ONLINE TEACHING AND LEARNING DURING CORONAVIRUS-DISEASE-2019: A CASE OF THE DEPARTMENT OF CRIMINOLOGY AND CRIMINAL JUSTICE LECTURERS' PERCEPTIONS AT THE UNIVERSITY OF LIMPOPO

BY

RIVONINGO NYIKO MSISINYANE

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SUPERVISOR: PROFESSOR J BARKHUIZEN

CO-SUPERVISOR: PROFESSOR W MALULEKE

2024

DECLARATION AND COPYRIGHT

I, Rivoningo Nyiko Msisinyane, declare that the dissertation entitled ***"Online Teaching and Learning during Coronavirus-Disease-2019: A case of the Department of Criminology and Criminal Justice Lecturers' perceptions at the University of Limpopo"*** submitted to the University of Limpopo, for the degree in Master of Arts in Criminology, has not been previously submitted by me or any other person for a degree at this or any other university: it is my own original work and that all the sources I have used have been acknowledged by means of complete references. I understand and adhere to the University of Limpopo (UL) Code of Ethics.

…… …….

Mr RN Msisinyane Date

DEDICATION

This study is dedicated to my mother, **Mercy Msisinyane**; my late father, **Julias Shirinda**, and my sibling, **Musa David Msisinyane**.

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ABSTRACT

The outbreak of Coronavirus Disease-2019 (COVID-19) brought some changes in the Department of Higher Education and Training (DHET), where South African Higher Education Institutions (HEIs) had to quickly transition to online Teaching and Learning (T & L). This was accompanied by various advantages and disadvantages. Therefore, this study was conducted to explore perceptions of Criminology and Criminal Justice lecturers' on online T & L during COVID-19. This study adopted a qualitative research approach, guided by an exploratory research design. A non-probability, purposive sampling method was employed to select the participants of this study. For data collection, semi-structured Key Informant Interviews (KIIs), distributed through Google Forms, were used. The inductive Thematic Content Analysis (TCA) was used for data analysis, which assisted in categorising themes that emerged from the qualitative data collected. This study employed Connectivisms Learning Theory (CLT) as its theoretical framework to best analyse online T & L during COVID-19 by exploring the perceptions of lecturers in the Department of Criminology and Criminal Justice.

The study was guided by this aim: To analyse the perceptions of lecturers' towards online T & L during COVID-19 using UL's Department of Criminology and Criminal Justice as a case study and by the following objectives: The readiness of lecturers to offer online T & L at UL, the effects of online T & L on lecturers' during COVID-19 at UL, the quality of online T & L methods, as offered by lecturers' during COVID-19 at UL, the challenges of online T & L faced by lecturers' during COVID-19 at UL and strategies can be implemented to better online T & L during COVID-19 at UL.

The findings of the study revealed that online T & L was a mandatory intervention in ensuring continuity of education. However, the quick transition was accompanied by challenges, including but not limited to, examination-related issues, insufficient resources, technological difficulties, lack of preparedness for lecturers to offer online T & L, internet connectivity issues, poor attendance, and low-quality training programmes. Some findings highlighted that UL played a significant role through the provision of electronic devices (laptops) and data bundles and implemented refresher courses to address the issue of readiness and technological hurdles.

Based on the identified challenges and the suggestions to improve of online T & L, the following recommendations were made: there is a need for comprehensive training programmes for both lecturers and students on the utilisation of online T & L tools, the

university must invest in technological infrastructure essential for the success of online T & L, there must be clear policies and guidelines for online T & L; furthermore, the university must devise strategies to improve class attendance, come up with innovative online teaching methods, electronic device accessibility, and mental health support to mitigate the effects of online T & L; awareness campaigns aimed at preventing academic misconducts (Plagiarism and cheating in examinations/tests) to maintain good quality of online methods must be considered, and lastly, the institution must advise the academic community to venture into online T & L and acquaint themselves with technologies necessary for the effectiveness of online learning.

Keywords: *Criminology and Criminal Justice**,** Coronavirus Disease-2019, Learning Management System, Lecturers', Online Teaching and Learning, Perceptions, University of Limpopo, Higher Education Institutions.*

LIST OF ACRONYMS AND DESCRIPTIONS

ACRONYMS	DESCRIPTIONS
4IR	Fourth Industrial Revolution
CLT	Connectivism Learning Theory
COVID-19	Coronavirus Disease 2019
DHET	Department of Higher Education and Training
DREC	Departmental Research Ethics Committee
FHDC	Faculty of Higher Degrees Committee
GIS	Geographic Information System
HEIs	Higher Education Institutions
ICT	Information and Communication Technology
KIIs	Key Informants Interviews
LMS	Learning Management System
MOOCs	Massive Open Online Courses
NGO	Non-governmental organisation
NUL	National University of Lesotho
PDE	Provision of Distance Education
PSET	Post-School Education and Training
SAG	South African Government
SARS	Severe Acute Respiratory Syndrome

