, and other forms of media and telecommunications (DoE, 2003). Instructions delivered via all electronic media, including the Internet, intranets, extranets, satellite broadcasts, audio/video tapes, interactive television, and CD-ROMS, are referred to as e-learning (Nguwap & Mamman 2022).

#### 1.7.3. Software

This refers to computer programmes that provide instructions that enable tasks to be performed by the computer (Hindle et al., 2016).

#### 1.7.4. Hardware

This refers to computers, monitors, printers, scanners, cameras, and other electronic machines (Sze.et al., 2017).

#### 1.7.5. Internet

This is the global communications network which enables computers to share information in an electronic form (Serpanos & Wolf, 2017).

#### 1.7.6. Pedagogical readiness

This refers to facilitators' impressions of electronic learning systems and assesses whether they are willing to adopt new technology to complete various related activities (Wang et al., 2017).

### **1.8. Overview of Chapters**

The following is a synopsis of all the chapters:

**Chapter 1** is the introduction that provides an overview of the study's background. It describes the study's focus, purpose, and objectives, as well as the key research questions that guided the research, the study's rationale, and its significance. The first chapter also includes a glossary of terms used in the study, as well as an overview of all the chapters.

**Chapter 2** focuses on the literature review and the theoretical framework used in the study. Several related studies were cited, as well as the opinions of academics on the use of

technologies in accounting education; online teaching self-efficacy of lecturers; online learning and its impact on of accounting students; employing accounting software in the teaching and learning of accounting; technologies and e-readiness of the accounting classroom; and technical and lifestyle and pedagogical readiness. Finally, the chapter concludes with an explanation of the theoretical framework that was used to analyse the data and frame this research.

**Chapter 3** This chapter highlights the research methodology embraced in this study. It explains why a qualitative case study was chosen as the research design, as well as the research paradigm, data generation methods, sampling methods, data analysis, reporting and presentation of findings, and ethical issues.

**Chapter 4** focuses on data analysis and presentation of research findings to derive answers to the main and sub-research questions.

**Chapter 5** discusses the findings, makes recommendations, and draws a conclusion.

### **1.9. Chapter Summary**

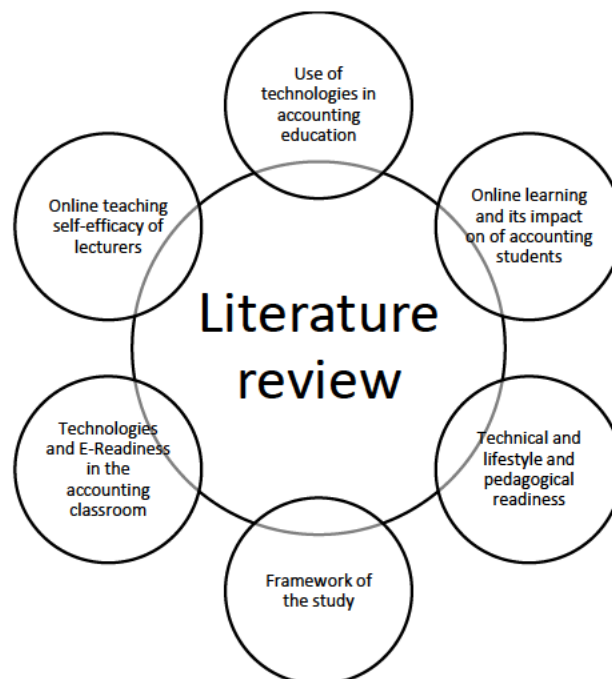
The study was summarised in this chapter. According to Ngwenya et al. (2020), continuous changes and improvements in the subject area are required for accounting classrooms to remain relevant. This means that teaching and learning processes must keep pace with technological advancements adopted by professional accountants. The proper use of technology in accounting classrooms can catalyse change in terms of both content and pedagogy, and usher in reforms. In response, this research explores the impact of the use of technologies on accounting lecturers' pedagogy during online teaching. There are three research questions that need to be answered. The terms used in the study were clarified here, and its outline provided. The next chapter contains a literature review, in which relevant scholarly materials on the impact of online teaching technologies on accounting lecturers' pedagogy will be critically examined.

## CHAPTER 2

### LITERATURE REVIEW AND FRAMEWORK OF THE STUDY

#### 2.1. Introduction

The previous chapter gave an introductory background to the study. This chapter presents a review of related literature relevant to the study. A review of a body of literature is important as it creates an understanding of the topic under exploration to know what has already been researched and understands what key issues need to be addressed. A review of literature is organised into six sections as depicted in Figure 2.1 below.



**Figure 2.1: Literature review organised by subheadings**

In the 21st century, technologies have made more information available than any single person could ever hope to obtain. In accounting classrooms, e-learning has been identified as an important feature and an innovative way of providing quality education through web-based communication, collaboration, multimedia, knowledge transfer and training to support active learning unhindered by time and space barriers (Tadeu et al., 2019). Accounting teachers are expected to deliver their lessons in their respective classrooms in a new way because of the digital revolution (Skhephe, Mantlana et al., 2020).

According to Pereira et al. (2020), due to the influence of technology on the discipline, teaching methods in accounting have changed fast over a relatively short period of time. According to Pereira (2020), before the mid-20th century, the only materials accessible for accounting

training were textbooks, chalk, and conversation. However, with the incorporation of technology into the subject, the means of obtaining cutting-edge information on the subject have improved, and teachers and students are now able to go beyond the limit and receive all the information they require using e-learning tools.

The purpose of the literature review is to find the major lessons from previous research that are relevant to this study and apply them to a more in-depth look at specific study concerns (Crompton & Burke, 2018). This chapter begins with the explanation about use of technologies in accounting education with an emphasis on TVET colleges. It further explores the use of technologies on accounting lecturers' pedagogy during online teaching, and the theoretical framework that underpins the research.

## **2.2. Use of Technologies in Accounting Education**

The practice of using technology in education, also known as technology-enhanced learning or e-learning, referred to as digital education, is well documented. The Accounting Education Commission (AEC) has long advocated for rehabilitating accounting education to make it more relevant to practise and generate higher-quality accountants (Makarenko & Plastun, 2017). Incorporating technology into accounting education is one of these reforms. The use of cutting-edge technology in accounting education has become one of the most critical concerns for the profession's advancement. Accounting education has been slow to adapt to the fast-changing educational and global environment in the past. The spread of COVID-19 has acted as a catalyst for reimagining and redesigning creative learning, teaching, and evaluation techniques that embrace a deeper understanding of accounting (Tharapos, 2021). This method of education is gaining popularity in higher education institutions all over the world (Alqahtani & Rajkhan, 2020). According to Cunha et al. (2022), accounting educators are increasingly using these systems because of the accelerated evolution in the accounting context, therefore better teaching methods are required to offer accounting concepts. As a result, there has been a surge in interest in the use of technologies and online teaching and learning in accounting.

Most universities throughout the world are currently investing in learner management systems (LMSs). The integration of the internet with accounting education is viewed as a beneficial technique for teachers to electronically assess pupils and provide e-feedback, which has resulted in explosive growth of e-learning in general and accounting education (Mihret et al., 2017); Helfaya, 2019). Furthermore, educators can acquire critical and timely feedback from students on the effectiveness of the teaching and learning methods used to convey the

curriculum when they employ technology in the classroom (Mihret et al. 2017). It was found that students enjoyed adopting e-assessment and feedback strategies in accounting classes; also, e-flexibility learning in terms of time and place for both students and teachers has resulted in its rapid adoption (Helfaya, 2019).

The fundamental critique of this kind of learning was the lack of personal interaction between learners and teachers (Zalat, Hamid & Bolboi, 2021). While digitising accounting education might provide more freedom, educators might be concerned about students' learning and knowledge (Humphrey & Beard, 2014). Also, because of the abrupt transition to e-learning, the lack of an effective learning process might have unintended repercussions that could impair the student's future career prospects (Aguguom et al., 2020).

### **2.3. Online Teaching Self-Efficacy of Lecturers**

One of the most essential aspects influencing an instructor's performance in the educational process is teaching self-efficacy, which predicts the instructor's ability to confront probable problems in the online teaching environment (Ali & Jones, 2017). Instructors' self-efficacy in the virtual learning environment is critical to completing the duties allocated to them successfully. According to Zheng et al. (2018), the availability of organisational support, such as adequate training and technical support, is the most critical component that boosts faculty self-efficacy of the learner management system (LMS). Several studies were conducted prior to COVID-19 to explore the challenges faculty members face in online teaching, and it was discovered that technological concerns such as technology reliability, availability of technical support, technology competence of instructors and students, huge workload, and lack of human interaction were the most important challenges raised by faculty members. The effective use of technology, particularly in the educational process, is largely dependent on the users' acceptance and perception of these tools. Teachers with more Web expertise had higher self-efficacy, according to the researchers. Even though most TVET colleges in South Africa have a learner management system (LMS), faculty members are not well prepared to offer their courses online due to the abrupt shift from traditional to virtual teaching. As a result, the rapid transfer of education to online learning may pose a threat to educational quality due to a lack of teaching self-efficacy among teachers (Ali & Jones, 2017).

### **2.4. Online Learning and its Impact on Accounting Students**

The impact on students' performance is one of the negative consequences of the pandemic's fast spread to online learning. In terms of its impact on student achievement, the effectiveness

of e-learning was one of the primary topics covered by various studies (Somayeh et al., 2016). They showed mixed results; some found positive impact on the students' performance while others found no impact, although no studies found it had a negative impact. Sunarya et al. (2017) conducted a study to investigate the main factors that affect students' performance in web-based accounting courses in a university in Jordan. The researchers used mixed research methods (interviews and questionnaire) and the results showed that the environmental factors, including the instructors' interactivity, the efficient use of technology and the learning environment, have significant and major impact on the students' performance, measured by the student's final grade.

In other studies, students' performance in e-learning and traditional learning was compared, and the results revealed no significant difference between the students' performance in both modes of learning (Borba et al., 2016). To establish whether pupils are learning or not, it is critical to have an effective and efficient assessment system. Summative and formative assessments are the two most common forms of assessments. In the summative evaluation, students are evaluated to see how far they have progressed toward their learning objectives. Formative assessment, on the other hand, is a constant review process by the teacher to understand the needs of the students. Since all educational institutions are currently closed, it is more vital than ever to employ more formative assessments to gain a better understanding of students' learning (Luna Bazaldua et al., 2020).

## **2.5. Technologies and E-Readiness in the Accounting Classroom**

A classroom developed specifically for the delivery and support of electronic learning systems (ELs) is referred to as an e-readiness classroom (Çaliskan & Caner, 2022). Where such classrooms exist, according to Rapanta et al. (2020), the teacher's task is to advise learners to work independently while guiding them throughout, which is where technology, often in the form of an internet connection, is used to enhance instruction. Accounting classes have evolved to meet business needs, better prepare students for the labour market, and enable them to thrive in a changing environment (Akbulaev et al., 2021). The most recent accounting cohorts are more familiar with a variety of technologies; besides, they were taught to use mobile phones, tablets, and personal technology from an early age. Accounting teachers must use this valency to instrument incremental variations aimed at developing certain inherent strengths in learners, such as teamwork skills and enthusiasm, because these competencies will enable them to make a difference in their organisations in future, to communicate effectively with supervisors, and to be at ease with technology (Lafond et al., 2016).

The current organisational climate requires professionals to develop innovative skills, which schools, if they have foresight, will have already prepared their students to master. Related skills must include the ability to search a wide range of databases e. g., the internet, and to work with a wide range of data solutions (Lafond et al., 2016). Accounting students are not properly prepared to use data sources or technology domains, according to Lawson (2018). and they do not become competent at problem solving. As the world intends to satisfy the demands of 4IR, Wen (2016) asserts that teaching accountancy without the use of detailed software will become increasingly difficult.

## **2.6. Employing Accounting Software in the Teaching and Learning of Accounting**

According to Nori et al. (2016), employing relevant computer software and technology in accounting classes creates a new sort of learning environment that provides a different platform for teaching and learning. Traditional approaches are sometimes accused of generating accounting students who have high technical abilities but lack the necessary skills and competence, as Nori et al. (2016) point out. Changes in the way accounting information and abilities are taught and developed for learners were necessitated by the demands of an ever-changing business world. Accounting lecturers can be thought of as knowledge transfer agents and skill suppliers, and they should take advantage of any equipment, platforms, or assistance that might improve their classroom practice and assist their students.

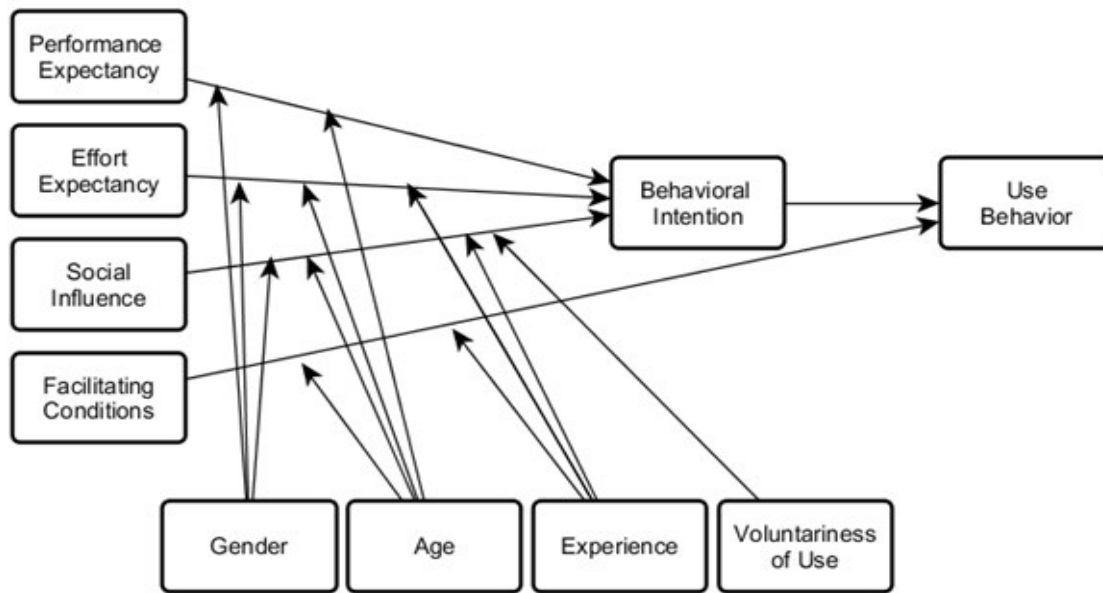
## **2.7. Technical and Lifestyle and Pedagogical Readiness**

The e-readiness of an accounting classroom is evaluated on three levels, according to Gay (2016), namely, technological, lifestyle, and pedagogical. The focus of technical readiness is on the readiness of technology hardware, software, and an internet connection, as all these aspects support e-learning. The facilitator and related challenges that may affect his/her satisfaction with an e-learning community, such as his/her inability to adapt to change, are the focus of lifestyle readiness. The facilitator's understanding of technology, as well as his or her experience, confidence, and attitude, are all factors in pedagogical readiness. According to Wang et al. (2017), pedagogical readiness refers to facilitators' perceptions of electronic learning systems and assesses whether they are willing to embrace new technology to complete various related tasks. In terms of pedagogical readiness, Jabeen and Ghani (2015) believe that determining whether a facilitator prefers a chalk-and-talk approach to the best use of technology is critical.

## **2.8. Theoretical Framework**

### ***2.8.1. Unified Theory of Acceptance and Use of Technology (UTAUT)***

This study is framed by Venkatesh et al.'s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT), which focuses on the impact of the use of technologies on accounting lecturers' pedagogy. The theory focuses on the acceptance and use of technology and highlights the factors that impacted accounting lecturers' pedagogy during the transition to online teaching. UTAUT embraces four key factors (i. e., performance expectancy, effort expectancy, social influence, and facilitating conditions) and four moderators (i. e., age, gender, experience, and voluntariness) to predict behavioural intention to use a technology, actual or potential, primarily in organisational contexts. UTAUT, therefore, is suited for this study. According to UTAUT, performance expectancy, effort expectancy, and social influence were theorised and found to influence behavioural intention to use a technology, while behavioural intention and facilitating conditions determine technology use. Moreover, various combinations of the four moderators were theorised and found to moderate various UTAUT relationships. The Technology Acceptance Model (TAM) was developed by Davis (1989), and UTAUT is based on it. People's motivation to utilise information technology, according to Davis (1989), is influenced by perceived usefulness, perceived ease of use, and attitude toward use. According to TAM, Venkatesh et al. (2003) established UTAUT, which explains how performance expectancy, effort expectancy, social impact, and enabling conditions influence information technology on use behaviour. Three of the independent variables (PE, EE, and SI) are influenced by behavioural intention intervening variables, whereas enabling conditions will have a direct impact on use behaviour. Venkatesh et al. (2003) included moderating variables to the research scheme; interestingly, the moderating variables are nominal data such as gender, age, experience, and willingness to utilise. This nominal data is used by these researchers to understand the characteristics of distinct user groups.



Source: Venkatesh et al. (2003).