SSSREC	School of Social Sciences Research Committee
T & L	Teaching and Learning
TREC	Turfloop Research Ethics Committee
UKZN	University of KwaZulu Natal
UL	University of Limpopo
UNISA	University of South Africa
WHO	World Health Organisation
WI-FI	Wireless Fidelity

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CHAPTER ONE

GENERAL ORIENTATION

1.1. BACKGROUND AND MOTIVATION

The COVID-19 outbreak and its subsequent spread had extremely negative effects on many countries (Selelo & Manamela, 2022). However, because of the disparities in economic development, not all nations experienced the same difficulties, particularly during the initial stage of COVID-19 (Selelo & Manamela, 2022). The COVID-19 surge prompted many countries to put in place preventative measures, which included, but was not limited to, handwashing, wearing masks, restricting large gatherings, and social distancing (Reimers & Schleicher, 2020). In the educational space, COVID-19 impeded the dissemination of T & L practices globally (Mashilo & Selelo, 2021). Consequently, COVID-19 forced HEIs globally to deviate from contact learning instruction and blended learning into the adoption of full online T & L (Jinlei, Ying & Baohui, 2012; Motala & Menon, 2020).

The South African government (SAG) implemented a national quarantine in an effort to avert the spread of COVID-19, followed by the closing of all T & L educational sectors (Malatji, Masuku & Baloyi, 2021). Furthermore, the SAG instructed HEIs to perform their sessions electronically to refrain students and educators from coming in contact with COVID-19 (Malatji, Masuku & Baloyi, 2021). In this sense, the priority for academic institutions was undergirded by the mantra: “Save an academic year, save lives”; hence, DHET initiated the multimodal T & L model, which was subjected to all the South African universities, elementary schools, secondary schools, and colleges (DHET, 2020).

Furthermore, Mashilo and Selelo (2021) state that the COVID-19 pandemic exposed the downside of HEIs and the need for additional technological advances for educators and students. Reimers (2020) points out that the South African HEIs had no alternative but to introduce various multimodal T & L methods. Therefore, South Africa’s DHET urged universities to implement online T & L Methods (DHET, 2020).

Other approaches to T & L exist, such as traditional learning, which is a pedagogical technique used in a classroom setting where an instructor serves as a facilitator and

manages the flow of information. Another method of T & L is called blended learning, which involves combining classroom instruction and online instruction (Garrison & Kanuka, 2004).

This study was guided by Singh and Thurman's (2019) definition of online T & L. Singh and Thurman (2019) present that online T & L involves synchronous or asynchronous communication using a variety of devices (Mobile phones, and laptops, amongst others) that are connected to the internet. In this study, the researcher discusses the perspectives of the Department of Criminology and Criminal Justice lecturers' (Staff) regarding virtual T & L during COVID-19. This was important to explore because online T & L is completely a new phenomenon to some of the lecturers and students at UL (Selelo & Manamela, 2022).

Online pedagogies, on the other hand, have been found to have significant advantages for improving the performance or grades of students and the ability to continue academic programmes following the devastating COVID-19 outbreak (Gonzalez, De La Rubia, Hincz, Comas-Lopez, Subirats, Fort & Sacha, 2020). Gonzalez *et al.* (2020) further elucidate that the performance from the students has significantly improved in comparison to previous years because of the implementation of online learning as an alternative method for T & L.

Moreover, Gonzalez *et al*. (2020) provide that online T & L increases students' independence and self-determination while also enhancing lecturers' pedagogical efficacy. In addition to the T & L methods, the SAG and universities have advocated blended learning, which combines in-person instruction with virtual education, because of the implications of COVID-19 as the primary focus of T & L programme in the post-COVID-19 period (Odeku, 2021).

The purpose of online T & L was to facilitate academic activities remotely through electronically network technologies (Chang, Pierson, Koh, Gerardin, Redbird, Grusky & Leskovec, 2021). On this pursuit, the researcher analysed the perceptions of University of Limpopo (UL) lecturers' towards online T & L during COVID-19 making use of the Department of Criminology and Criminal Justice as the case study. The study's literature was influenced by the following objectives: (a) Determine the readiness of lecturers to offer online T & L at UL, (b) Analyse the effects of online T & L on lecturers during COVID-19 at UL, (c) Assess the quality of online T & L methods, as offered by lecturers during COVID-19 at UL, (d) Assess the challenges of online T & L faced by lecturers during COVID-19 at UL, and, (e) Propose strategies that can be implemented to better online T & L amid COVID-19 at UL.

1.2. PROBLEM STATEMENT

Although COVID-19 was a concern in all departments in South Africa, the HEIs were overwhelmingly impacted by the tragedy it brought (Mosteki, Maluleke & Barkhuizen, 2021). Motseki *et al.* (2021) further indicate that COVID-19 undoubtedly changed how T & L used to take place in most South African tertiary institutions. Moreover, Motseki *et al.* (2021) outline numerous challenges associated with online learning, including student, educator, and content issues. The researchers (Motseki *et al*, 2021) claim that student involvement and commitment in online learning have been difficult for many rural-based institutions; they have also been challenging for educators to transition from offline to online T & L, change their teaching methodologies, and maintain time management when conducting online classes. Furthermore, students are said to have lost significant learning opportunities because of inadequate use of digital tools, poor internet accessibility, and Wireless Fidelity (Wi-Fi) connection problems.

Mosteki *et al.* (2021) showcase that the typical difficulties that faculty and students encounter when participating in include technical issues, the unavailability of devices, the cost of data, difficulties with online assessment, and the lack of infrastructure. Even though some of the challenges listed above have been addressed, much work remains to be accomplished. Because the switch from in-person to online instruction meant that all the conventional education programmes had to be restructured to fit the current T & L practice. Be that as it may, the DHET (2020) suggest that South African universities should provide crucial equipment and guidance for students and staff members to enhance virtual sessions during and post deadly COVID-19.

Moreover, the dissemination of resources was another aspect that sparked doubts regarding the suitability of online T & L, particularly the allocation of laptops and data for online learning, which was met with dissatisfaction among the students (Malatji, Masuku & Baloyi, 2021). Seemingly, some students did not receive electronical devices on time, and some did not receive them at all. In some universities, students and staff members were not well-prepared for online learning to effectively apply the multimodal T & L model due to its challenges and effects and as such had concerns in relation to the standard of instruction since the implementation of online T & L (UL, 2020). Therefore, it was imperative that an investigation be conducted to unravel challenges faced by staff members (lecturers) during online T & L at UL. It was of utmost importance to conduct this

research because there are more students enrolled at UL, particularly in the faculty of humanities as the largest than the university classroom venues can accommodate and although the faculty practices both theoretical and practical applications, most disciplines like Criminology focus more on the theory-based curriculum. Therefore, because of these circumstances, they were forced to apply online T & L as an alternative.

1.3. STUDY AIM

Folayan (2019) indicates that the aim of the study pertains to the researcher's general intention and the desired outcome of the project. It is the purpose of the research and what the investigator hopes to learn. For this reason, an aim is often wide. Although it is ambitious, it is possible. By the end of the project, it represents what and/or where the researcher hopes to be. Gull (2023) also provides that study aims are general assertions that express the overall objectives and intended results of a research project. These objectives give a thorough summary of the study, outlining its goals and addressing the long-term desires and goals related to the research topic. DiscoverPhDs (2022) mentions that study aims to serve as the main objective or primary purpose of an investigation. Therefore, the aim of the study was to *'analyse the perceptions of lecturers' towards online T & L during COVID-19 using UL's Department of Criminology and Criminal Justice as a case study'.*

1.4. STUDY OBJECTIVES

Ryan (2023) provides that study objectives specify the goals of a research project and explain the reasoning behind carrying out the study. In line with this viewpoint, Wanjonhi (2014) defines objectives as attainable goals that fall within the scope of a research project. Moreover, Wanjonhi (2014) reveals that study objectives establish the precise questions and approaches for gathering and analysing data, they are essential to the formation of the study. In a similar assertion, Jain (2023) describes study objectives as clear, concise statements that capture the aim and objectives of a particular study. Furthermore, Jain (2023) highlights that these objectives specify the researchers' goals as well as the insights or discoveries they hope to gain from the study.

The objectives of this study were designed as follows:

- To determine the readiness of lecturers to offer online T & L at UL.
- To analyse the effects of online T & L on lecturers during COVID-19 at UL.

- To assess the quality of online T & L methods, as offered by lecturers during COVID-19 at UL.
- To assess the challenges of online T & L faced by lecturers during COVID-19 at UL.
- To propose strategies that can be implemented to better online T & L during COVID-19 at UL.

1.5. DEFINITIONS OF THE KEY CONCEPTS

Keywords are defined in this section, which guided this study, relying on various authors' views on each concept to possibly offer the concepts' adequate applications to this study.