**Figure 2.2: Theoretical Framework**

Effort expectancy has been introduced in the UTAUT model and is a crucial predictor of technology acceptance. According to Venkatesh et al. (2003), Effort Expectancy (EE) is the degree of ease associated with the use of the system. In the context of the present study, EE represents TVET accounting lecturers' beliefs regarding the ease of use of ICT. Performance Expectancy (PE) is the degree to which an individual believes that the system helps to improve job performance. In the context of the present study PE denotes TVET accounting lecturers' beliefs regarding whether use of technology would enhance their teaching and their learner's learning performance. Behavioural Intension (BI) is the degree to which a person has formulated conscious plans regarding whether to perform a specified future behaviour. Venkatesh et al. (2003) revealed that PE is the strongest determinant of a user's BI to adopt a technology. According to various studies, (Venkatesh et al., 2003; Šumak & Šorgo, 2016; Hoque & Sorwar, 2017; Khalilzadeh et al., 2017; Šumak et al, 2017) PE and EE are direct determinants of behavioural intension (BI).

### **2.8.2. Use Behaviour**

In this sense, "use behaviour" refers to a person's habit or routine when it comes to using information technology. The habit of utilising information technology is determined by behavioural intention and facilitating condition, according to Kumar and Bervell (2019). In this study, it refers to auditors' utilisation of information technology because they have the intention and interest to do so, as well as the equipment and facilities to support that intention.

### ***2.8.3. Behavioural Intention***

Fishbein and Ajzen (1977) were the first to coin the term "behavioural intention". According to them, behavioural intention is the evolution of Theory of Reason Action (TRA). The term "behavioural intention" refers to a hypothesis used to describe the motivating variables that influence a behaviour. This assumption can also be quantified in terms of how much work or sacrifice a person is willing to make when performing a task. Furthermore, an individual's feeling regarding the purpose to do something, whether positive or negative, is considered behavioural intention. According to Fishbein and Ajzen (1977), attitude and normative belief determine behavioural intention. In the final stages of this theory's development. Davis et al (1989) interpret normative belief as perceived, which is represented in their study by varying perceived usefulness and ease of use. Meanwhile, Venkatesh et al. (2003) define normative belief as expectancy, which is represented in their research by performance and effort expectancy.

### ***2.8.4. Performance Expectancy***

The extent to which an individual believes that employing a system would help him improve his job performance is referred to as performance expectancy (Venkatesh et al., 2003). The usefulness of perceptions refers to how much a person believes that employing a specific system would increase his work performance. The relative advantage refers to how a system's capabilities increase individual work performance. The outcomes of the results are a relationship between the consequences of behaviour. Ghalandari (2012) divides them into two categories based on empirical evidence: performance expectations and personal expectations. This construct modulates behaviour intention, according to Venkatesh et al. (2003). Usability, perception, relative profit, and outcome expectations are all indicators of changeable performance expectancy.

### ***2.8.5. Effort Expectancy***

The level of easiness associated with system usage is characterised as effort expectancy (Venkatesh et al., 2003). Venkatesh et al. (2003) discovered that behavioural intention was influenced by effort expectancy. Perception of ease of use and ease of use are indicators for variable effort expectancy. The degree to which one believes that using a system will be free of difficult attempts is referred to as perceived ease of use. The ease of use of an innovation refers to how simple it is to utilise.

### ***2.8.6. Influence of Lecturers***

Lecturer influence is a variable that originates from social influence. Social influence was split into peer influence and superiority influence by Venkatesh et al. (2003). According to Wang et al. (2017), lecturers or faculty members have a greater influence than students because they have a higher education degree and knowledge. Subjective norm and social factors are markers of instructor effect on variables. The subjective norm is a basic perception that most people who matter to the student who believes he or she should or should not do something. Social elements include a person's integration of the reference group's subjective culture and the interpersonal agreements that a person makes with others in particular social contexts (Wilson et al., 2016).

### ***2.8.7. Quality of Service***

The term "quality of service" refers to a network's capacity to deliver various levels of service assurance. In e-learning, the role of quality of service is to improve performance for time-sensitive applications like voice and video (Amasha et al., 2020). It prioritises key network applications, making the most of existing network expenditures. Variable indicator, best-effort service, integrated service, and differentiated service are all examples of service quality. The best-effort service is employed when every effort is made to send data to its intended destination. Through the negotiation of end-to-end network parameters, the integrated service model delivers service-level applications. Starting from the outset of the transmission of those applications, applications demand the level of service necessary to operate and will rely on quality-of-service methods to deliver network resources. Reviewing teaching and learning policies, pedagogical practices, and community engagement are all part of the expansion, all of which contribute to the overall quality of education (Laurie et al., 2016).

### ***2.8.8. Personal Innovativeness***

Personal innovativeness refers to a person's openness to experiment with new information technologies. Individuals who are more willing to try technology can act as change agents and opinion leaders for new technology installations in organisations if they can be identified. Personal innovativeness is defined as the degree to which an individual adopts a new technology earlier than other participants from his or her social system (Iftakhar, 2016). Personal innovativeness is divided into three stages, namely vicarious, adoptive, and use innovativeness. Al-Mansoori and Koç (2019) conducted research on human innovation and created a variable that included two indicators: intrinsic and real innovation.

### ***2.8.9. Facilitating Condition***

Facilitating conditions are objective external factors, which, analysts agree, make an action easier to accomplish, such as providing computer support (Amasha et al., 2020). Facilitating conditions are also described as a person's belief that the system's current organisational and technological infrastructure promotes its utilisation (Venkatesh et al., 2003). According to Venkatesh et al. (2003), enabling settings have little effect on behavioural intention but have an impact on use behaviour. As a result of this conclusion, the UTAUT model was created solely to investigate the effect of enabling conditions on use behaviour. The notion of facilitating conditions indicators is based on perceived behaviour control (Amasha et al., 2020).

## **2.9. Chapter Summary**

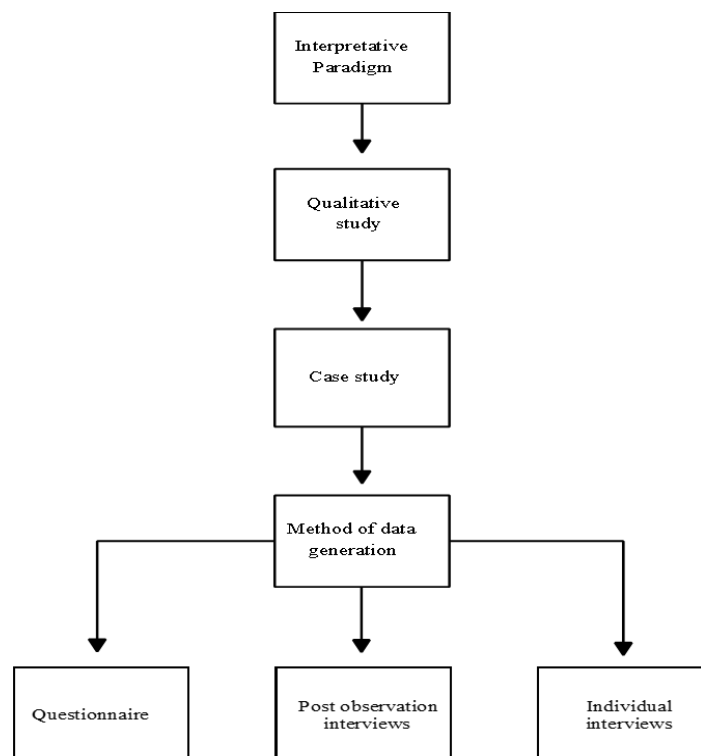
This chapter highlighted the sentiments of academics on the use of technologies in accounting education; online teaching self-efficacy of lecturers; online learning and its impact on of accounting students; employing accounting software in the teaching and learning of accounting, technologies and e-readiness of accounting classroom; and technical and lifestyle and pedagogical readiness. It concludes with an explanation of the theoretical framework that is used to analyse the data and frame this research. The next chapter discusses the research methodology used in the study.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1. Introduction

As mentioned previously the purpose of this study seeks to explore the impact of the use of technologies on accounting lecturers' pedagogy during online teaching. This chapter sets out to highlight the research methodology embraced in this study. According to Flick (2020), research methodology unveils the different stages of a study from data generation to analysis. The chapter considers the following aspects of methodology: structure of the study; paradigm approach; research design; location of the study; sampling; data generation techniques; research rigour; ethical considerations; limitations of the study and ends with a summary of the chapter.



**Figure 3.1: A diagrammatic illustration of the study's research methodology and approach**

### **3.2. Research Paradigm**

Cohen, Manion and Morrison (2017) asserted that a research paradigm defines and influences the research process and outcomes in several ways, such as decisions to be made regarding the nature of the phenomenon explored, theoretical framing, literature, methods, or research design. Thus, a paradigm deals with a researcher's consideration of how to explore the problem identified so that the results are credible (Creswell & Creswell, 2017). A paradigm deals with one's perception or understanding of reality (Huitt, 2018). Based on the focus of the study, which aims to explore the impact of the use of technologies on accounting lecturers' pedagogy during online teaching, it embraced the interpretive paradigm. The main concern of the interpretive paradigm is to understand the subjective world of human experience from the perspective of the participants to derive meaning from shared experience (Creswell & Creswell, 2017). To gain deep insights from the perspectives of participants, data collated should be non-numeric in nature. The interpretative paradigm's ontological assumptions required me to explore the existence of numerous realities. Since this study sought to explore the impact of the use of technologies on accounting lecturers' pedagogy from the perspective of the accounting lecturers, the interpretative paradigm is best suited to guide this study.

### **3.3. Qualitative Research Approach**

In my choice of research approach, I was guided by the ontological position of the interpretive paradigm in order to explore the impact of the use of technologies on TVET accounting lecturers' pedagogy during online teaching under COVID-19 conditions. Ontology is the idea about how we interpret our physical world and ourselves as human beings (Yom, 2015). The qualitative approach embraced the notion of multiple social realities which aligns with the interpretive paradigm. Qualitative research offers suitable approaches when seeking to know or interpret in-depth understanding of a real-life phenomenon, such as human subjective experiences, contexts or conditions of living, social behaviours, understanding or conceptions, views, and perspectives on social issues (Flick., 2018).

### **3.4. Case Study Research Design**

A research design includes specific details of how the research is conducted and how data are collected, what instruments are used and what means are used to analyse the data that were collected (Cohen et al., 2017). This study embraced a case study design. According to Yin (2018), case study research is a systematic in-depth study that explores a contemporary phenomenon within its real-life context using a variety of ways to generate data. This study sought to capture the reality of TVET accounting lecturers' lived experience of the impact of the use of technologies on their pedagogy, and the factors which enable or constrain their use of technologies in their accounting classrooms under COVID-19 conditions. Case studies can be divided into three types based on their outcomes, namely: exploratory, descriptive, and explanatory case studies (Yin, 2018). The exploratory case study serves as a suitable means of eliciting information to seek new insights and clarify one's understanding of a process or problem. This approach also serves as a pilot to other studies or research questions. This implies that the exploratory approach provides new and detailed information or insight about a problem or a process (phenomenon) through the research findings, which can perhaps inform policy or serve as the background for further research. The descriptive case study focuses on providing narrative accounts and the explanatory case study deals with hypothesis testing. In consideration of the above categories or types of case studies, the exploratory case study design was used in this study.

The choice of exploratory case study design is based on the purpose or intention of the study, which is to explore the impact of the use of technologies on accounting lecturers' pedagogy during online teaching under COVID-19 conditions. The design of a case study determines the sampling parameters as well as the data collection methods.

### **3.5. Sampling and Sampling Methods**

Sampling is a procedure of decision making regarding the selection of population, settings, events or behaviours to be used in a study (Bertram & Christiansen, 2014). Different sampling techniques exist in the field of research. The selection of the participants was guided by my research design and in this instance purposive sampling was a preferable technique.

Purposive sampling, according to Maniram and Maistry (2018), as well as Etikan, Musa, and Alkassim (2016), is a deliberate act of choosing a participant based on the attributes s/he possesses. It is not done randomly; the researcher finds the people who can give relevant information needed for the study based on their experiences or knowledge. In this case they

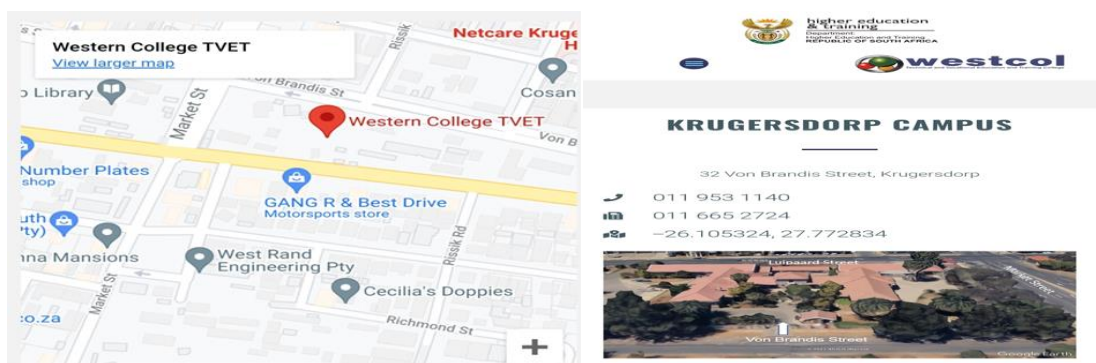
must be TVET accounting lecturers from the Western TVET College, Krugersdorp campus. The location of the study, namely, the Krugersdorp Central campus is conveniently selected as I am employed at the campus and will have easy access to the accounting lecturers. There are 12 accounting lecturers at the Krugersdorp Central campus and all 12 were invited to participate in this study.

### 3.6. Researcher Positionality

I declare that I am known to the accounting lecturers, and I have worked with them as part of their team for 14 years. To address issues of power relations, informed consent was sought from all participants were informed that participation is voluntary and they could withdraw from the study at any time without repercussions. All data and transcripts were taken to them for member checking.

### 3.7. Location of the Study

Western College (pseudonym) is one of 50 public TVET Colleges that forms part of the Department of Higher Education and Training. Western TVET College consists of five campuses: Carletonville, Krugersdorp, Krugersdorp West, Randfontein, and Westonaria. This study was conducted at Western TVET College, Krugersdorp Central campus. The courses offered at Krugersdorp campus are accounting and NCV (National Curriculum Vocational) programmes. The Accounting division consists of Financial Management N4 to N6 programmes and Finance, Economics and Accounting NCV L2 to L4 and there are 12 lecturers employed in this division.



<https://www.westcol.co.za/krugersdorp-campus/>

**Figure 3.2: Location of the Study**

### 3.8. Data Generation Plan

Lewis (2015) defined data generation as an exercise of gathering a set of interrelated information to answer the research questions posed. Thus the importance of data generation cannot be overemphasised as it is meant to contribute to a better comprehension of a theoretical framework (Bernard, 2017). It is therefore important that decisions on how and from whom the data will be obtained, and be reasonably and carefully done as no amount of analysis complements inaccurate collection of data (Etikan et al., 2016). This simply means that for the researcher to get the right information concerning a study, the right participants/data sources and instruments must be selected. The data generation plan is reflected in Table 3.1 below. Data was collated in three phases in response to the three research questions. All COVID-19 protocols were observed during data generation.

**Table 3.1: Data Generation Plan**

<b>Research question</b>	<b>Data source</b>	<b>Instrument</b>	<b>Analysis</b>
What technologies are used by TVET Accounting lecturers during online teaching and learning?	TVET accounting lecturer	Open ended questionnaire	Content analysis
How does the use of Technologies influence TVET accounting lecturers' pedagogy? (Learner engagement and assessment)	TVET accounting lecturer	Observation	Content analysis
What factor enable or constrain the TVET lecturer; use of technologies in their classroom?	TVET accounting lecturer	Interview Post Observation Interviews	Content analysis

### 3.9. Data Generation Methods

During phase 1 of data generation data was generated using an open-ended questionnaire.

### ***3.9.1. Open Ended Questionnaire***

In comparison to other research instruments, questionnaires provide several advantages. They are cost-effective regarding time and money (McMillan & Schumacher, 2014). Perhaps more crucially, unlike other procedures such as interviews or observations, questionnaires ask the same questions to a random sample of people. Finally, they give the participants enough time to consider their responses. There were two reasons for adopting the questionnaire as the first data collection tool. For example, it gave participants the option of answering the questions privately, with their responses written down in their own words. These qualities limit the chances of the researcher misinterpreting data.

As a result, an open-ended questionnaire was created to capture the impact of the use of technologies on accounting lecturers' pedagogy during online teaching. The questionnaire was developed with the help of a researcher. The questionnaire was piloted with accounting lecturers at another TVET campus to check if the wording were clear and unambiguous. Cohen et al. (2017) assert that the purpose of the pilot is to improve the questionnaire's reliability, validity, and usability. The questionnaire items exhibited good construct validity because of the piloting. To prevent uncertainty, two questions were changed.

The open-ended questions in this study's questionnaire were designed to answer all the research questions. The first portion of the questionnaire was designed to gather biographical information to map out the topography of accounting lecturers. The questionnaire's second portion is devoted to determining the impact of technological use during online teaching on accounting lecturers' pedagogy. Following that, the questionnaire included open-ended questions with participants filling in their own responses, which were utilised to investigate their technological conceptual understanding.

The questionnaire was personally presented to 12 accounting lecturers at Krugersdorp Central Campus's accounting division. Participants were assured of the anonymity of their answers, and they were also informed that there were no right or incorrect answers and that they should respond truthfully.

Before the questionnaire could be gathered from the participants, they were given one week to complete it. Participants were called after five days to encourage them to complete the questionnaire on time as a follow-up measure. The disseminated questionnaires took two weeks to recover, which was longer than expected. The twelve respondents who completed and returned the questionnaires were coded P1 up to P12 on the returned questionnaires.

## **Phase 2 of data generation, entailed observation of recorded accounting lessons.**

### ***3.9.2. Observation of Lessons***

Observations are a technique of noting and recording events, participant behavioural patterns, objects, and happenings without necessarily questioning or communicating with them (Cohen et al., 2017). It is also known as "the method by which researchers establish a relationship between reality and their theoretical assumptions" (Cohen et al., 2017 p203). In the study, I employed observation, a strategy described by McMillan and Schumacher (2014) as obtaining and corroborant salient observation of multiple perspectives recorded in field notes and summary observation.

In this study, I observed 12 accounting lessons in each of the lecturers' lessons.

Participants were informed that on my initial visit to the campus, I would be observing their online lesson to ascertain the technologies they used, the impact of the use of technologies on their pedagogy. I asked the lecturers for a copy of the timetable so that I could check how many periods and hours were allocated to accounting subject technology-integrated lessons each week. The lecturers involved were given a time and date for the lesson observation, i. e., the day and time when the teaching would take place. Appendix A contains a template that was used.

The goal of such observations is to dig deeply into and analyse in depth the various phenomena that make up the unit's life cycle and make broad generalisations about the larger population to which that unit belongs.

Observations were audio recorded.

## **Phase 3 of data generation entailed individual interviews (Post observation interviews)**

### ***3.9.3. Post Observation Interviews***

Following the classroom observation, post-observation interviews were conducted with the 12 purposively selected accounting lecturers. Interviews were conducted in-person, in some cases via video conference using Ms Teams, via email, or through other online communication. The purpose of the interview was to probe further, so gaining more insight into what had been observed during their lesson. During the interview, the accounting lecturers discussed and provided details on events from the observed lesson as well as other accounting lessons they had previously taught. Post-observation interviews provide more flexible opportunities to probe for greater depth than do a video recording or observation notes. Because the research

focus was not only to explore the impact of the use of technologies on accounting lecturers' pedagogy and the factors that enable or impinge their use of technologies but also to gain insights into their thinking and reasoning in the process of knowledge transformation, and their reflection on action (Kim & Silver, 2016). The post-observation interviews were thus used in the study to clarify, supplement and support what had been observed in the classroom and to provide further information that could not be captured by observation alone.

### **3.10. Method of Data Analysis**

Data analysis refers to the meaning-making from data sets (Merriam, 2015). Cohen et al. (2017, p.187) define data analysis as “reviewing each unit of analysis and categorising it according to the predefined categories”. In preparation for data analysis, all audio recordings of interviews, observation of lessons, were transcribed verbatim.

I engaged in qualitative data analysis. Qualitative data analysis is not a linear process; it is iterative, recursive, and progressive. In my study, as I analysed data from the interviews with accounting lecturers, I noticed new trends and patterns that appeared in the observations and interviews making the process iterative and progressive. When I had analysed the questionnaires, I reverted to what participants had said in the interviews and what I observed, and I was able to find a convergence between the three. In this way, my analysis was recursive.

The data generated in this study was subjected to content analysis. Content analysis involves the organisation of the data into categories. In my study, coding was used to categorise the data that was generated. Coding is the process of identifying themes or concepts that are in the data. The constructs of my theoretical framework, viz. were used to code the data.

I used open, axial, and selective coding during content analysis defined below:

- Open coding: the process of breaking down, examining, comparing, conceptualising and characterising data.
- Axial coding: a set of procedures whereby data are put back together in new ways after open coding, by making connections between categories, utilising a code paradigm involving conditions, context, action or interactional strategies and consequences.
- Selective coding: the process of selecting the core category, and systematically relating it to other categories, validating those relationships and filling in categories that need further refinement and development.

These three types of coding were used in my study to look at the dynamic transactional relationship amongst accounting lecturers use of technologies and its impact on their pedagogy. To map the transactional interplay amongst the data analysis I traced trends and patterns that appeared in the interviews, observations and questionnaire and noted them. I observed consistencies and codes that emerged inductively from the data. I searched for those codes that have “internal convergence and external divergence”, thus each code was consistent but distinct from one another. I engaged in rigorous, repetitive reading and coding of transcripts to develop key themes. Transcripts were read “horizontally, which involves grouping segments of text by theme” (Flick, 2018, p 98). Thus, major themes would be condensed into sub-themes so that they would be convenient to analyse. The data would be engaged with critically, and links within the data would be established.

### **3.11. Ethics and Gaining Access**

The success of any empirical research lies with the researcher’s ability to establish a good rapport with their informants (Bergman Blix, 2015). According to Butz and Branchaw (2020), entering the field means gaining access to the research site. The ethical concerns that were considered in carrying out this study are discussed forthwith.

Ethics refers to the system of moral principles by which individuals can judge their actions as right or wrong, good, or bad (Yip et al., 2016). The authors maintain that acceptability of social research depends on the researcher’s willingness to accord participants respect and treat them with consideration. Seeking to pursue professional integrity and based on this argument, I obtained consent from those directly involved in this research to respect their autonomy. Participants were fully informed about the purpose of the study and clarification given to make them aware of what their participation entails before they committed themselves as participants (Singh et al., 2021). Their participation is voluntary and if they decided to withdraw from the study at any time, it would be without any prejudice. The ethical principle of non-maleficence (no harm to participants) as expounded by John and Wu (2022) was considered. In this respect, I guaranteed confidentiality of information provided by all participants and declared that their contributions to the study would remain anonymous to protect and safeguard their rights, interests, and identity. I also sought ethical clearance for this study from the University of KwaZulu-Natal research department.

### **3.12. Research Rigour**

Every research study is subject to an open critique and evaluation. Without this, the soundness of its methods, accuracy of findings, the quality of assumptions made and conclusions reached are questionable and could reduce the value of the study (Cohen et al., 2017). Results of data collected and analysed in my study were exposed to criticisms from other researchers in the field of study, as explained later in next section. Nevertheless, I indicate below how this research has been designed to avoid or minimise challenges to its validity.

### ***3.12.1. Validity***

Validity is a term used in qualitative research which indicates whether the researcher is carrying out the research as proposed. It is achieved through a consistent check on the research instrument for objectivity, and the data for consistency. Ensuring objectivity is not an abstract activity; rather, it should dictate all efforts undertaken to ensure that the research evidence backs up the research claims (Flick, 2018). Because qualitative data does not allow for statistical testing in qualitative research, significant attention is given to internal validity. In this regard, Yin (2018) recommends that different responses from participants in the group be checked for consensus. In other words, triangulation is needed, as explained in section 3.12.5.

More so, to achieve internal validity, methods such as pattern matching, explanation building, logic models, or addressing conflicting descriptions were used. As stated by Mathieu et al. (2020, p 7), “construct validity can be achieved using several sources of evidence, sustaining an arrangement of proof, and having a key informant review the draft of the case study report, or through member checking”. Consequently, construct validity necessitated having several sources of evidence; and all audio recorded interviews were kept safely and reviewed during analysis to avoid uncertainty. Furthermore, during the post-observation interviews, I asked participants for clarity where there were divergent views in order to ascertain a consensus response, which helped to achieve internal or construct validity.

Furthermore, many researchers in qualitative research submit that to evaluate and ascertain the quality of a qualitative research work, terms such as trustworthiness, relevant, confirmable, credible, dependability, transferability or plausible are used (Cohen et al., 2017). Accordingly, to enhance the value of my research I adopted the notion of credibility as well as internal or construct validity.

### ***3.12.2 Credibility***

To ensure credibility of my study, data was collected to ensure detailed description of the settings, participants, and themes, as recommended by Creswell and Creswell (2017). These aspects are discussed next.

### ***3.12.3 Member checking***

Member checking is a research procedure used to ensure credibility and validity of the research. According to Birt et al. (2016), member checking involves taking the interview transcript back to the participants and asking them to verify the accuracy of the parts that they had contributed. Through this process, participants are given the opportunity to elaborate, clarify or confirm aspects of the interview to ensure that their views, experiences, and perceptions had been captured accurately during the interview. Thus, member checking was adopted to enhance the credibility of the research. To be specific, each participant checked their transcripts for accuracy.

### ***3.12.4 Reflexivity***

Reflexivity was also used to enhance the credibility of the data. I declare that my background and role as an ex-accounting lecturer at Krugersdorp Central campus holds the potential for shaping my interpretations. Furthermore, the results of the data collected and analysed, and the findings of this research will be open to critique by other academics and researchers in this field of study. This is to ensure the soundness, accuracy of the findings and conclusions reached (Jacobson & Mustafa, 2019).

### ***3.12.5. Triangulation***

Triangulation is an important means of ensuring validity. It is done to increase credibility and check dependability and is accomplished by using information from multiple sources to form themes (Creswell & Creswell, 2017), which should then contribute to a coherent 'picture'. To prevent bias and improve trustworthiness in this study, data were collected through a questionnaire, observation of lessons as well as post-observation interviews. These data were triangulated during analysis. As a result, if rigour is not ensured, a study is defective. The value of every research work, regardless of approach, is for readers to critically analyse it (Meyer & Dykes, 2019). As a result, the research report must be presented in such a way that readers or researchers can criticise it. Multiple data gathering methods, such as questionnaires and focus group interviews, were employed in this study to ensure research rigour. Issues of reliability and validity, according to Spiers et al. (2018), inform qualitative research rigour. Participants' reflection and member checking were used during the data generation stage and data transcribing procedures respectively, as additional measures in this study. In addition, the audio data collected during the interviews was transcribed verbatim to check that the responses of the

participants were accurate before creating themes. In section 3.13, I discuss participant reflection and member checking.

### **3.13. Chapter Summary**

The design and method for data collecting and analysis were outlined in this chapter. It detailed data collection tactics (which is the case study, questionnaire, observation, post observation interviews and interviews) and how they were used during the data collection process. There were other measures described to ensure trustworthiness. The study's data analysis and findings are presented in Chapter Four.

## CHAPTER 4

### DATA ANALYSIS AND PRESENTATION OF RESEARCH FINDINGS

#### 4.1. Introduction

The research methodology, sampling techniques, data collection methods, and data analysis were discussed in Chapter Three. The primary purpose of the study was to explore the use of technologies on accounting lecturers' pedagogy during online teaching. This chapter, therefore, will respond to the three research questions, *1. What technologies are used by TVET Accounting lecturers during online teaching and learning under COVID-19 conditions? 2. How does the use of technologies influence TVET accounting lecturers' pedagogy? 3. What factors enable or constrain the TVET lecturer, use of technologies in their classroom?*

As stated in the previous chapter, data was generated using the questionnaire, interviews, and observation. This chapter is organised in six sections. The first section focuses on respondents' biographical data obtained from the questionnaire. Section 4.3. pays attention to research question one. Research question two is answered in section 4. 4. Research question 3 is discussed in section 4.5. The chapter summary is then provided.

#### 4.2. Part A: Biographical Data

The table below displays the biographical data of the accounting lecturers. It reflects the participants' ages, years of lecturing experience, technology used and participants confidence level in using technology in the classroom.

**Table 4.1: Biographical Data of accounting lecturers in Krugersdorp Campus**

<b>PARTICIPANTS</b>	<b>AGE</b>	<b>YEARS LECTURING ACCOUNTING</b>	<b>TECHNOLOGY USED</b>	<b>CONFIDENCE LEVEL IN USING TECHNOLOGY</b>
1.	47	13	Laptop, Internet, data projector	Low Level
2.	55	16	Laptop, Internet, data projector	Low Level
3.	35	6	Laptop, Internet, data projector, Impero, Pastel, Computer labs, WI-FI email and WhatsApp and videos	High
4.	36	5	Laptop, Internet, data projector, Impero, Pastel, Computer labs, WI-FI	Average
5.	35	7	Laptop, Internet, data projector, Impero Software, Pastel, Computer labs, WI-FI email and WhatsApp	High
6.	42	8	Laptop, Internet, data projector, Computer labs, WI-FI	Average
7.	40	11	Laptop, Internet, data projector,	Average
8.	47	13	Laptop, Internet, data projector,	Low Level
9.	43	9	Laptop, Internet, data projector, Impero Software, Pastel, Computer labs, WI-FI	Average
10.	33	4	Laptop, Internet, data projector, Impero Software, Pastel, Computer labs, WI-FI, email and WhatsApp	High
11.	48	14	Laptop, Internet,	Low Level
12.	44	10	Laptop, Internet, data projector, Impero Software, Pastel, Computer labs, WI-FI,	Average

The above table illustrates the age difference amongst the participants, the years of experience lecturing accounting, technology used together with their self-assessments on the level of confidence in using technology. The accounting lecturers age range from 33 to 55 years. The number of years for lecturing accounting ranges from 3 to 16 years. The youngest lecturer has the least number of years of experience lecturing accounting while the oldest lecturer has the highest number of years of experience lecturing accounting. Information on the types of technology used during lectures reveals that lecturers with 10 years and less than 10 years of lecturing experience use more technologies in their lectures compared to lecturers with more than 10 years of lecturing experience. It can be deduced that accounting lecturers with 10 years or less teaching experience keep abreast with the latest technology available to them and use it in their teaching as compared to lecturers who are older and lecturing for longer than 10 years.

The details on accounting lecturers' confidence in the use of technology shows that four (4) out of 12 (33%) of the participants felt they had a low level of competence in using technologies in their teaching. Five out of 12 (42%) accounting lecturers reported they had an average level of confidence in using technologies in their teaching. Three out of 12 (25%) said they had a high level of confidence in using technologies in their teaching. It can be deduced that lecturers perceived usefulness of technologies in their teaching together with their confidence in using them influences their use in their teaching. These findings are like that of Sánchez-Mena, Martí-Parreño and Aldás-Manzano (2017), which indicate that teachers' confidence in using technologies and their perceived usefulness of technologies influences their use of technology in their teaching.

A closer look at Table 4.1. highlights that as the age of the participant increased, their level of confidence in using the technology decreased. Most participants (42%) who could use technology with ease in their teaching were between the age of 36 and 43 years old; while the participants (25%) who were very confident in their use of technology were between the age of 33 to 35 years old. The findings reflected in Table 4.1. resonate with the study of Keržič, Danko, Zorko, and Dečman (2021) on the effect of age on higher education teachers' use of technologies. These scholars' findings emphasise that age-related differences appear in teachers' personal use of technologies in their teaching.

### **4.3. Research Question 1:**

*What technologies are used by TVET accounting lecturers during online teaching and learning under COVID-19 conditions?*

To respond to the first research question, data was collated using questionnaire, observation, and interviews. The testimonies below bring to the fore the technologies used by accounting lecturers.

*Use a laptop, Moodle, internet, data projects, videos - Questionnaire P3.*

*Laptop, 3g, computer labs fitted with pastel and Impero software and Wi-Fi connectivity is available for me to use and [for] learning during teaching. I use Moodle Jitsi and Ms Teams for online virtual teaching - Questionnaire P10.*

*I received laptop and 3g for me to utilise during online teaching - Questionnaire P11.*

*In order to directly respond to your question, the technology tools that I use included the laptop, the internet, a data projector, Impero, Pastel, computer labs, and WI-FI - Questionnaire P7.*

*I use all the resources offered on campus such as internet, Moodle, pastel, you tube, smart phone - Interview P10.*

*As much as the college has offered MOODLE training through MOODLE champions. I still do not know how to use it to the benefit of teaching and learning, I use my laptop a lot, I do not use all the technologies provided at campus - Interview P11.*

*I use nearly all the technological tools the college provides, such as the laptop, the internet, the data projector, the software Impero and pastel, the accessible computer labs, the WI-FI, email, and WhatsApp - Interview P3.*

*The following technologies, Moodle, laptop, wi-fi are used – I am not comfortable using technologies in accounting - I'm old school, when I'm stuck, thankfully there is a technician available to assist and support us - P2 post-observation interview.*

*I have a laptop, 3g, and a projector, but I still need to learn how to use the additional tools that are accessible, like taking virtual classes online and uploading learning materials to Moodle, the learner's management system – P1 post-observation interview.*

*Laptop, Internet, data projector, Impero software, Pastel, computer labs, and Wi-Fi are the technological resources I use to integrate technology into my accounting lessons – P9 post-observation interview.*

*As I said in my questionnaire response, the technology tools I utilised were ones that I had access to, such as a laptop, the internet, a data projector, software programmes like Impero and Pastel, computer labs, and WI-FI. And after receiving peer-to-peer support, I became better at using them – P4 post-observation interview.*

*Laptop, Internet, data projector, Impero software, Pastel, computer labs, and WiFi are among the technological resources I use while teaching accounting – P10 post-observation interview.*

For accounting lecturers to remain *au fait* with continuous changes and improvements in the subject area, it is necessary for them to embrace technologies in their teaching in order to keep up with the technological innovations which professional accountants are adopting. The above testimonies reveal what technologies are used by accounting lecturers in their teaching (also see Table 4.1 for technologies used). A closer look at the testimonies above and Table 4.1. indicate that there are variations in the technologies used by the accounting lecturers. The most common devices used is the laptop and Moodle. This means that the accounting lecturers do not use the same technologies in their teaching, nor do they use all the technologies available at the campus.