1.5.1 Blackboard Learn

Boshielo (2014) defines the 'Blackboard Learn' as an open and flexible online tool for online T & L and for community building in exchange of knowledge, which centres on student achievement. Livingstone (2012) describes 'Blackboard Learn' as a system for managing courses and educational materials that were developed using third-generation technology by combining online and in-person instruction through hybrid courses. Bradford, Porciello, Balkon and Backus (2007) are also of the view that the 'Blackboard Learn' is an online tool that enables teachers to carry out efficient online instruction, accommodate students' needs, record communication policies, and assignment delivery, and provide feedback. Edtechimpact (2023) reports that the 'Blackboard Learn' is an online learning platform and LMS that features customisable open styles and, ascendable design that facilitates the integration of student information systems, and verification procedures.

1.5.2 Coronavirus Disease-2019

Bender (2020) defines COVID-19 as an illness brought on by a novel coronavirus strain. In line with the mentioned perspective, Ghosh (2020) describes COVID-19 as a virus caused by a new coronavirus variation known as the Severe Acute Respiratory Syndrome (SARS). This virus was first discovered in Wuhan City, Hubei Province, China as a respiratory illness.

In addition, WHO (2021) presents that COVID-19 is a transmissible illness that is spread by contact with contaminated surfaces, sneezing, coughing, and salivary droplets. However, Selelo and Manamela (2022) classify COVID-19 in South Africa as an emergency or catastrophe in accordance with the Disaster Management Act (57 of 2002).

1.5.3 Higher Education Institutions

According to Jica (2000), HEIs encompass all forms of post-secondary education, including training and research guidance provided at educational entities like universities, which are recognised as HEIs by governmental authorities. A similar point is made by Alemu (2018), who states that HEIs include universities, which are a subset of higher education. Furthermore, HEIs represent a comprehensive range of all post-secondary or tertiary institutions. Olaniyan and Graham (2014) define HEIs as encompassing a wide range of educational offerings provided by postsecondary institutions. Therefore, these institutions grant various qualifications upon completion of their respective courses.

1.5.4 Online Teaching and Learning

Online T & L is the process of educating people through the Internet using a variety of tools, including webinars and online educational platforms like Microsoft Teams, Zoom, Skype, and Google Meet (Selelo & Manamela, 2022). This definition aligns with the perspective of Sadiku, Adebo and Musa (2018), as they describe online T & L as an educational approach conducted over the Internet. The researchers (Sadiku, Adebo, & Musa, 2018) emphasise that online T & L is the transfer of knowledge, skills, values, and methods, citing Massive Open Online Courses (MOOCs). LmsHero (2023) indicates that online T & L is an instructional activity that makes use of electronic mobile devices to engage students and impart knowledge.

1.5.5 Online teaching

Gegone (2020) defines online teaching as instructional activities carried out through the Internet; it is also referred to by other names, like e-teaching or online instruction. Teachmint (2023) defines online teaching as a process of instructing students through Internet-based platforms using webinars, video conferencing, live classes, and other online resources. In addition, Teachmint (2023) highlights that the student-centred approach of online teaching raises the degree of participation and involvement among students in virtual T & L environments. Lev (2023) draws an inference from Gegone (2020) by stating that online teaching is an instructional approach in which students and teachers communicate online.

1.5.6 Online learning

Sadiku *et al.* (2018) state that ‘online learning’ serves as a form of remote learning that includes digital learning, eLearning, and web-based learning that is delivered over the Internet using web-based resources and activities. Moreover, online learning is defined by Teachmint (2023) as an instructional strategy that takes place online and makes use of a variety of platforms and technologies to deliver lectures, assignments, and tests. Therefore, online education can be synchronous, allowing students and lecturers to communicate instantaneously, or asynchronous, letting students access the material at their convenience. Additionally, it may take on a hybrid format that blends online and in-person content. Top Hat (2020) showcases that online learning refers to a teaching strategy in which individuals participate in a completely virtual setting, also referred to as a web-based setting for learning. This method creates connections between students with distinct points of view and experiences.

1.5.7 Learning Management System

LMS is a piece of software that automates the scheduling and management of training sessions (Boshielo, 2014). This system records student data, maintains course catalogues, supervises the registered user’s log-in process, and produces reports for management. Turnbull, Chugh, and Turnbull, Chugh, and Luck (2019) state that LMSs are online learning technologies designed especially for the manufacturing, organisation, and provision of course materials. LMSs play a crucial role in improving T & L experiences, allowing for the effective delivery of instructions and electronic resources in a collaborative environment. Furthermore, they enable teachers to focus on creating purposeful educational activities (Kattoua, Al-Lozi & Alrowwad, 2016).