From the testimonies above it can be gathered that lecturers' readiness (*I'm old school*) and skills (*when I'm stuck, thankfully there is a technician available to assist and support us*) in using technologies play an essential role in their use in lecturers' classes. The accounting lecturers' testimonies confirm their need for sufficient technological skills to integrate the technologies in their teaching and to have a high confidence level to use them in a classroom setting. For lecturers who struggle with using various technologies, or if the device is not functional, a technician is available on campus to assist and support lecturers to overcome the technical dilemma they may encounter.

The findings indicate that for lecturers to be able to use technologies meaningfully in their instructional process they need to have an insight into the pedagogical role of technologies. Lecturers who have low confidence in the use of digital technology show inhibitions in using it (Mardiana, 2020). According to Mardiana (2020), in adapting to technological change, lecturers must have a positive attitude of technological change, technological knowledge, technological capabilities, and technological skills. Lecturers must continue to learn and practise and try advanced techniques in using digital technology to adapt to changes in digital technology.

#### **4.4. Research Question 2:**

*How does the use of technologies influence TVET accounting lecturers' pedagogy?"*

Analysis of the data from the questionnaire, observation, and interviews were used to respond to research question two. Three themes emerged: influence on instructional strategies; influence on teaching; and influence on content knowledge. Each of these themes are elaborated on.

Participant 2 stated that knowledgeable, capable, and skilled lecturers would easily adapt to digital technology. Technological changes affect pedagogical changes from teacher-centred to student-centred learning, a learning trend in the 21st century. According to Iivari et al. (2020), the life changes taking place during the COVID-19 pandemic require lecturers and students to master digital technology. Although society has various kinds of digital gaps, discussion on digital transformation is able to meet learning needs so that face-to-face and online pedagogical roles can be fulfilled. Ilomäki and Lakkala, (2018) described that the increased use of digital technology in all educational institutions during the COVID-19 pandemic could offer a framework for creating innovative digital technology and learning, as knowledge creation forms the foundation of educational institutions. Each institution's teaching community, pedagogical practice, and knowledge practice become a digital resource for 21st-century learning.

- **INFLUENCE ON INSTRUCTIONAL DESIGN**

The testimonies below reveal the impact the use of technologies have had on an accounting lecturer's instructional design.

*I have changed my mind-set about learning after integrating technologies in my teaching, and how to use the content I know to design interactive lessons and tasks for collaborative learning - P5 Questionnaire.*

*Yes, after incorporating technology into my teaching, learning the online teaching pedagogies transformed my perspective on learning and how to use the knowledge I know to create interactive lessons and assignments for group learning. I now understand the value of incorporating online instruction with my regular classroom teaching – P9 Questionnaire.*

*I think strategically when planning, organising content to meet student needs – with the use of technologies – P7 Interviews.*

*I use constructivist ways to teach the fundamental accounting equation  $A=L+E$ , that is a challenge to students. Using technology has helped students to understand this equation - P8 Interviews.*

*To add to that, my understanding of how to apply what I know to create interactive lessons and assignments for group learning after integrating technology into my teaching has altered as a result of my experience with online teaching pedagogies. I can now see the benefits of incorporating online learning with my normal classroom instruction. My decision to advance in my career was motivated by the support of my fellow educators regarding the usage of technology in the classroom - P9 Interview.*

*Due to technological advances and the joint efforts of my colleagues, I've come to the understanding that my usual approach to teaching accounting principles is no longer effective. However, the rate of change in teaching methodologies has been as significant. Even though traditional education strategies have their advantages, I also learnt through best practices how to include non-traditional methods into my lesson planning. I've learned that I can now use imagery, slides, and videos to visually represent a variety of accounting concepts in the lecture. I've arrived at the realization that presentations are also the quickest way for me to improve my pedagogical practices if I move away from the traditional processes of teaching accounting – P6*

*Actually, technology serves as a link between traditional and modern teaching techniques - P8 Interviews*

*I use online videos, to explain the accounting theory by way of easy example, students relate to the videos - P4 Post-observation Interview.*

*In order to make accounting terminology easier for my students, I always prefer PowerPoint presentations when we are learning online. I also share the same presentation with the students through WhatsApp - P3 Post-observation Interview.*

It can be seen in the above testimonies that the integration of technologies in their teaching has altered a lecturer's mindset about how learning occurs and has impacted their instructional design. The use of technologies has influenced how lecturers use their content knowledge to design interactive lessons and tasks to promote learning amongst their students and meet student needs.

- **INFLUENCE ON TEACHING**

Using technologies in their teaching resulted in student centred learning and greater student engagement, evident in the excerpts below:

*My lesson design has transformed, I now am a facilitator, students are more involved in the lessons, they, access tasks, I now know more about students learning styles and provide tasks to suit their diverse ability and learning styles - P3 questionnaire.*

*My approach to creating lesson plans and presentations has changed. My ability to facilitate dialogues in my presentation has improved. Students are more engaged in the sessions and have immediate access to learning exercises. I am more familiar with students' learning methods and assign assignments that are appropriate for their range of skills and learning preferences- P12 questionnaire.*

*I noticed that students are setting their own goals, more of them are participating in individual tasks and in group work, quizzes, game playing, they are working at their own pace, they access tasks and material when it is convenient for them, work through them and then try tasks that are more cognitively challenging - P10 interview.*

*Online education became popular and effective. Due to the online teaching options during COVID-19, students are now creating their own study goals. The flexibility of working at their own pace and having access to assignments and materials whenever it's most convenient for them allows students to participate in both individual and group projects, assessments, and game-planning activities. The students can now learn from a distance while comfortably taking online accounting classes and cognitively appreciating the assignments they receive – P5 interview.*

*To be more exact, both my students and I discovered that playing online games like card games, card numbers, and quizzes could brighten up the lectures on accounting. This has had a tremendous impact on our online teaching. I also learned that gamifying the teaching methods can encourage my students to perform better in the classroom and participate more actively in online lessons- P2 interview.*

*My teaching style and how I employed technology are mostly influenced by three reasons. The availability of technology in the classroom, the expertise of other educators, and peer-to-peer training are the first three factors. I gained teaching experience using an interactive whiteboard since it integrates technological application with educational goals. I've learnt how to utilise MOODLE as a learner management system, a platform for online learning that students can access at any time, and one that lecturers can use to store resources and course materials - P8 interview.*

*Students will be able to select technologies to explore ideas, ask questions, gather and distribute information and support each other in learning, work on solving problems, activities are linked to real life examples, thus they learn more readily - P5 Post-observation interviews.*

*With activities that are connected to real-world situations, students learn more quickly. Students will be able to choose technology to express ideas, ask questions, collect information, and assist one another while learning – P7 Post-observation interviews.*

The above excerpts illuminate the multiple ways (*ask questions, gather, and distribute information and support each other in learning, work on solving problems*) in which lecturers use technologies to create a constructivist student centred learning environment and transform teaching and learning in accounting. This means that using technologies in their teaching has transformed their pedagogy from teacher centred to student centred. Lectures have taken on

the role of facilitators and pay attention to their students' learning style and their diverse abilities (*I now know more about students learning styles, suit their diverse abilities*). Put simply, this means that lecturers have changed their mindset of learning by using technologies to construct interactive learning. The above finding concurs with that of Pettersson (2021), which indicates implementing learning technologies would involve pedagogical and instructional changes. Learning using technologies therefore has an impact on the teaching process.

From the excerpts, it is also visible that the student-centred approach adopted has personalised the learning process as it caters for student learning styles, student diversity and increased student participation in terms of the number of individual activities, group work and the number of students participating in activities. It is noted that using technologies allow for activities to be linked to real life contexts, thereby allowing students to learn concepts more readily. These results were in line with those of Koul and Nayar (2021), who suggested that to prepare students for their future careers, academic institutions should become more inventive and dynamic through the transformation of the teaching and learning process into an active and engaging process connected to real life. The above findings are aligned with that of Webb et al. (2017) as well as Reinsfield and Fox-Turnbull (2020), which assert that integrating technologies in teaching increases the learning opportunities for students. Activities such as group work, projects and collaborations allow students to work together and forge a student learning community whereby they develop skills such as personal agency, problem solving, communication (Mason & Rich, 2019). Furthermore, student learning is not confined to one location (the classroom), as the use of technologies has made it possible for students to learn from anywhere and at any time convenient to them. The above finding is in line with that of Pandit (2018), who posited that technologies have made it possible for learning to occur anywhere, at any time.

- **INFLUENCE ON PERSONAL GROWTH**

The use of technologies in their teaching has influenced lecturers' learning in terms of linking different content topics in accounting, teaching strategies, knowledge of their students and the curriculum by allowing them to form learning communities, as is visible in the excerpts below.

*I was not confident in using technologies, I am old, and chalk and talk worked for me over the years...with COVID and online teaching. I had to try ... but it was hard... until I asked one of the younger lecturers to help me ... we then formed what he called a learning community, we shared what worked ... what we need help with ... - P6 Questionnaire.*

*Since I was getting older and my teaching methods had relied heavily on chalk and speak for many years, I was anxious to use technology. With the COVID-19 and the shift from in-person to virtual learning, my colleagues' encouragement aided my development a lot - P4 Questionnaire.*

*Using technology tools helps my learning – I have improved my knowledge of technologies, and my content knowledge on how to teach the difficult sections in accounting, what is nice is that I could ask my colleges when I could not use the technology, I am old school so I was lagging behind ... but collaborating with colleagues helped me a lot... my confidence in using technologies has improved, I played around with the technologies and improved my content knowledge, was able to learn how to set tasks for - P7 Interview.*

*I can use technology in the classroom now. It is now an important part of effective accounting lectures and greatly improves student understanding. My use of technology in the classroom has significantly increased, and as students' awareness of the validity of accounting data grows, so does their interest in accounting lessons. I observed that the fundamentals of computer hardware and software are incorporated into accounting systems for storing accounting data. Students now have quick access to a variety of resources and programmes with just one mouse click. And unlike the traditional processes of having to wait until one must visit the library, where resources may be scarce, according to me, it's considerably simpler to acquire levelled readings or investigate topics that interest the student - P9 Interview.*

*Being an old-fashioned person, I was falling behind when I couldn't use the technology. However, utilising technological resources has improved both my technological knowledge and my subject experience in how to instruct the difficult areas of accounting. However, having a team of co-workers helped me a lot... My familiarity with using technology has grown; I've experimented with it to deepen my knowledge of the subject and have discovered how to assign assignments – P2 Interview.*

*We shared our best practice to improve our content knowledge and pedagogy... it was a safe space to learn from each other at our own ...that benefited my planning - P12 Post-observation interviews.*

*My expertise and knowledge have grown as I design classes while using technology to teach accounting. I appreciate the help and guidance I've received in incorporating technology in the classroom very much* - P2 Post-observation interviews.

It can be gathered from the above excerpts that lecturers forged their own learning communities due to their need to improve their confidence in using technologies, knowledge about the technologies, best practice, and pedagogy needed to engage in online teaching. They collectively pooled their resources, and a learning community was created for collaboration, cooperation, sharing best practices and creative solutions to support each other to embark on quality online teaching. The collaboration among lecturers enhances lecturers' learning; the testimonies above reveal lecturers' willingness to learn from each other, share best practices, try new methods to improve their online pedagogy and reveal their lack of expertise in a safe space. Consequently, their confidence increased, and they embarked on innovative strategies to engage their students in meaningful activities on the online platform. The findings resonate with that of Singh-Pillay and Naidoo's (2022) study, which illuminate the learning and growth that lecturers experienced when they formed their own learning communities to support their practice; and in the absence of proper professional help, to develop and engage in remote online teaching.

#### **4.5. Research Question 3:**

*What factors enable or constrain the TVET lecturers' use of technologies in their classroom?*

The third research question was addressed by using information from the questionnaire, observation, and interviews. Two themes emerged: factors which enable the use of technologies; and factors which constrain the use of technology. Each of these themes will be elaborated upon next.

##### ***4.5.1. Factors that Enable the Use of Technologies***

The factor which enabled the use of technologies is the learning community. Applying the constructs of the theoretical framework during the analysis process reveals that the learning community is akin to a facilitating condition and is also linked to lecturer's personal innovativeness.

- **LEARNING COMMUNITY**

Lecturers' reliance on the learning community as an enabler for the use of technologies in their classroom is brought to the fore via the excerpts below:

*I would not have managed to embark on integrating the use of technologies in my teaching of accounting as successfully as I do now. I can scaffold my students learning. I attribute this new knowledge and learning to the collegiality, kindness and safe learning space that was forged amongst us. We were learning from and with each other. Being older I did not feel embarrassed to learn from my colleagues who are far younger than me. P2- questionnaire.*

*Without the encouragement of my peers, I could not have been as effective in my use of technology or in my ability to use it to teach accounting. My teammates' ability to guide me step by step demonstrated their courtesy and support, and they gave me a secure learning environment in which to use my newly acquired knowledge and pedagogical techniques. Our mutual learning helped us grow. I can now support my students' learning with assurance – P4 questionnaire.*

*I will always be grateful to my colleagues, who have similar academic objectives and outlooks and routinely get together to discuss how to best use technology in the classroom to teach accounting. The development of these communities has served as a model for an interprofessional, peer group approach to the accounting division, primarily because it is based on a more comprehensive method of educational or "pedagogical" designing - P4 questionnaire.*

*Whenever I struggled to use the technology provided or needed to rethink my teaching strategy or assessment, or lesson design I turned to my colleagues for support, as we had no official professional development support to capacitate us with pedagogies needed for online teaching and learning. P4 Interviews.*

*Since there was no official professional development support available to us to prepare us with the use of technology in the classroom and online teaching pedagogies, we ended up forming a learning team of accounting lecturers to help one another and share information and best practices. During Covid-19, teaching and learning improved greatly, to the great benefit of the students. P6 Interview.*

*My interactions with other accounting lecturers to be supportive and share teaching methods improved, thanks to learning communities. Second, I improved my learning practices because another key feature of learning communities gave me the space to explore, comprehend, and*

*enhance teaching practices. As different lecturers presented their lessons, I took responsibility to learn their skills, and that has grown me as a lecturer. This opened my door to more collaborative teaching processes using technology. Discussions frequently focused on improving college procedures, continuously refining instructional practices, and connecting the curriculum to student learning needs – P5 Interview.*

*Without the support of accounting lecturers, technology integration would have been a fruitless exercise. Regardless of how young my colleagues are compared to me. I have learned a lot from them. Together, we were developing our knowledge. I can now use online teaching approaches to enhance the learning of my students - P2 Post-observation Interviews.*

*We were able to coordinate ourselves around a common objective, thanks to learning communities' space and structure. They developed into very effective, aspirational communities. They established connections between accounting lecturers and made sure that we were willing to use the offered digital tools and systems. Our capacity to exchange information and learn from one another in these groups helps us make quick yet meaningful progress in accounting classes - P4 Post-observation Questionnaire.*

*Technology integration would not have been successful without the assistance and collaboration of the accounting lecturers. My peers and I worked well together to enhance my knowledge. I can now help my students understand concepts better by using online teaching approaches - P7 Post-observation Interviews.*

*As a lecturer, I believed that the Learning Community made me into an educational hero. I was able to pay attention to my fellow accounting lecturers, the students, and the professional world, and I could see everyone engaged as a possible source of great information. I adjust and take on new techniques to assist students in learning in ways that are appropriate for them. To aid my students in making better judgments in their own lives and in society, I integrate education with their social, emotional, and intellectual development – P12 Post-observation Interviews.*

For lecturers to be successful in the use of technologies in their teaching and to be able to scaffold students' learning, it was necessary for lecturers to be competent in the use of technologies. From the above excerpts as well as excerpts in section 4.4. above, it is evident that the learning community forged among the accounting lectures provided an enabling environment for lecturers to work collaboratively and collegially; reflect on their practice, bear

their uncertainties in using technology; take risks, and seek further clarification where and when necessary. Via these learning communities, lecturers were empowered to be in control of when, how and what they had learnt. The learning community is a complex system of enabling connection of support.

#### ***4.5.2. Factors that Constrain the Use of Technologies in Accounting Classroom***

The factor which constrains the use of technologies is the lack of training for online teaching.

- **LACK OF TRAINING FOR ONLINE TEACHING**

*How can you expect me to embark on online teaching if I am not trained for it? – P9 Questionnaire.*

*Aside from receiving training on how to use the Microsoft Word, Outlook, and PowerPoint technology tools, I didn't receive any training in how to use technology into the accounting lectures I was teaching. The process of integrating technology in accounting teaching was slowed by a lack of training – P11 Questionnaire.*

*In order to successfully integrate online teaching, training on technology use was crucial. This included designing learning materials with the newest technology and employing a variety of approaches. I was surprised to learn that using technology was expected from me. In order to effectively prepare my students for the transfer of accounting core skills, I needed training on the integration of technology – P1 Questionnaire.*

*It was considerably more difficult to catch up in the rolled-out plan without a clear training and follow-up strategy in place, prior to the adoption of online teaching. Prior to start training for each new initiative, it was crucial to set defined learning objectives and outcomes. Without enough training, developing different programmes or systems took longer for me and was more difficult for me. For my colleagues to lead and support the training activities, there was a lack of a clear training plan on teaching pedagogies - P9 Questionnaire.*

*The training was not about pedagogy – it was on the features of the technologies and a tick box activity for the institution, it was not interactive or hands on - P6 Interviews.*

*Yes, training was given, but it didn't include the pedagogical methods used to teach accounting online. In my opinion, the training offered served solely as proof that a training had been completed – P12 Interviews.*

*A lack of planning and training has caused nearly half of us accounting lecturers to disregard the technology that is available in the classroom, potentially wasting the funds that were spent on data, WIFI, and other technology tools purchased for this purpose. I believe that regular training will boost my self-assurance and technical proficiency in the classroom. The instruction must be continual and extend to the many pedagogical techniques to be applied when teaching online - P3 Interviews.*

*I needed to know about online teaching strategies and assessment - P8 Post-observation Interview.*

*I would like training on how to use Moodle as a learner management system and present accounting lessons online – P11 Post-observation Interview.*

*P12- Since I didn't want to fail in my obligations of providing online instruction during COVID-19 and shame myself in front of the kids, I had very poor confidence and morale due to the ineffective implementation of technological training. Without a clear plan, it was impossible for me to start using online instruction right away. Following the instruction for Microsoft Word, Outlook, and PowerPoint, I also had trouble understanding the teaching strategies. Pedagogical methods for teaching accounting online were not included. Designing online lesson plans and displaying accounting transactions online should have been covered in the training, in my opinion. Furthermore, it was essential to at least make the training coach accessible as I implement technology in the classroom. I also believed that training should consider assigning certain subject-matter experts to support training both before and after the session. This would have suggested that my colleagues and I had someone to turn to with questions and difficulties – P12 Post-observation Interview.*

*I believe that in order to guarantee that the training is precise and pedagogically focused, it is crucial to define the process requirements, identify the lecturers' training requirements, and carry out a technology and content analysis. It should have been carefully determined what training needs before starting online teaching – P6 Post-observation Interview.*

It can be gathered from the above excerpts that accounting lecturers critiqued the training they required to engage with online teaching. They raised questions about the online training they received from their institution to embark on online teaching. The excerpts above reveal the lack of consultation with academics on the type of training required to embark on online teaching contributed to the training being construed as a tick-box activity to meet institutional requirements rather than the needs of academics. The training was devoted to instructing staff

on the use of technological devices to embark on online teaching. Although knowing how to use technology to embark on online teaching is important, knowing about online pedagogy is the key to effective online learning. Lecturers were disappointed that the training provided did not cater to staff who required more than developing technical or technological skills to embark on online teaching. Their critique of the training included that it was not hands-on or interactive, nor did it include the development of the pedagogical skills needed to transition from face-to-face to online teaching. The finding of this study concurs with that of Goh et al. (2017), who conducted a study at a Malaysian university, and asserted that effective online pedagogical training for teachers is essential for successful and meaningful online interactions between students and teachers, and amongst students. Online teaching is not a direct transfer of face-to-face activities to online platforms, but has its own dynamics.

#### **4.6. Summary of the Chapter**

This chapter presented qualitative data collected through interviews, observation, and a questionnaire. The three research questions served as a guide for how the analysis of the data was presented. Research question one sought to understand what technologies are used by TVET accounting lecturers during online teaching and learning under COVID-19 conditions. It was clear from the analysis of the data from the focus groups and questionnaire that the participants thought the technologies used by accounting lecturers varied. Laptops and Moodle are the most frequently used technologies. This indicates that neither all the technologies available on campus, nor the same technologies, are utilised by the accounting lecturers in their teaching. The evidence of the accounting lecturers demonstrates that lecturers require strong levels of confidence when using technology in the classroom as well as adequate technological skills to integrate it into their instruction. The conclusion suggests that lecturers must understand the pedagogical function of technologies to use them meaningfully in their instructional process.

Research question two was concerned with how does the use of technologies influence TVET accounting lecturers' pedagogy. These concepts fell into three major themes: influence on instructional strategies; influence on teaching; and influence on content knowledge. The data indicate that the accounting lecturers were knowledgeable of all three themes.

The third research question looked at what factors enable or restrict the use of technology in the classroom by TVET accounting lecturers. The analysis has shown that the factors that enable the use of technologies are the learning communities that the accounting lecturers have

established. It can be inferred that lecturers created their own learning communities because of the need to increase their technological knowledge, pedagogical expertise, and confidence to engage in online teaching. They merged their resources collectively, and a learning community was established for cooperation, sharing best practices, and coming up with original solutions to help one another start doing quality online teaching. A lack of training for online teaching was a limiting factor in the use of technologies. Staff members received training on how to use technological tools to start teaching online. Online pedagogy knowledge is essential for starting an online teaching career, but it is also crucial for successful online learning. Lecturers were disappointed that the training did not address the needs of staff who needed more than acquiring technical or technological skills to start teaching online. The last chapter discusses the research's limitations, makes some recommendations, and offers closing remarks.

## CHAPTER 5

### DISCUSSION OF KEY FINDINGS, RECOMMENDATION AND CONCLUSION

#### 5.1. Introduction

This study sought to explore the impact of the use of technologies on TVET accounting lecturers' pedagogy and the factor that enable or constrain the TVET Accounting lecturers, use of technologies in their classroom. A case study methodology was applied. Twelve accounting lecturers were purposively selected to take part in this study and consented to participate. Qualitative data were generated by a questionnaire, observation, and interviews, which were used to answer the following three research questions:

- 1. What technologies are used by TVET accounting lecturers during online teaching and learning under COVID19 conditions?*
- 2. How does the use of technologies influence TVET accounting lecturers' pedagogy?*
- 3. What factors enable or constrain the TVET lecturers' use of technologies in their classroom?*

A summary of the main conclusions in relation to the study's research questions is presented in this chapter. The basis for the discussion is the themes that emerged from the analysis. The chapter contains five subsections that consider the context of the study. The first subsection discusses a summary of the key findings, the second discusses the benefits of using technology tools in accounting lecturers' classrooms, and the third discusses the constraints on technology use for accounting lecturers when they conduct online teaching. The fourth subheading is the recommendations to the various divisions of the TVET college. The limitations of the research are discussed in the fifth subsection.

## 5.2. Summary of Key Findings

**Table 5.1: Summary of Key Findings**

Research Questions	Themes Emerged	Key Findings
1. What ICT tools are used by TVET Accounting lecturers during online teaching and learning under COVID19 conditions?	Theme 1: Technology as the technical tools	<ul style="list-style-type: none"> <li>Laptop/Computer Labs/ Internet/WI-FI/ data projector/ Whiteboards</li> </ul>
		<ul style="list-style-type: none"> <li>Moodle as a Learner Management System</li> <li>Emails and WhatsApp</li> </ul>
2. How does the use of ICT influence TVET accounting lecturers' pedagogy?	Theme 2: Influence on Lecturers' pedagogy	<ul style="list-style-type: none"> <li>Influence on instructional strategies</li> <li>Influence on teaching and, influence on content knowledge and Personal Growth</li> </ul>
3. What factor enable or constrain the TVET lecturer; use of ICT in their classroom?	Theme 3: Constraining and Enabling factors	<ul style="list-style-type: none"> <li>Factors enabling the use of Technology</li> <li>Learning Communities</li> </ul>
		<ul style="list-style-type: none"> <li>Factors constraining the use of technology</li> <li>Lack of training</li> </ul>

The findings of this study and the biographical data indicate that younger and more recent accounting lecturers at the Western TVET college's Krugersdorp Central Campus keep up with the most recent technology available to them and use it in their teaching more frequently than older lecturers who have been in the classroom for more than ten years. Further, the findings reveal the participants' levels of technology confidence. They show, in the first theme, that accounting lecturers have access to the following technological resources: the internet, computers and laptops, computer labs, data projectors, online videos, Moodle, and Impero tutor software, a programme that enables the lecturer to keep an eye on student activity, demonstrate concepts, and send files. Audio recordings are often used by lecturers to send assignments to students via email or WhatsApp.

Three major themes emerged from the discussion of the second research question: influence on teaching; influence on instructional strategies; and influence on content knowledge and personal growth of lecturers. According to research on how instructional strategies are thus affected, the use of technology in the classroom has altered lecturers' perspectives on how learning occurs and had an impact on their instructional design. The impact of lecturers using technology to develop interactive lessons and tasks that meet their students' needs and encourage learning among their students has been identified. Technology-enhanced learning influences the teaching process, according to the research's findings on the second theme. The use of technology has made it possible for students to learn from anywhere at any time that is convenient for them, so that student learning is not limited to one setting (the classroom) (Pandit, 2018). The conclusion on theme three of the second question is that lecturers' collaboration improves lecturers' learning. The previously stated testimonies show lecturers' willingness to learn from one another, share best practices, try new methods to improve their online pedagogy, and reveal their lack of expertise in a positive space. As a result, their confidence grew and they started devising creative ways to involve their students in worthwhile activities on the online platform.

The finding of research question three is that while a lack of training was a constraint, learning communities enable online teaching. The results are consistent with those of Singh-Pillay and Naidoo's (2022) study, which highlights the learning and growth lecturers underwent when they created their own learning communities to support their practice in the absence of appropriate professional development to engage in remote online teaching.

### **5.3. Factors that Enable the Use of Technologies**

According to data analysis, the Krugersdorp Central Campus of Western TVET College has an adequate amount of technology resources, and the accounting lecturer has become increasingly interested in using technology to teach as they have learned more about it. The results of this study, which looked at the use of technologies on accounting lecturers' pedagogy during online teaching, revealed that despite the challenges mentioned by the participants, there were also fruitful learning opportunities. The pedagogical techniques they had encountered in learning communities also contributed to their successful learning experiences. A community of practice is made up of groups of people who are interested in the same thing they do and who work together to learn how to improve it (Wenger & Wenger-Trayner, 2015).

These satisfying encounters eventually result in satisfying behavioural attitudes, such as increased student concentration in class and peer support from accounting lecturers. The participants talked about their positive MOODLE experiences while assisting one another and waiting for formal training from college senior management. In the UTAUT framework theory put forth by Venkatesh et al. (2003), it was discovered that to use a technology is determined by behavioural intention and facilitating conditions, whereas performance expectancy, effort expectancy, and social influence were theorised and found to influence behavioural intention to use a technology.

#### **5.4. Factors that Impinge the Use of Technologies**

The findings indicate how their use of technology in the classroom was constrained by a lack of training. Although the participants emphasised the benefits of teaching with technology, there are some reservations about the pedagogical methods used to teach it. Due to this, the content of some accounting modules was not applicable, or was applied in ways that were unrealistic (pure theory; "more theoretical than practical, "they don't make reference or relate it to real-life"). The spread of COVID-19 has sparked the rethinking and redesign of innovative learning, teaching, and evaluation approaches that embrace a deeper understanding of accounting (Tharapos, 2021). This finding supports Tharapos' (2021) argument that students or learners would feel more motivated learning accounting using modern technologies. According to Alqahtani and Rajkhan (2020), this method of instruction is becoming more and more common in higher education institutions worldwide. Behavioural intention and facilitating conditions determine one's potential to use information technology. Behaviourist theory ran contrary to active cognitive learning approach, which holds that learning happens because of cognitive, affective, and psychomotor processes (mental processing, attitude, or self-awareness, and manual or physical skills). According to Bloom, accounting education can be viewed as having many different facets. Teaching accounting requires creative and exploratory methods that encourage students to "think outside the box" while also developing Lafond et al.'s (2016) multiple disciplines understanding of the accounting world. The results of this study also call into question the methodologies used by accounting lecturers, the college sustainability plans, and college guidelines for using technology for online teaching in accounting classes. The recommendations suggested in the section that follows would help to improve accounting education by utilising technology to its fullest potential in the TVET college sector.

#### **5.5. Recommendations**

Recommendations are given so that stakeholders may collaborate with the department of higher education, other institutions, or beyond, in implementing the use of technology in TVET colleges since the study's results indicated both positive and negative learning experiences.

##### ***5.5.1. Recommendation to Senior Management***

The study only examined one campus and one department at the TVET college in terms of the availability of technological tools on campus. Future research could look at information from numerous departments on one campus, or from all five campuses. The policy of the TVET

college's technology was not examined because the research methodology for this study did not include document analysis. Future research might include an analysis of current technology policies and standard operating procedures.

### ***5.5.2. Recommendation to the Academic Division of the TVET College***

The study focused on how the use of technologies influence TVET accounting lecturers' pedagogy in the department. Therefore, it is advised that further investigation into the use of technology across all other departments and campuses be implemented. At the TVET college, these departments include hairdressing, mechanical and electrical engineering, financial management, marketing management, management assistant, human resource management, and management of operations. It is also advised that future studies concentrate on administrative responsibilities and how technology can help lecturers in this area. Another suggestion is to consider how smartphones may affect TVET colleges' teaching and learning processes. It is further recommended that investigation on how students comprehend concepts more clearly when their lecturers are using technology in the classrooms. Future research might take a student-centred approach, in which opinions of students are explored regarding how technology used by their lecturers helps them comprehend subject material and how they view the availability and accessibility of technology at the TVET college. Additional research could investigate the various technology training programmes available to lecturers before they start working. Future studies could examine whether public TVET colleges offer lecturers modern technology programmes, which could also help students earn credits for continuing professional development

According to the research, audio-recorded lessons help lecturing staff with revision and can be used to send lessons to absent students. Therefore, it should be required to record every lesson. Online tests, with all their advantages, should be taken into consideration, especially since there is no handling of scripts and consequently no risk of contamination. The use of paperless marking is advised because it is more environmentally friendly and relieves lecturing staff of the responsibility of keeping records and scripts on hand until their use-by date. To make learning and assessment in class more enjoyable, online tests should be created for all subjects. Prior to starting their jobs, every member of the teaching staff should receive technology training. Additionally, this would support ongoing professional development. Every campus should have access to IT support as well as an IT pedagogical support person who can mentor staff members and help them hone their own pedagogical abilities.

### ***5.5.3. Recommendations To Information Technology Management of the TVET College***

The lecturer should have access to a desktop computer in every classroom, because using a laptop carries some risks. Lecturers bring their laptops home with them, but they may be lost or stolen, leaving them without the means to use technology in their classes. On campus, Wi-Fi should be widely accessible rather than restricted to a few locations where students can use it. Students who don't have access to the internet at home would benefit from this. It is recommended that the college choose a predetermined data bundle to be made available to students for educational use at home. The lack of data available to students during the lockdown period was a problem that became apparent. For complete class group access, the resource centre needs to be able to hold at least 40 students. By doing away with computer sharing, a significant amount of time would be saved. The hours of operation for the resource centre should be increased to at least two hours after the last scheduled class. The resource centre should be accessible after hours as well.

### **5.6. The Limitations of the Research**

A sample size of 12 participants was used in this study, which was conducted on a single campus of a TVET college. Consequently, it might not be applicable to all TVET colleges in South Africa. This study focuses solely on the pedagogical strategies used by accounting lecturers when conducting online teaching. There was no debate of students' perceptions of how technology helps them understand the material in accounting classes. It was possible to use student observations for this. The TVET management and campus IT support staff were not surveyed as part of this study so as to learn more about their perspectives. In this study, the technology tools offered by a public TVET college were investigated, as well as conditions that allowed or prevented accounting lecturers at a specific campus from using these tools. The accounting lecturers' age, attitude, skills, and competence, technical support, available training and their openness to learning were all taken into consideration. Although case studies are restricted to a single data source, it could generate a wealth of data, allowing for rich and in-depth data analysis. As a result, the findings of this study are constrained and should not be extrapolated to groups other than the pre-service teacher participants. However, as an exploratory study, the findings are helpful in highlighting the students' problems, which might be pertinent at other higher education institutions.

## REFERENCES

- Aguguum, T. A., Ajayi, A., & Dare, O.E. (2020). COVID-19 and accounting education in Sub-Sahara Africa. *European Journal of Business, Economics and Accountancy*, 8(3), 1-11.
- Akbulaev, N., Mammadov, I., & Shahbazli, S. (2021). Accounting education in the universities and structuring according to the expectations of the business world. *Universal Journal of Accounting and Finance*, 9(1), 130-7.
- Ali, N., Ali, O., & Jones, J. (2017). High level of emotional intelligence is related to high level of online teaching self-efficacy among academic nurse educators. *International Journal of Higher Education*, 6(5), 122-130.
- Al-Mansoori, R. S., & Koç, M. (2019). Transformational leadership, systems, and intrinsic motivation impacts on innovation in higher education institutes: Faculty perspectives in engineering colleges. *Sustainability*, 11(15), 4072.
- Alqahtani, A. Y., & Rajkhan, A. A. (2020). E-learning critical success factors during the covid-19 pandemic: A comprehensive analysis of e-learning managerial perspectives. *Education Sciences*, 10(9), 216.
- Al-Rahmi, W. M., Yahaya, N., Aldraiweesh, A. A., Alamri, M. M., Aljarboa, N. A., Alturki, U., & Aljeraiwi, A. A. (2019). Integrating technology acceptance model with innovation diffusion theory: An empirical investigation on students' intention to use E-learning systems. *Ieee Access*, 7, 26797-26809.
- Alshurafat, H., Beattie, C., Jones, G., & Sands, J. (2020). Perceptions of the usefulness of various teaching methods in forensic accounting education. *Accounting Education*, 29(2), 177-204.
- Amasha, M. A., Areed, M. F., Alkhalaf, S., Abougalala, R. A., Elatawy, S. M. & Khairy, D. (2020, February). The future of using Internet of Things (IoTs) and context-aware technology in E-learning. In *Proceedings of the 2020 9th International Conference on Educational and Information Technology* (pp. 114-123).
- Bergman Blix, S., & Wettergren, Å. (2015). The emotional labour of gaining and maintaining access to the field. *Qualitative Research*, 15(6), 688-704.
- Bernard, H. R. (2017). *Research methods in anthropology: Qualitative and quantitative approaches*. Rowman & Littlefield.
- Bertram, C., & Christiansen, I. (2014). Understanding research. *An introduction to reading research*. Pretoria: Van Schaik Publishers.
- Bidabadi, N. S., Isfahani, A. N., Rouhollahi, A., & Khalili, R. (2016). Effective teaching methods in higher education: requirements and barriers. *Journal of Advances in Medical Education & Professionalism*, 4(4), 170.