Kattoua, Al-Lozi and Alrowwad (2016) state that an LMS serves as the infrastructure responsible for delivering and managing instructional content. It establishes, evaluates, and tracks the progress of both individual and organisational learning or training objectives. It also gathers information to oversee an organisation’s entire learning process. On top of that, Gilhooly (2001) emphasises that an LMS manages skills gap analysis, tracking, reporting, registration, administration, and content delivery.

1.5.8 Lecturers

Dictionary Cambridge (2024) describes lecturers as qualified individuals who instruct students on a particular subject at the post-secondary level or teach at colleges or universities. Merriam-Webster (2024) defines lecturers as professionals or academics

whose main responsibilities are to mentor, assess, and teach students in compliance with pertinent training package requirements or curriculum. Moreover, lecturers carry out professional responsibilities and tasks associated with giving instruction. Indeed (2024) states that lecturers are workers hired by HEIs to perform teaching, research, and administrative functions. Indeed (2023) further presents that lecturers' jobs are not limited to teaching, supervising, and mentoring, but they are crucial to the administration of academic departments and institutions as well as the admissions process.

1.6. STUDY SIGNIFICANCE

According to DiscoverPhDs (2020), the significance of the study is outlined in a written justification for why the investigation is required. It serves as a defence of the study's significance and provides emphasis on its effect in the field of study, its role in producing new knowledge, and the advantages it offers to others (DiscoverPhDs, 2020). DiscoverPhDs (2020) also indicates that the significance of a study concerns the possible importance, relevance, or influence of the research outcomes. It outlines how the study fills in knowledge gaps, advances a particular field of study, or offers new perspectives.

Hiebert, Cai, Hwang, Morris and Hohensee (2022) suggest that the concepts of implications, importance, and contributions are interchangeable when assessing the significance of the study. In other words, a study is deemed noteworthy if it provides a valuable addition and holds substantial results. Makel, Hodges, Cook and Plucker (2021) state that the determination of a study's significance involves the formulation of research questions and hypotheses, which the researcher then carefully attaches to a long-term objective of widely shared significance. Listed below are the organisations for which this study is intended to be useful:

1.6.1 Academic community

The findings will be accessible in the UL library, benefiting the broader academic community. This data could be used to guide the development of curriculum and educational initiatives, and it would also be a useful source for scholars and students looking to conduct further research. The goal of the study is to improve academic understanding of online T & L by providing information on how stakeholders in education view and react to it, as well as recommendations for how to make it better.

1.6.2 Industry

This study might benefit the South African HEIs and the DHET. The study intends to enable the mentioned departments to possess appropriate T & L capabilities and curriculum development capabilities. They might also acquire more knowledge, and improved skills, methods, and techniques in addressing T & L. This research might also contribute to a higher competency level during the distribution and collection of questionnaires in relation to the study in general. The data could be utilised to create training programmes in the future that might produce more professional academics.

1.6.3 South African society

The results of the study might increase meaningful graduate rates because the HEIs might be better equipped to deal with online tools and platforms for T & L. This study envisages empowering South Africa's communities with knowledge and stimulating their thinking and reasoning about T & L practices and curriculum development initiatives.

1.7. CHAPTER PROGRESSIONS

- **Chapter One: General orientation**

This chapter presented the general orientation of the study, which constituted of the background and motivations, research problem, study aim and objectives, definitions of the key concepts, study significance and chapters' progression.

- **Chapter Two: Literature review and theoretical framework**

In this chapter, the relevant literature that were applicable to the study were discussed. And the theoretical framework on online T & L that guided the study was also outlined.

- **Chapter Three: Research design and methodology**

This chapter outlined the research methodology employed in this study. The research approach, study location, study population, sampling procedures, data collection methods, data analysis, methods to ensure trustworthiness and ethical considerations were discussed.

- **Chapter: Four: Data presentations, analysis and discussions**

In this chapter, the data were presented, analysed, and discussed based on the responses of the participants, which were corroborated by reviewed literature.

- **Chapter Five: Summary, conclusion, limitations, and recommendations**

This chapter summarised the findings of the study based on the information provided in Chapter Four.

1.8. SUMMARY OF THE CHAPTER

This chapter provided an overview of the study's orientation, including its background and motivations, research problem, study aim and objectives. This chapter further provided definitions of key concepts, the study's significance and chapters' progression. In the next chapter (Two), a literature review and theoretical framework are presented.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK ON ONLINE TEACHING AND LEARNING DURING CORONAVIRUS-DISEASE 2019

2.1. INTRODUCTION

This chapter provides a detailed explanation of the analysis of online T & L during COVID-19 while exploring lecturers' perceptions from the Department of Criminology and Criminal Justice at UL. In this study, the researcher picked a predetermined number of studies concerning COVID-19 and online T & L from previous studies and the focus was on what other authors have written about lecturers' perceptions/reactions to the adaptation of online T & L. This predetermined number of studies focus on the perceptions of lecturers towards online T & L during COVID-19, lecturers' readiness for online T & L, the effects of online T & L, the quality of online T & L methods, as offered by lecturers during COVID-19 at UL, the challenges of online T & L, and the proposed strategies that can be implemented to better online T & L. Furthermore, the Connectivism Learning Theory as the study's theoretical framework was also featured in this chapter.

2.2. PERCEPTIONS OF LECTURERS TOWARDS ONLINE TEACHING AND LEARNING DURING CORONAVIRUS DISEASE-2019

This section of the literature review provides insights into the lecturers' perceptions of online T & L during COVID-19. The literature highlight both positive and negative challenges faced by lecturers in the transition to online T & L. The challenges such as internet connectivity, technological access, burnout, and concerns about the quality of education delivery emerged as a critical consideration and the LMS functions on online T & L are highlighted.

2.2.1 Lecturers' perceptions on the advantages of online Teaching and Learning during Coronavirus-Disease-2019

The study conducted by Salema (2023) states that some lecturers had positive perceptions regarding the use of online T & L during COVID-19. Therefore, this indicates that the

utilisation of online T & L was imperative and unavoidable for universities. Moreover, the researcher (Salema, 2023) asserts that students' satisfaction concerning online T & L is pivotal for the universities to progress in this new era of online education. The study further suggests that many lecturers agreed with the claim that online T & L saves time and money. Herguner, Son, Herguner, Sinem and Donmez (2020) suggest that stable Internet connectivity play an important role in online T & L. Salema (2023) agrees with the assertion made by Herguner *et al.* (2020), noting that most of the participants (lecturers) conceded that online education requires strong Internet access for it to prosper.

Despite the challenges associated with online T & L, Girik (2020) found that students in the United Kingdom (UK) colleges perceived online learning during COVID-19 as outstanding and effective. On that note, Salema (2023) discovered that 84% of lecturers perceived online T & L as effective and convenient. The study further disclosed that the Coronavirus affected a lot of activities in the universities but because of the application of online T & L, many of the activities were eased (Salema, 2023). The findings corroborated the results of Barrett-Fox, Bayne, Cooper and Espinosa (2020), that COVID-19 shaped all forms of education dissemination into the more proficient online T & L. Zalat, Hamed and Bolbol (2021) stated that a significant portion of the participants in their study affirmed the perceived effectiveness of online T & L amid COVID-19. The medical staff in the study acknowledged the value of online learning for enhancing and advancing the T & L process (Zalat, Hamed & Bolbol, 2021).

Mahlaba and Mentz (2023) assert that some lecturers perceived online T & L differently because they had previous experience with online T & L. Moreover, their ability to adapt depended on whether they were familiar with technologies or not, which had a significant bearing on their perceptions of online T & L. Mahlaba and Mentz (2023) acknowledge that most lecturers experienced more difficulties concerning online T & L than positive outcomes. However, lecturers who had comprehensive experiences with online or distance learning were said to have adapted easily. In addition, lecturers who had already been utilising or intending to utilise online learning or blended learning found the transition to online T & L to be less challenging (Mahlaba & Mentz, 2023). Lloyd, Byrne and McCoy (2012) share that lecturers who were not technologically savvy encountered an immense difficulty with online learning. These challenges were caused by the lecturers' comfortability with face-to-face T & L and their unwillingness to self-direct and adapt to the 'new normal'. However, many lecturers were comfortable and willing to adapt to the transition (Mahlaba & Mentz, 2023).

2.2.2 Lecturers' perceptions of the disadvantages of online T & L during Coronavirus-Disease-2019

Salema (2023) highlights that some of the common obstacles associated with online T & L that were revealed by the lecturers, included: Insufficient resources, bad Internet, lack of computers/devices, lack of technical expertise, negative attitude towards online T & L, inadequate teaching strategies for online courses, inadequate infrastructure, lack of evaluation of online courses, and power outages, to name the few. One of the lecturers in a study by Salema (2023) acknowledges that staff members were caught off-guard by the transition from face-to-face to online T & L. Furthermore, inadequate resources and poor Internet connectivity were reported to be a challenge (Salema, 2023).