- Birt, L., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: a tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research, 26*(13), 1802-1811.
- Borba, M. C., Askar, P., Engelbrecht, J., Gadanidis, G., Llinares, S., & Aguilar, M. S. (2016). Blended learning, e-learning and mobile learning in mathematics education. *ZDM, 48*(5), 589-610.
- Butz, A. R., & Branchaw, J. L. (2020). Entering Research Learning Assessment (ERLA): Validity evidence for an instrument to measure undergraduate and graduate research trainee development. *CBE—Life Sciences Education, 19*(2), ar18.
- Çaliskan, E., & Caner, M. (2022). E-Readiness of EFL Teachers. *Malaysian Online Journal of Educational Technology, 10*(1), 1-15.
- Cohen, L., Manion, L., & Morrison, K. (2017). The ethics of educational and social research. In *Research methods in education* (pp. 111-143). Routledge.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approach*. Sage publications.
- Crompton, H., & Burke, D. (2018). The use of mobile learning in higher education: A systematic review. *Computers & Education, 123*, 53-64.
- Cunha, T., Martins, H., Carvalho, A., & Carmo, C. (2022). Not practicing what you preach: how is accounting higher education preparing the future of accounting. *Education Sciences, 12*(7), 432.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 3*, 319-340.
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics, 5*(1), 1-4.
- Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behaviour: An introduction to theory and research. *Philosophy and Rhetoric, 10*(2).
- Flick, U. (2018). *An introduction to qualitative research*. Sage.
- Flick, U. (2020). *Introducing research methodology: A beginner's guide to doing a research project*. Sage.
- Gay, G. H. (2016). An assessment of online instructor e-learning readiness before, during, and after course delivery. *Journal of Computing in Higher Education, 28*(2), 199-220.
- Ghalandari, K. (2012). The effect of performance expectancy, effort expectancy, social influence and facilitating conditions on acceptance of e-banking services in Iran: The moderating role of age and gender. *Middle East Journal of Scientific Research, 12*(6), 801-807.

- Goh, C., Leong, C., Kasmin, K., Hii, P., & Tan, O. (2017). Students' experiences, learning outcomes and satisfaction in e-learning. *Journal of E-learning and Knowledge Society*, 13(2).
- Helfaya, A. (2019). Assessing the use of computer-based assessment-feedback in teaching digital accountants. *Accounting Education*, 28(1), 69-99.
- Hindle, A., Barr, E. T., Gabel, M., Su, Z., & Devanbu, P. (2016). On the naturalness of software. *Communications of the ACM*, 59(5), 122-131.
- Hoque, R., & Sorwar, G. (2017). Understanding factors influencing the adoption of mHealth by the elderly: An extension of the UTAUT model. *International Journal of Medical Informatics*, 101, 75-84.
- Huitt, W. (2018). Analyzing paradigms used in education and schooling. *Educational psychology interactive*, 1-7. Valdosta, GA: Valdosta State University. Retrieved from <http://www.edpsycinteractive.org/topics/intro/paradigm.html>
- Humphrey, R. L., & Beard, D. F. (2014). Faculty perceptions of online homework software in accounting education. *Journal of Accounting Education*, 32(3), 238-258.
- Iftakhar, S. (2016). Google classroom: what works and how. *Journal of Education and Social Sciences*, 3(1), 12-18.
- Iivari, N., Sharma, S., & Ventä-Olkkonen, L. (2020). Digital transformation of everyday life—How COVID-19 pandemic transformed the basic education of the young generation and why information management research should care? *International Journal of Information Management*, 55, 102183.
- Iiomäki, L., & Lakkala, M. (2018). Digital technology and practices for school improvement: innovative digital school model. *Research and Practice in Technology Enhanced Learning*, 13(1), 1-32.
- Jabeen, N., & Ghani, A. (2015). Comparison of the traditional chalk and board lecture system versus power point presentation as a teaching technique for teaching gross anatomy to the first professional medical students. *Journal of Evolution of Medical and Dental sciences*, 4(11), 1811-1818.
- Jacobson, D., & Mustafa, N. (2019). Social identity map: A reflexivity tool for practicing explicit positionality in critical qualitative research. *International Journal of Qualitative Methods*, 18, 1609406919870075.
- John, S., & Wu, J. (2022). "First, Do No Harm". Non-Maleficence, Population Health, and the Ethics of Risk. *Social Theory and Practice*.
- Karsten, I., Steenekamp, K., & Van der Merwe, M. (2020). Empowering accounting students to enhance the self-determination skills demanded by the fourth industrial revolution. *South African Journal of Higher Education*, 34(2), 36-58.
- Keržič, D., Danko, M., Zorko, V., & Decman, M. (2021). The effect of age on higher education teachers' ICT use. *Knowledge Management & E-Learning: An International Journal*, 13(2), 182-193.

- Khalilzadeh, J., Ozturk, A. B., & Bilgihan, A. (2017). Security-related factors in extended UTAUT model for NFC based mobile payment in the restaurant industry. *Computers in Human Behaviour*, 70, 460-474.
- Khemini, R. (2021). Knowledge and skills required in accounting education: a comparative study. In: Alsharari, N. (ed.), *Accounting and Finance Innovations*, Intech Open. DOI: 105772/intechopen.97485.
- Kim, Y., & Silver, R. E. (2016). Provoking reflective thinking in post observation conversations. *Journal of Teacher Education*, 67(3), 203-219.
- Koul, S., & Nayar, B. (2021). The holistic learning educational ecosystem: A classroom 4.0 perspective. *Higher Education Quarterly*, 75(1), 98-112.
- Kumar, J. A., & Bervell, B. (2019). Google Classroom for mobile learning in higher education: Modelling the initial perceptions of students. *Education and Information Technologies*, 24(2), 1793-1817.
- Lafond, C. A., McAleer, A. C., & Wentzel, K. (2016). Enhancing the link between technology and accounting in introductory courses: evidence from students. *Journal of the Academy of Business Education*, 17.
- Laurie, R., Nonoyama-Tarumi, Y., Mckeown, R., & Hopkins, C. (2016). Contributions of education for sustainable development (ESD) to quality education: A synthesis of research. *Journal of Education for Sustainable development*, 10(2), 226-242.
- Lawson, R. (2018). New imperatives: how should colleges and universities prepare accounting and finance students for a new future? *Strategic Finance*, 100(2), 40-46.
- Luna Bazaldua, D., Levin, V., & Liberman, J. (2020). Guidance Note on Using Learning Assessment in the Process of School Reopening. World bank.
- Makarenko, I., & Plastun, A. (2017). The role of accounting in sustainable development. *Accounting and Financial Control*, 1(2), 4-12.
- Maniram, R., & Maistry, S. M. (2018). Enabling well-being and epistemological access through an authentic assessment intervention: A case study of a higher education programme. *South African Journal of Higher Education*, 32(6), 305-325.
- Mardiana, H. (2020). Lecturers' adaptability to technological change and its impact on the teaching process. *JPI (Journal Pendidikan Indonesia)*, 9(2), 275-289.
- Mason, S. L., & Rich, P. J. (2019). Preparing elementary school teachers to teach computing, coding, and computational thinking. *Contemporary Issues in Technology and Teacher Education*, 19(4), 790-824.
- Mathieu, J. E., Luciano, M. M., D'Innocenzo, L., Klock, E. A., & LePine, J. A. (2020). The development and construct validity of a team processes survey measure. *Organizational Research Methods*, 23(3), 399-431.
- McMillan, J., & Schumacher, S. (2014). Research in education evidence-based inquiry (7th int. ed.). Harlow: Pearson Education.

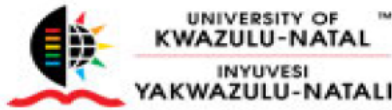
- Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation*. Wiley.
- Meyer, M., & Dykes, J. (2019). Criteria for rigor in visualization design study. *IEEE Transactions on Visualization and Computer Graphics*, 26(1), 87-97.
- Mihret, D. G., Abayadeera, N., Watty, K., & McKay, J. (2017). Teaching auditing using cases in an online learning environment: The role of ePortfolio assessment. *Accounting Education*, 26(4), 335-357.
- Mpungose, C. B. (2020). Emergent transition from face-to-face to online learning in a South African University in the context of the Coronavirus pandemic. *Humanities and Social Sciences Communications*, 7(1), 1-9.
- Nguwap, S. T., & Mamman, J. S. (2022). E-teaching skills needed by business education lecturers for teaching in covid-19 era. *Kwasu International Journal of Education (Kije)*, 4(1), 220-230.
- Ngwenya, J., Sithole, N. V., & Okoli, M. (2020). Teachers' experiences of teaching Accounting in the context of curriculum changes in South Africa. *TD: The Journal for Transdisciplinary Research in Southern Africa*, 17(1), 1-9.
- Nori, W. M. N. W. M., Kassim, C. K. H. C. K., Ahmad, S., & Nasir, N. E. M. (2016). The use of accounting software for effective teaching and learning introductory accounting: A pedagogical discussion. *The Social Sciences*, 11(13), 3315-3320.
- Pandit, A., Dey, B. L., Balmer, J. M., & Saren, M. (2018). Selfie appropriation by young British South Asian adults: reifying, endorsing, and reinforcing dual cultural identity in social media. *Information Technology & People*, 31 (2) 482-506.
- Pather, N., Blyth, P., Chapman, J. A., Dayal, M. R., Flack, N. A., Fogg, Q. A., & Lazarus, M. D. (2020). Forced disruption of anatomy education in Australia and New Zealand: An acute response to the Covid-19 pandemic. *Anatomical Sciences Education*, 13(3), 284-300.
- Pereira, L., & Sithole, B. M. (2020). Learner-Centred Pedagogy in Accounting: Understanding Its Meaning from a Bernsteinian Perspective. *African Educational Research Journal*, 8(1), 20-30.
- Pettersson, F. (2021). Understanding digitalization and educational change in school by means of activity theory and the levels of learning concept. *Education and Information Technologies*, 26(1), 187-204.
- Rajeevan, S. (2020). Accounting: the teaching, the practice and what is missing. *Vilakshan-XIMB Journal of Management*.
- Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education*, 2(3), 923-945.

- Reinsfield, E., & Fox-Turnbull, W. H. (2020). A new approach to professional learning and development for technology teachers in New Zealand: Developing networks of expertise. *Australasian Journal of Technology Education*, 1 (6), 1-13.
- Sahu, P. (2020). Closure of universities due to coronavirus disease 2019 (COVID-19): impact on education and mental health of students and academic staff. *Cureus*, 12(4).
- Sánchez-Mena, A., Martí-Parreño, J., & Aldás-Manzano, J. (2017). The effect of age on teachers' intention to use educational video games: a Tam approach. *Electronic Journal of e-Learning*, 15(4), 355-366.
- Serpanos, D., & Wolf, M. (2017). *Internet-of-things (IoT) systems: architectures, algorithms, methodologies*. Springer.
- Singh, N., Benmamoun, M., Meyr, E., & Arikan, R. H. (2021). Verifying rigor: analysing qualitative research in international marketing. *International Marketing Review*, 38(6), 1289-1307.
- Singh-Pillay, A., & Naidoo, J. (2021). Pre-service teacher educators' experiences of using mobile technologies in the teaching and learning of mathematics and technology education for the Fourth Industrial Revolution. In Naidoo, J, *Teaching and Learning in the 21st Century* (pp. 119-136). Brill.
- Singh-Pillay, A., & Naidoo, J. (2022). Digital pedagogy for mathematics and technology education: exploring the initiatives at one South African Teacher Education Institution. In Clark-Willison, Robutti & Sinclair, *Perspectives on Teacher Education in the Digital Age* (pp. 223-241). Springer, Singapore.
- Skhephe, M., & Mantlana, C. (2021). Accounting teachers' voices on factors affecting online teaching during the 4th Industrial Revolution in the Face of COVID-19 in selected high schools in the Eastern Cape, South Africa. *Research in Social Sciences and Technology*, 6(3), 109-121.
- Skhephe, M., Caga, N. P., & Boadzo, R. M. K. (2020). Accounting teachers' readiness for e-learning in the Fourth Industrial Revolution: a case of selected high schools in the Eastern Cape, South Africa.
- Skhephe, M., Mtshatsha, N., & Skhephe, M. (2020). Consumer science teacher's readiness for virtual classroom during COVID-19: a case of selected schools in the Eastern Cape, South Africa. *Multidisciplinary Research*, 2778(756), 2.
- Somayeh, M., Dehghani, M., Mozaffari, F., Ghasemnegad, S. M., Hakimi, H., & Samaneh, B. (2016). The effectiveness of E-learning in learning: A review of the literature. *International Journal Of Medical Research & Health Sciences*, 5(2), 86-91.
- Spiers, J., Morse, J. M., Olson, K., Mayan, M., & Barrett, M. (2018). Reflection/Commentary on a Past Article: "Verification Strategies for Establishing Reliability and Validity in Qualitative Research" <http://journals.sagepub.com/doi/full/10.1177/160940690200100202>. *International Journal of Qualitative Methods*, 17(1), 1609406918788237.

- Šumak, B., Pušnik, M., Heričko, M., & Šorgo, A. (2017). Differences between prospective, existing, and former users of interactive whiteboards on external factors affecting their adoption, usage and abandonment. *Computers in Human Behaviour*, 72, 733-756.
- Sunarya, P. A., Saptoro, A., & Peh, Z. (2017). Utilization Setting Menu to Build Company Accounting System In *Web Based Accounting Online System*. *Aptisi Transactions on Management (ATM)*, 1(1), 1-10.
- Sze, V., Chen, Y. H., Emer, J., Suleiman, A., & Zhang, Z. (2017, April). Hardware for machine learning: Challenges and opportunities. In *2017 IEEE Custom Integrated Circuits Conference (CICC)* (pp. 1-8). IEEE.
- Tadeu, P. J. A., Batanero, J. M. F., & Tarman, B. (2019). ICT in a Global World. *Research in Social Sciences and Technology*, 4(2), i-ii.
- Tharapos, M. (2021). Opportunity in an uncertain future: reconceptualising accounting education for the post-COVID-19 world. *Accounting Education*, 1-12.
- Venkatesh, M. (2003). The community network lifecycle: A framework for research and action special issue: ICTs and community networking. *The Information Society*, 19(5), 339-347.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- Wang, C. S., Jeng, Y. L., & Huang, Y. M. (2017). What influences teachers to continue using cloud services? The role of facilitating conditions and social influence. *The Electronic Library*, 26, 520-533.
- Wang, Z., Utemov, V. V., Krivonozhkina, E. G., Liu, G., & Galushkin, A. A. (2017). Pedagogical readiness of mathematics teachers to implement innovative forms of educational activities. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(1), 543-552.
- Wen, L. (2016). Integrate Video-Based Lectures into Online Intermediate Accounting II Course Learning. *Business Education Innovation Journal*, 8(2).
- Wenger-Trayner, E., Wenger-Trayner, B., & Wenger-Trayner. (2015). Communities of practice: A brief introduction.
- Wilson, C., Woolfson, L. M., Durkin, K., & Elliott, M. A. (2016). The impact of social cognitive and personality factors on teachers reported inclusive behaviour. *British Journal of Educational Psychology*, 86(3), 461-480.
- Yin, R. K. (2018). *Case study research and applications*. Sage.
- Yom, S. (2015). From methodology to practice: Inductive iteration in comparative research. *Comparative Political Studies*, 48(5), 616-644.

- Zalat, M. M., Hamed, M. S., & Bolbol, S. A. (2021). The experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19 pandemic among university medical staff. *PloS One*, *16*(3), e0248758.
- Zheng, Y., Wang, J., Doll, W., Deng, X., & Williams, M. (2018). The impact of organisational support, technical support, and self-efficacy on faculty perceived benefits of using learning management system. *Behaviour & Information Technology*, *37*(4), 311-319.

## APPENDIX A: ETHICAL CLEARANCE



16 May 2022

**Mokgadi Elsa Machaka (221121641)**  
School Of Education  
Edgewood Campus

Dear ME Machaka,

**Protocol reference number:** HSSREC/00004150/2022

**Project title:** Exploring the impact of the use of technologies during online teaching on accounting lecturers' Pedagogy

**Degree:** Masters

### Approval Notification – Expedited Application

This letter serves to notify you that your application received on 06 May 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 16 May 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.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

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 X54001, Durban, 4000, South Africa

Telephone: +27 (0)31 260 8350/4557/3587 Email: [hssrec@ukzn.ac.za](mailto:hssrec@ukzn.ac.za) Website: <http://research.ukzn.ac.za/Research-Ethics>

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

**INSPIRING GREATNESS**

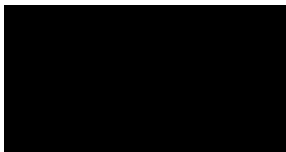
## APPENDIX B: EDITING CERTIFICATE

8 Belle Ombre Road  
Tamboerskloof  
Cape Town  
8001.

27 October 2022

### LANGUAGE EDITING

This is to certify that I language-edited the dissertation, “Exploring the impact of the use of technologies on accounting lecturers’ pedagogy during online teaching,” by Mokgadi Machaka for the MEd. degree in Technology Education, School of Education, University of Kwa-Zulu Natal.