The World Bank (2020) discovered similar challenges as Salema (2023) by stating the difficulties linked with online T & L, which included low student performance, lacking social aspects, low participation, high rates of dropouts, lower completion rates, poor retention rates, little or no supervision, poor connection to the Internet, electricity outage, and restricted access to digital devices. To redress those challenges, the World Bank (2020) mentioned the need for more advanced infrastructure, staff trusting in themselves, preparedness, and Information and Communication Technology (ICT) to facilitate integrated instruction. This suggests that greater caution is needed when using online learning if the desired results are to be obtained during its T & L process (Salema, 2023). Senol, Lesinger and Caglar (2021) found that the lecturers reported a great number of students who often experienced Internet connectivity problems during class sessions. Moreover, some students, due to inexperience with the use of online learning platforms, had difficulties in accessing recorded lectures through the LMS, especially students who used their cell phone devices for online T & L.

Mahlaba and Mentz (2021) stipulate that a number of lecturers perceived the shift to T & L offered fully online as difficult, leading to feelings of frustration and stress. Similarly, Bozkurt, Jung, Xiao, Vladimirschi, Schuwer, Egorov, Lambert, Al-Freih, Pete, Olcott and Rodes (2020) contend that the vast change to online T & L required a lot of time and had increased workload for lecturers. In addition to obstacles, Mahlaba and Mentz (2023) report that lecturers encountered a few challenges, such as inconsistent Internet access, a lack of support and training in using the tools at their disposal, a lack of advanced technologies and software, and difficulties in interacting with students. However, the

researchers (Mahlaba & Mentz,2023) emphasise that some lecturers found a way to overcome the obstacles of migrating to online T & L.

The results from Shelton (2017) and Watermeyer, Crick, Knight and Goodall (2021) show that lecturers were uncertain and unqualified to use technology for online T & L. Moreover, Shelton (2017) and Watermeyer *et al*. (2020) mention that some students were living in places with very poor Internet access, which prevented them from communication and engaging in their studies. Mahlaba and Mentz (2023) indicate that some lecturers voiced their concerns about their students committing academic fraud or violating the ethical codes of the university by submitting work that was not their own (copying and plagiarism). On the other hand, a few lecturers saw the lack of laboratory practice as an extra challenge that was hampering the success of online T & L (Mahlaba & Mentz, 2023).

The findings of Mahlaba and Mentz (2023) demonstrate that lecturers with low levels of self-directedness, particularly those who had no prior online learning experience, encountered challenges when they had to switch to online T & L. The researchers (Mahlaba & Mentz, 2023) concur with Watermeyer *et al.* (2020) who state that educators were forced to switch to online learning due to the COVID pandemic. This shift, especially for those lacking strong self-direction, led to a challenging and inefficient work environment. Sasere and Makhasane (2020) indicate that COVID-19 forced lecturers to shift from contact to online T & L; thus, most lecturers in developing nations had insufficient online T & L skills to transition with ease. Moreover, Sasere and Makhasane (2020) deduce that the dependency of lecturers on contact instruction is the reason why many educators encountered these challenges.

Lecturers and students reported having experienced some stress and devastation because of the migration to online T & L mode (Saadé, Kira, Mak & Nebebe, 2017). Therefore Orebi, Shahin, Awad, Allah, Hegazy, Alshakhs, Alaithan, Alhindi and Kabbash (2023) share that a considerable number of lecturers experienced high levels of burnout and anxiety due to online T & L. Fynn and van der Walt (2023) also agree that staff members in universities showed signs of emotional exhaustion because of the workload and the complexity of online T & L, as it was still a new way of instruction for some lecturers. These results are consistent with those of Hoffman, Garner, Koong, and Woodward (2020) and indicate that 40% of staff members experienced burnout. Additionally, senior lecturers and associate professors were more likely to experience burnout.

Moreover, pertaining to burnout, Naidoo-Chetty and Plessis (2021) point out that the administrative workload proved to be a significant predictor of burnout, whereas overall workload, tuition workload, and supervision workload were additional factors. Due to the shift to online, faculties were expected to take on more managerial and administrative responsibilities as higher education became more accessible and manageable within institutions (Naidoo-Chetty & Plessis, 2021). Although these expectations existed prior to the pandemic, it is probable that the transition to online T & L and the resulting planning and reporting obligations from the sudden change in circumstances increased the administrative burden, especially for senior lecturers and associate professors.

Bakker and Costa (2014) demonstrate that burnout has a negative impact on work engagement, which may have an adverse effect on productivity and the capacity to execute one's work effectively. It was imperative for HEIs to take measures during this time of online T & L and implement policies and procedures that would guide online or hybrid learning to reduce the exhaustion that the lecturers and students encountered (Orebi *et al*, 2023). This is consistent with Radmehr and Goodchild's (2021) findings that most students experienced high levels of anxiety as a result of the detrimental effects of online distance learning.