Elizabeth Trew  
[Trew.eliz@gmail.com](mailto:Trew.eliz@gmail.com)  
021 424 6135  
073 235 1147

#### **Note.**

I have a BA Hons. from the University of East Anglia (UEA), Norwich, UK, and an MA in English in Education from University of Witwatersrand (Wits), South Africa. I was a member of the Professional Editors’ Group (PEG) for one year and have over a decade’s experience of language-editing dissertations and academic articles from various South African universities (e. g. Vaal University of Technology, UNISA, Wits, Pretoria University, UJ, UCT).

I correct all grammar errors for full, clear sentences in academic English, which includes use of pronouns and deleting repetitions of sentences (word-for-word). The writing should flow and retain the writer’s voice.

I check format and referencing, in-text and references, with the relevant style-guide.

Elizabeth Trew

# Turnitin Originality Report

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[Hashem Alshurafat, Mohannad Obeid Al Shbail, Walid Muhammad Masadeh, Firas Dahmash, Jebreel Mohammad Al-Msledeen. "Factors affecting online accounting education during the COVID-19 pandemic: an integrated perspective of social capital theory, the theory of reasoned action and the technology acceptance model", Education and Information Technologies](#)

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## APPENDIX D: LETTER OF PERMISSION TO CONDUCT RESEARCH



Corporate Office Park: 42 Johnstone Street, RANDFONTEIN; Private Bag 917, RANDFONTEIN, 1760; Tel: (011) 692-4084; Fax: (011) 692-3404; e-mail: [info@westcol.co.za](mailto:info@westcol.co.za); website: [www.westcol.co.za](http://www.westcol.co.za)



To : Ms. Mokgadi Elsa Machaka  
WESTERN TVET COLLEGE

Dear Madam

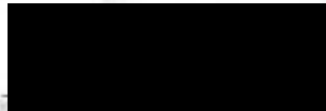
### REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT THE INSTITUTION

Permission is granted for you to conduct your research "Exploring the Impact of the use of technologies during online teaching on accounting lecturers' pedagogy " at Western TVET college at the Krugersdorp Central Campus.

I trust that you will adhere to all ethical protocols, informed consent, anonymity, confidentiality and participant will not be exposed to any harm.

All the best with your studies

Your Faithfully



TPS Mogotsi  
Deputy Principal: Academic Affairs



Date: 08/07/22

College Stamp



#### College Council

Mr S Koba (Chairperson and External member), Advocate K Maja (Vice chairperson and External member), Dr S Kallasa-Kumalo (External member), Professor N Ngwenya (External member), Ms P Molewa (External member), Mr E Kramohle (External member), Mr T Mncube (External member), Mr R Shosana (External member), Mr G Mogeladi (External member), Ms E Mngwana-Lelobane (External member), Mr JT Ngobho (Principal), Mr G Ndou (Academic Board Representative), Mr S Ngcaku (Support Staff Representative), Mr MK Mera (Academic Staff Representative), and SRC Representatives.

## APPENDIX E: INTERVIEW TRANSCRIPT

### APPENDIX E

#### Table of Questionnaire Data Presentation

Questions	Theme	Questionnaire response
<p><i>What technologies are used by TVET Accounting lecturers during online teaching and learning under COVID19 conditions?</i></p>	<p>Technology Tools</p>	<p>P3- <i>we use a laptop, Moodle, internet, data projects, videos</i></p> <p>P10- <i>Laptop, 3g, computer labs fitted with pastel and impero software and Wi-Fi connectivity is available for me to use and learning during teaching. I use Moodle Jitsi and Ms Teams for online virtual teaching</i></p> <p>P11- <i>I received laptop and 3g for me to utilise during online teaching</i></p> <p>P7- <i>In order to directly respond to your question, the technology tools that I use included the laptop, the internet, a data projector, Impero, Pastel, computer labs, and WI-FI.</i></p>
<p><i>How does the use of technologies influence TVET accounting lecturers' pedagogy?"</i></p>	<p>Influence on Instructional Design</p>	<p>P5- <i>I have changed my mind set about learning after integrating technologies in my teaching, and how to use the content I know to design interactive lessons and tasks for collaborative learning.</i></p> <p>P9- <i>Yes, after incorporating technology into my teaching, learning the online teaching pedagogies transformed my perspective on learning and how to use the knowledge I know to create interactive lessons and assignments for group learning. I now understand the value of</i></p>

		<i>incorporating online instruction with my regular classroom teaching.</i>
	Influence on teaching	<p><i>P3- My lesson design has transformed, I now am a facilitator, students are more involved in the lessons, they, access tasks, I now know more about students learning styles and provide tasks to suit their diverse ability and learning styles</i></p> <p><i>P12- My approach to creating lesson plans and presentations has changed. My ability to facilitate dialogues in my presentation has improved. Students are more engaged in the sessions and have immediate access to learning exercises. I am more familiar with students' learning methods and assign assignments that are appropriate for their range of skills and learning preferences.</i></p>
	Influence on personal growth	<p><i>P6- I was not confident in using technologies, I am old, and chalk and talk worked for me over the years...with COVID and online teaching. I had to try ... but it was hard... until I asked one of the younger lecturers to help me ... we then formed what he called a learning community, we shared what worked ... what we need help with ...</i></p> <p><i>P4- Since I was getting older and my teaching methods had relied heavily on chalk and speak for many years, I was anxious to use technology. With the COVID19 and the shift from in-person to virtual learning. My colleagues' encouragement aided my development a lot.</i></p>

<p><i>What factor enable or constrain the TVET lecturer, use of technologies in their classroom?</i></p>	<p>Learning Communities</p>	<p>P2- <i>I would not have managed to embark on integrating the use of technologies in my teaching of accounting as successfully as I do now. I can scaffold my students learning. I attribute this new knowledge and learning to the collegiality, kindness and safe learning space that was forged amongst us. We were learning from and with each other. Being older I did not feel embarrassed to learn from my colleagues who are far younger than me.</i></p> <p>P4- <i>Without the encouragement of my peers, I could not have been as effective in my use of technology or in my ability to use it to teach accounting. My teammates' ability to guide me step by step demonstrated their courtesy and support, and they gave me a secure learning environment in which to use my newly acquired knowledge and pedagogical techniques. Our mutual learning helped us grow. I can now support my students' learning with assurance.</i></p> <p>P3- <i>I will always be grateful to my colleagues, who have similar academic objectives and outlooks and routinely get together to discuss how to best use technology in the classroom to teach accounting. The development of these communities has served as a model for an interprofessional, peer group approach to the accounting division. primarily because it is based on a more comprehensive method of educational or "pedagogical" designing.</i></p>
	<p>Lack of training for online teaching</p>	<p>P9- <i>How can you expect me to embark on online teaching if I am not trained for it.</i></p>

		<p><i>P11- Aside from receiving training on how to use the Microsoft Word, Outlook, and PowerPoint technology tools, I didn't receive any training in how to use technology into the accounting lectures I was teaching. The process of integrating technology in accounting teaching was slowed by a lack of training.</i></p> <p><i>P1- In order to successfully integrate online teaching, training on technology use was crucial. This included designing learning materials with the newest technology and employing a variety of approaches. I was surprised to learn that using technology was expected from me. In order to effectively prepare my students for the transfer of accounting core skills, I needed training on the integration of technology.</i></p> <p><i>P8- It was considerably more difficult to catch up in the rolled-out plan without a clear training and follow-up strategy in place prior to the adoption of online teaching. Prior starting training for each new initiative, it was crucial to set defined learning objectives and outcomes. Without enough training, developing different programs or systems took longer for me and was more difficult for me. For my colleagues to lead and support the training activities, there was a lack of a clear training plan on teaching pedagogies.</i></p>
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**Table of Interview Data Presentation**

<b>Interview Questions</b>	<b>Theme</b>	<b>Interview Response</b>
<p><i>What technologies are used by TVET Accounting lecturers during online teaching and learning under COVID19 conditions?</i></p>	<p>Technology Tools</p>	<p>P10 - <i>I use all the resources offered on campus such as internet, Moodle, pastel, you tube, smart phone</i></p> <p>P11- <i>As much as the college has offered MOODLE training through MOODLE champions. I still do not know how to use it to the benefit of teaching and learning, I use my laptop a lot, I do not use all the technologies provided at campus</i></p> <p>P3- <i>I use nearly all the technological tools the college provides, such as the laptop, the internet, the data projector, the software impero and pastel, the accessible computer labs, the WI-FI, email, and WhatsApp.</i></p>
<p><i>How does the use of technologies influence TVET accounting lecturers' pedagogy?"</i></p>	<p>Influence on Instructional Design</p>	<p>P7- <i>I think strategically when planning, organising content to meet student needs- with the use of technologies.</i></p> <p>P8- <i>I use constructivist ways to teach the fundamental accounting equation <math>A=L+E</math>, that is a challenge to students. Using technology has helped students to understand this equation.</i></p> <p>P6- <i>Due to technological advances and the joint efforts of my colleagues, I've come to the understanding that my usual approach to teaching accounting principles is no longer effective. However, the rate of change in teaching methodologies has been as significant. Even though traditional education strategies</i></p>

		<p><i>have their advantages, I also learnt through best practices how to include non-traditional methods into my lesson planning. I've learned that I can now use imagery, slides, and videos to visually represent a variety of accounting concepts in the lecture. I've arrived at the realization that presentations are also the quickest way for me to improve my pedagogical practices if I move away from the traditional processes of teaching accounting. Actually, technology serves as a link between traditional and modern teaching techniques.</i></p> <p><i>P9- To add to that, my understanding of how to apply what I know to create interactive lessons and assignments for group learning after integrating technology into my teaching has altered as a result of my experience with online teaching pedagogies. I can now see the benefits of incorporating online learning with my normal classroom instruction. My decision to advance in my career was motivated by the support of my fellow educators regarding the usage of technology in the classroom</i></p>
	<p>Influence on teaching</p>	<p><i>P10- I noticed that students are setting their own goals, more of them are participating in individual tasks and in group work, quizzes, game plating, they are working at their own pace, they access tasks and material when it is convenient for them, work through them and then try tasks that are more cognitively challenging,</i></p>

		<p>P5- <i>Online education became popular and effective. Due to the online teaching options during COVID19, students are now creating their own study goals. The flexibility of working at their own pace and having access to assignments and materials whenever it's most convenient for them allows students to participate in both individual and group projects, assessments, and game-planning activities. The students can now learn from a distance while comfortably taking online accounting classes and cognitively appreciating the assignments they receive.</i></p> <p>P2- <i>To be more exact, both my students and I discovered that playing online games like card games, card numbers, and quizzes could brighten up the lectures on accounting. This has had a tremendous impact on our online teaching. I also learned that gamifying the teaching methods can encourage my students to perform better in the classroom and participate more actively in online lessons.</i></p> <p>P8 - <i>My teaching style and how I employed technology are mostly influenced by three reasons. The availability of technology in the classroom, the expertise of other educators, and peer-to-peer training are the first three factors. I gained teaching experience using an interactive whiteboard since it integrates technological application with educational goals. I've learnt how to utilize MOODLE as a learner management system, a platform for online</i></p>
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		<p><i>learning that students can access at any time, and one that lecturers can use to store resources and course materials.</i></p>
	<p><b>Influence on personal growth</b></p>	<p><i>P7- Using technology tools helps my learning - I have improved my knowledge of technologies, and my content knowledge on how to teach the difficult sections in accounting, what is nice is that I could ask my colleges when I could not use the technology, I am old school, so I was lagging behind ... but collaborating with colleagues helped me a lot... my confidence in using technologies has improved, I played around with the technologies and improved my content knowledge, was able to learn how to set tasks for.</i></p> <p><i>P9- I can use technology in the classroom now. It is now an important part of effective accounting lectures and greatly improves student understanding. My use of technology in the classroom has significantly increased, and as students' awareness of the validity of accounting data grows, so does their interest in accounting lessons. I observed that the fundamentals of computer hardware and software are incorporated into accounting systems for storing accounting data. Students now have quick access to a variety of resources and programs with just one mouse click. And unlike the traditional processes of having to wait until one must visit the library, where resources may be scarce, according to me, it's considerably simpler to</i></p>

		<p><i>acquire levelled readings or investigate topics that interest student</i></p> <p><i>P2- Being an old-fashioned person, I was falling behind when I couldn't use the technology. However, utilizing technological resources has improved both my technological knowledge and my subject experience in how to instruct the difficult areas of accounting. however having a team of coworkers helped me a lot... My familiarity with using technology has grown; I've experimented with it to deepen my knowledge of the subject and have discovered how to assign assignments.</i></p>
<p><i>What factor enable or constrain the TVET lecturer, use of technologies in their classroom?</i></p>	<p><b>Learning Communities</b></p>	<p><i>P4- Whenever I struggled to use the technology provided or needed to rethink my teaching strategy or assessment, or lesson design I turned to my colleagues for support, as we had no official professional development support to capacitate us with pedagogies needed for online teaching and learning.</i></p> <p><i>P6- Since there was no official professional development support available to us to prepare us with the use of technology in the classroom and online teaching pedagogies, we ended up forming a learning team of accounting lecturers to help one another and share information and best practices. During Covid19, teaching and learning improved greatly, to the great benefit of the students.</i></p> <p><i>P5- My interactions with other accounting lecturers to be supportive and share teaching methods improved thanks to learning</i></p>

		<p><i>communities. Second, I improved my learning practices because another key feature of learning communities gave me the space to explore, comprehend, and enhance teaching practices. As different lecturers presented their lessons, I took responsibility to learn their skills, and that has grown me as a lecturer. This opened my door to more collaborative teaching processes using technology. Discussions frequently focused on improving college procedures, continuously refining instructional practices, and connecting the curriculum to student learning needs</i></p>
	<p>Lack of training for online teaching</p>	<p><i>P6- The training was not about pedagogy -it was on the features of the technologies and a tick box activity for the institution, it was not interactive or hands on.</i></p> <p><i>P12- Yes, training was given, but it didn't include the pedagogical methods used to teach accounting online. In my opinion, the training offered served solely as proof that a training had been completed.</i></p> <p><i>P3 - A lack of planning and training has caused nearly half of us accounting lecturers to disregard the technology that is available in the classroom, potentially wasting the funds that were spent on data, WIFI, and other technology tools purchased for this purpose. I believe that regular training will boost my self-assurance and technical proficiency in the classroom. The instruction must be continual and extend to the many pedagogical techniques to be applied when teaching online</i></p>

**Table of Post Observation Interview Data Presentation**

<b>Questions</b>	<b>Theme</b>	<b>Interview Response</b>
<p><i>What technologies are used by TVET Accounting lecturers during online teaching and learning under COVID19 conditions?</i></p>	<p>Technology tools</p>	<p>P2 - <i>the following technologies, Moodle, laptop, wi-fi are used – I am not comfortable using technologies in accounting- I’m old school, when I’m stuck thankfully there is a technician available to assist and support us.</i></p> <p>P1- <i>I have a laptop, 3g, and a projector, but I still need to learn how to use the additional tools that are accessible, like taking virtual classes online and uploading learning materials to Moodle, the learner’s management system.</i></p> <p>P9- <i>Laptop, Internet, data projector, Impero software, Pastel, computer labs, and Wi-Fi are the technological resources I use to integrate technology into my accounting lessons.</i></p> <p>P4- <i>As I said in my questionnaire response, the technology tools I utilized were ones that I had access to, such as a laptop, the internet, a data projector, software programs like Impero and Pastel, computer labs, and WI-FI. And after receiving peer-to-peer support, I became better at using them.</i></p> <p>P10- <i>Laptop, Internet, data projector, Impero software, Pastel, computer labs, and WiFi are among the technological resources I use while teaching accounting.</i></p>
<p><i>How does the use of technologies influence</i></p>	<p>Influence on Instructional Design</p>	<p>P4- <i>I use online videos, to explain the accounting theory by way of easy example, students relate to the videos.</i></p>

<p><i>TVET accounting lecturers' pedagogy?"</i></p>		<p><i>P3- In order to make accounting terminology easier for my students, I always prefer PowerPoint presentations when we are learning online. I also share the same presentation with the students through WhatsApp.</i></p>
	<p><i>Influence on teaching</i></p>	<p><i>P5- Students will be able to select technologies to explore ideas, ask questions, gather, and distribute information and support each other in learning, work on solving problems, activities are linked to real life examples, thus they learn more readily.</i></p> <p><i>P7- With activities that are connected to real-world situations, students learn more quickly. Students will be able to choose technology to express ideas, ask questions, collect information, and assist one another while learning.</i></p>
	<p><i>Influence on personal growth</i></p>	<p><i>P12 - We shared our best practice to improve our content knowledge and pedagogy... it was a safe space to learn from each other at our own ...that benefited my planning.</i></p> <p><i>P2- My expertise and knowledge have grown as I design classes while using technology to teach accounting. I appreciate the help and guidance I've received in incorporating technology in the classroom very much.</i></p>
<p><i>What factor enable or constrain the TVET lecturer, use of technologies in their classroom?</i></p>	<p><i>Learning Communities</i></p>	<p><i>P2- Without the support of accounting lecturers, technology integration would have been a fruitless exercise. Regardless of how young my colleagues are compared to me. I have learned a lot from them. Together, we were developing our knowledge. I can now use online teaching</i></p>

		<p><i>approaches to enhance the learning of my students.</i></p> <p><i>P4- We were able to coordinate ourselves around a common objective thanks to learning communities' space and structure. They developed into very effective, aspirational communities. They established connections between accounting lecturers and made sure that we were willing to use the offered digital tools and systems. Our capacity to exchange information and learn from one another in these groups helps us make quick yet meaningful progress in accounting classes</i></p> <p><i>P7- Technology integration would not have been successful without the assistance and collaboration of the accounting lecturers. My peers and I worked well together to enhance my knowledge. I can now help my students understand concepts better by using online teaching approaches.</i></p> <p><i>P12- As a lecturer, I believed that the Learning Community made me into an educational hero. I was able to pay attention to my fellow accounting lecturers, the students, and the professional world, and I could see everyone engaged as a possible source of great information. I adjust and take on new techniques to assist students in learning in ways that are appropriate for them. To aid my students in making better judgments in their own lives and in society, I integrate education with their social, emotional, and intellectual development</i></p>
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	<p>Lack of training for online teaching</p>	<p>P8- <i>I needed training on how online teaching strategies and assessment has to unfold</i></p> <p>P11- <i>I would like training on how to use Moodle as a learner management system and present accounting lessons online.</i></p> <p>P12- <i>Since I didn't want to fail in my obligations of providing online instruction during COVID19 and shame myself in front of the kids, I had very poor confidence and morale due to the ineffective implementation of technological training. Without a clear plan, it was impossible for me to start using online instruction right away. Following the instruction for Microsoft Word, Outlook, and PowerPoint, I also had trouble understanding the teaching strategies. Pedagogical methods for teaching accounting online were not included. Designing online lesson plans and displaying accounting transactions online should have been covered in the training, in my opinion. Furthermore, it was essential to at least make the training coach accessible as I implement technology in the classroom. I also believed that training should consider assigning certain subject-matter experts to support training both before and after the session. This would have suggested that my colleagues and I had someone to turn to with questions and difficulties.</i></p> <p>P6- <i>I believe that in order to guarantee that the training is precise and pedagogically focused, it is crucial to define the process requirements, identify the lecturers' training requirements, and</i></p>
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		<i>carry out a technology and content analysis. It should have been carefully determined what training needs before starting online teaching and learning</i>
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## APPENDIX F: LETTER TO WESTERN TVET COLLEGE PRINCIPAL

 **UNIVERSITY OF  
KWAZULU-NATAL**  
INYUVESI  
YAKWAZULU-NATALI

Science  
School of Education,  
College of Humanities,  
University of KwaZulu-Natal,  
Edgewood Campus, KwaZulu Natal  
10 April 2022

Dear Principal

Westcol TVET College

### **INFORMED CONSENT LETTER**

My name is Mokgadi Machaka . I am a Masters (M.Ed in Technology) student from the Science and Technology Cluster, School of Education, College of Humanities, University of KwaZulu-Natal. I am conducting research titled 'Exploring the impact of the use of technologies during online teaching on accounting lecturers' pedagogy'.

A review of literature suggests that not much is known about how the use of technologies impacts Accounting lecturers pedagogy, during online teaching especially during the pandemic. This study therefore intends to address the gap identified in the literature in terms of the paucity of research on on how the use of technologies impact Accounting lecturers pedagogy.

#### **The objectives of the research are as follows:**

1. To ascertain what technologies are used by TVET Accounting lecturers during online teaching and learning under COVID19 conditions
2. To establish how the use of technologies impact TVET accounting lecturers' pedagogy
3. To determine the factor that enable or constrain the TVET lecturer; use of technologies in their classroom

Please note that:

Your participation is voluntary. If you do not participate you **will not be penalized in any way.**

- Your confidentiality is guaranteed as your inputs will not be attributed to you in person, but reported only as a population member opinion.  
The individual interviews (1 of each) will last for about 25-30 minutes and may be split depending on your preference.
- Any information given by you cannot be used against you, and the collected data will be used for purposes of this research only.
- Data will be in the form of interview transcripts, completed diary entries and completed portfolios, and will be stored in secure
- storage and destroyed after 5 years.
- You have a choice to participate, not participate or stop participating in the research. You will not be penalized for taking such an action.
- Your involvement is purely for academic purposes only, and there are **no financial** benefits involved. However, it is expected that you will gain insight into the impact of technologies on Accounting lecturers pedagogy during online teaching under Covid 19 conditions. .
- Thank you

Yours faithfully

ME Machaka (221121641)

Contact details are as follows:

Email: [mokgadim@westcol.co.za](mailto:mokgadim@westcol.co.za)

Cell phone: +0734459997

My supervisor is Dr. A. Singh-Pillay. She is a Lecturer in the School of Education, College of Humanities, Edgewood Campus, University of KwaZulu-Natal

My supervisor's contact details are:

Email: [Pillaya5@ukzn.ac.za](mailto:Pillaya5@ukzn.ac.za)

Phone number: +27844303795

You may also contact the Research Office at:

**University of KwaZulu-Natal**

**Humanities and Social Sciences Research Ethics**

**Govan Mbeki Centre**

**Tel +27312604557**

**Email: [HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za)**

Thank you for reading this document about this research.

## DECLARATION OF CONSENT

I ..... (Full names of participant) hereby confirm that I have been informed about the study titled 'Exploring the impact of the use of technologies during online teaching on accounting lecturers' pedagogy' by ME Machaka I understand the contents of this document and the nature of the research project, and I consent to the study being conducted at the Krugersdorp campus.

I understand the purpose and procedures of the study (add these again if appropriate). 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 voluntarily give permission for the study's activities to be digitally recorded. I give permission for my teaching portfolio and lessons to be used as a source of data.

My identity will not be disclosed and pseudonyms will be used to protect my identity

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at..... (provide details).

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

### **HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION**

**Campus**

Private Bag X 54001  
Durban  
4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557 - Fax: 27 31 2604609

Email: [HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za)

**Research Office, Westville**

**Govan Mbeki Building**

## APPENDIX G: CONSENT LETTER TO THE LECTURER



Science and Technology Cluster,  
School of Education,  
College of Humanities,  
University of KwaZulu-Natal,  
Edgewood Campus, KwaZulu Natal  
10 April 2022

Dear Accounting Lectuer

### **INFORMED CONSENT LETTER**

My name is Mokgadi Machaka . I am a Masters (M.Ed in Technology) student from the Science and Technology Cluster, School of Education, College of Humanities, University of KwaZulu-Natal. I am conducting research titled 'Exploring the impact of the use of technologies during online teaching on accounting lecturers' pedagogy'.

A review of literature suggests that not much is known about how the use of technologies impacts Accounting lecturers pedagogy, during online teaching especially during the pandemic. This study therefore intends to address the gap identified in the literature in terms of the paucity of research on on how the use of technologies impact Accounting lecturers pedagogy. Consent is sought to conduct research at the Krugersdorp campus of Westcol TVET college.

#### **The objectives of the research are as follows:**

1. To ascertain what technologies are used by TVET Accounting lecturers during online teaching and learning under COVID19 conditions
2. To establish how the use of technologies impact TVET accounting lecturers' pedagogy
3. To determine the factor that enable or constrain the TVET lecturer; use of technologies in their classroom

Please note that:

Your participation is voluntary. If you do not participate you **will not be penalized** in any way.

- Your confidentiality is guaranteed as your inputs will not be attributed to you in person, but reported only as a population member opinion.  
The individual interviews (1 of each) will last for about 25-30 minutes and may be split depending on your preference.
- Any information given by you cannot be used against you, and the collected data will be used for purposes of this research only.
- Data will be in the form of interview transcripts, completed diary entries and completed portfolios, and will be stored in secure
- storage and destroyed after 5 years.
- You have a choice to participate, not participate or stop participating in the research. You will not be penalized for taking such an action.
- Your involvement is purely for academic purposes only, and there are **no financial** benefits involved. However, it is expected that you will gain insight into the impact of technologies on Accounting lecturers pedagogy during online teaching under Covid 19 conditions. .
- Thank you

Yours faithfully

ME Machaka (221121641)

Contact details are as follows:

Email: [mokgadim@westcol.co.za](mailto:mokgadim@westcol.co.za)

Cell phone: +0734459997

My supervisor is Dr. A. Singh-Pillay. She is a Lecture in the School of Education, College of Humanities, Edgewood Campus, University of KwaZulu-Natal

My supervisor's contact details are:

Email: [Pillaya5@ukzn.ac.za](mailto:Pillaya5@ukzn.ac.za)

Phone number: +27844303795

You may also contact the Research Office at:

**University of KwaZulu-Natal**

**Humanities and Social Sciences Research Ethics**

**Govan Mbeki Centre**

**Tel +27312604557**

**Email: [HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za)**

Thank you for reading this document about this research.

## DECLARATION OF CONSENT

I ..... (Full names of participant) hereby confirm that I have been informed about the study titled 'Exploring the impact of the use of technologies during online teaching on accounting lecturers' pedagogy' by ME Machaka I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand the purpose and procedures of the study (add these again if appropriate). 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 voluntarily give permission for the study's activities to be digitally recorded. I give permission for my teaching portfolio and lessons to be used as a source of data.

My identity will not be disclosed and pseudonyms will be used to protect my identity

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at..... (provide details).

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

### **HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION**

#### **Campus**

Private Bag X 54001  
Durban  
4000  
KwaZulu-Natal, SOUTH AFRICA  
Tel: 27 31 2604557 - Fax: 27 31 2604609  
Email: [HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za)

**Research Office, Westville**

**Govan Mbeki Building**

## APPENDIX H: CONSENT LETTER TO THE STUDENT

### APPENDIX: STUDENT CONSENT



Science and Technology Cluster,  
School of Education,  
College of Humanities,  
University of KwaZulu-Natal,  
Edgewood Campus, KwaZulu Natal  
11 April 2022

Dear Student,

My name is Mokgadi Machaka . I am a **Masters (M.Ed in Technology)** student from the Science and Technology Cluster, School of Education, College of Humanities, University of KwaZulu-Natal. I am conducting research titled **'Exploring the impact of the use of technologies during online teaching on accounting lecturers' pedagogy'**. My study focuses on the practices of your accounting lecturer, who has agreed to participate in the study. Permission to conduct this study has been granted by the Deputy principal. of Western TVET college

The study involves the observation of 3 lessons. The focus of the observation will be on the teacher's practice and not on you. However, ethical research practices require that you are aware of the study and give your consent to participate. Please know that there are no risks or harm to you. The data will not be made public in any way and will only be used for research purposes. The school and teacher's identity will not be made public. In the event of any problems or concerns/questions you may contact the researcher at Email: [htmatienga@gmail.com](mailto:htmatienga@gmail.com) or my supervisor Dr. A. Singh-Pillay, at [pillaya5@ukzn.ac.za](mailto:pillaya5@ukzn.ac.za). or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details below. – Email: [HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za)

DECLARATION OF Assent -----  
-----

I (Name) ....., a student in year ...of study ...  
have been informed about the study, Exploring the impact of the use of technologies during  
online teaching on accounting lecturers' pedagogy' by ME Machaka

I understand the purpose and procedures of the study. I hereby give assent for lesson  
observations during my accounting lessons.

If I have any further questions/concerns or queries related to the study I understand that I  
may contact the researcher at [htmatienga@gmail.com](mailto:htmatienga@gmail.com) or Dr. Singh-Pillay at  
[pillaya5@ukzn.ac.za](mailto:pillaya5@ukzn.ac.za). If I have any questions or concerns about my rights as a study  
participant, or if I am concerned about an aspect of the study or the researchers 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](mailto:HSSREC@ukzn.ac.za)

I hereby assent to be present during lesson observations of 3 design and technology lessons:  
YES / NO

Signature of Learner -----

Date \_\_\_\_\_

## APPENDIX J: QUESTIONNAIRE

### Section A-Biographical Information - Profile of the Lecturer

#### PART 1: PERSONAL INFORMATION

Completing the Questionnaire below. Read the questions and answer them as honest to the best of your knowledge. Mark the answer with a tick (✓).

<b>Gender</b>	<b>Male</b>		<b>Female</b>	
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<b>Age</b>	<b>18-35</b>		<b>36-55</b>		<b>55 and above</b>	
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<b>Equity</b>	<b>Black</b>		<b>White</b>		<b>Indian</b>		<b>Coloured</b>	
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<b>Position</b>	<b>Lecturer</b>		<b>Senior Lecturer</b>	
-----------------	-----------------	--	------------------------	--

<b>Highest Qualifications</b>	<b>Certificate</b>		<b>National Diploma</b>		<b>Bachelor's Degree</b>	
	<b>Honours</b>		<b>Master's</b>		<b>PhD</b>	

	<b>NCV</b>	<b>Applied Accounting L2</b>		<b>Applied Accounting L3</b>		<b>Applied Accounting L4</b>	
		<b>Financial Accounting N4</b>		<b>Financial Accounting N5</b>		<b>Financial Accounting N6</b>	
		<b>Introductory Accounting N4</b>		<b>Cost and Management Accounting N5</b>		<b>Cost and Management</b>	

<b>Subject Offering</b>	<b>R191 NATED</b>					<b>Accounting N6</b>	
		<b>Computerised Financial Systems N4</b>		<b>Computerised Financial Systems N5</b>		<b>Computerised Financial Systems N6</b>	

<b>Lecturing Experience</b>	<b>0-5</b>	<b>6-10</b>	<b>11-15</b>	<b>16-20</b>	<b>21-25</b>	<b>26-30</b>	<b>Over 30</b>
<b>Tick</b>							

## **PART 2: GENERAL QUESTIONS**

- 2.1 What technologies do you use when lecturing accounting?
- 2.2 Which sections in accounting lends itself to the use of technologies
- 2.3 Are there, technologies you avoid using in your accounting lectures, please explain
- 2.4 Does the use of technologies in you lecture impact how to teach? Please explain
- 2.5 What factors enable your use of technologies in teaching accounting
- 2.6 What factors constrain the use of technologies in the teaching of accounting

## **Section B:**

### **PART 1: Information and Communications Technology (ICT) level of Knowledge and Skills for Accounting Lecturers**

- 1 Since you have been appointed as a lecturer, have you been trained to use ICT in your class?
2. What ICT-related abilities or competencies do you have?
3. How often do you use ICT in the teaching of accounting?
4. On a scale of 1-5 how confident are you in the use of technology in your accounting lesson, with 1 being poor and 5 being excellent.
5. what are the ICT do you use and why?
6. Are there particular sections in the accounting where ICT facilitate conceptual understanding, what are these section
7. Does the use of technologies in your lesson impact learners' interest and learning in accounting?
8. Has your accounting teaching strategies changed with the use of ICT, please elaborate. What enables and constrains your use of technologies when teaching accounting.
9. In a case where a student knows more than you when making use of ICT, how will you handle that?

### **PART 2: ICT Tools / Resources**

2.1 What types of ICT equipment do you have in your ACCOUNTING classrooms? (Hardware and software, e.g., projectors, laptops, radios, etc.)?

Follow-up Question: What are the students' reactions to these ICT devices? If there aren't any, how are ICT classes equipped?

2.2 What specific Learner Management System/Programme, if any, does the college have dedicated to online teaching?

2.3 In terms of the number of students enrolled, are there enough tools in the Accounting division?

2.5 To whom should you report, if any of these tools are faulty and does the responsible party attend to the problem?

2.6 Write in detail, how you would utilize these tools?

2.7 Are your college ICT gadgets (such as PCs) maintained and repaired when they break down?

If so, who oversees the repairs? If not, why are the computers not repaired regularly?

### **PART 3. Online Teaching and Learning using ICT (Curriculum Delivery)**

3.1 What is the importance of ICT in accounting lessons and what does it mean to you?

3.2 What, if any, expectations do you believe Department of Higher Education and Training and TVET College management have for you as an ACCOUNTING teacher in terms of ICT implementation?

3.3 What, if any, are some of the most common obstacles you encounter as an ACCOUNTING lecturer when it comes to teaching ICTs.

Follow-up Question. How have you been dealing with them? What do you believe should be done to address these issues?

3.4 What do you think are limitations of using ICT?

3.5 In what way can ICT be of help to lecturers with accounting subject content?

3.6 In what way would you prevent offending students when using ICT?

3.7 Do you do a thorough check of learning materials before distributing them to students online? Why?

3.8 In what way, if any, do you monitor student participation and activity during online lesson?

3.9 Can you assess students online? How often?

3.10 In your opinion in what way can ICT offer help to accounting students?

What ICT-related help/assistance does the Department of Higher Education and Training and the TVET College provide for you?

Based on your answer: Is the aid you've received adequate for your needs? Have the ACCOUNTING department's ICT-related learning activities improved as a result of the assistance?

3.11 What difference, if any, have you noticed in student's grasping of content when making use of ICT to explain certain work assigned to them. For example, using a video.

3.12 In what way, if any, do you maintain the attention of student during accounting lessons when making use of ICT?

3.13 What suggestions do you have for improving ACCOUNTING support for ICT integration?

## INTERVIEW QUESTIONS

1. What technologies do you use in your teaching of accounting and why?

2. Does the use of technologies impact learners'

Participation?

Achievement of learning outcomes?

Academic performance?

3. How does the use of ICT influence TVET accounting lecturers' pedagogy?

## OBSERVATION SCHEDULE

Are technologies used in teaching account?

What technologies are used?

Frequency of use?

In which accounting topics/sections are technologies used?

How are these technologies used to enhance students' learning