A study conducted by Zalat, Hamed and Bolbol (2021) found that many medical lecturers reported experiencing challenges and barriers such as difficulties in monitoring students and because of the staff unfamiliarity with the mode of learning, students took advantage of that loophole and committed academic misconducts such as cheating in the examinations. On a separate note, many challenges that have been recorded in this study regarding online T & L were because of the quick transition without the institutions having adequate resources to tackle any challenges related to online T & L mode

Another factor that was perceived as a hurdle to the success of online T & L was the preparedness of lecturers. Ugwuanyi, Okeke and Shawe (2021) share that most of the staff members were not emotionally and academically ready for online T & L. As a result, some lecturers tried to transition to online education; however, they endured a numerous difficulties in the process (Ugwuanyi, Okeke & Shawe, 2021). Furthermore, the lack of preparedness was associated with several elements such as poor network connectivity and lack of data bundles that needed to be in place for lecturers and students to participate in online T & Therefore, late submission of assessments and problems with virtual meetings occurred because of the barriers to online T & L (Ugwuanyi, Okeke & Shawe, 2021). Lecturers expressed that many students failed to demonstrate devotion to their

studies during COVID-19, which affected the effectiveness of online T & L (Purwanto, Asbari, Fahlevi, Mufid, Agistiawati, Cahyono & Suryani, 2020).

Online T & L has reduced interaction between lecturers and students, and as such, minimised learning opportunities (Hill & Fitzgerald, 2020). Rameez, Fowsar and Lumma (2020) assert that the shift to online T & L has had a substantial negative influence on higher education, affecting areas such as the delivery of online courses, assessment procedures, examinations, projects, theses, and dissertation supervision, and the use of online technologies for practical test administration. Moreover, Walker, Fontinha, Haak-Saheem and Brewster (2020) share that lecturers have shown that the change to an online delivery mode negatively affected them because the preparation needed for an online T & L environment was more than what was needed for in-person instruction. To further highlight the issue of scarcity of resources, Day, Chang, Chung, Doolittle, Housel and McDaniel (2021) concede that many lecturers and students did not have laptops, tablets, and cell phones necessary for online learning; as a result, their ability to conduct and participate in an effective online instruction was severely hindered.

Mabolloane's (2021) findings reveal that online T & L was adopted quickly as a new way of teaching and learning to some institutions that were unfamiliar with it. Therefore, there were instances where these institutions did not have enough or available technological resources. Another perspective was advanced by Rapanta, Botturi, Goodyear, Guàrdia, and Koole (2020), who point out that Egyptian HEIs encountered challenges due to the quick shift from contact education system to virtual T & L, primarily because of the inadequate technological equipment. Dempsey and Mestry (2023) assert that in cases where institutions could afford to adopt online T & L, numerous educators encountered challenges in conducting tests and examinations using digital platforms. In support, Ramsuraj (2021) concurs that unethical issues that had to do with examinations were prevalent in the adoption of online T & L. Hence, the study revealed instances of copying and students employing specialists to write the tasks offered online.

2.2.3 Lecturers perceptions on the epistemological access and the quality of online T & L during Coronavirus Disease-2019

Morrow (2007) suggests that epistemological access pertains to pedagogical approaches that facilitate deep understanding development by allowing academics (students and lecturers) to learn and engage substantively with concepts, theories, and knowledge. Bekker and Carrim (2021) indicate that lecturers complained about the strategies of online

T & L concerning the content of courses offered and argued that the online mode had not changed anything. Therefore, the lecturers thought online T & L had affected the line of communication in education (Bekker & Carrim, 2021). Bekker and Carrim (2021) also share that online T & L limited accessibility of lecturers to students, which hampered the effective dissemination of information or knowledge, thus affecting the epistemological access.

Bekker and Carrim (2021) highlight that the study of the lecturers demonstrated that the assessment offered in South African universities had not been limited; however, the format of the type of questions that were distributed to the students had changed. They reveal that in online T & L, multiple-choice questions were the most widely used evaluation format, which restricted the use of other forms of extended interactions with assessment methods that call for abilities like organising an academic essay with justifications. Therefore, this prevented students from receiving detailed feedback from formative assessments that pinpointed their areas of strength and offer specific recommendations for development.

Bakker and Carrim (2021) suggest that giving comments on student writing, for instance, offers a further chance for interaction between the instructor and the learner where the process of learning is prioritised over focusing on the product. Based on their findings (Bakker & Carrim, 2021), there appears to have been an overall decrease in formative assessments and an increase in summative assessments with questions that prioritised multiple-choice.

Wheelahan (2010) and Bakker and Carrim (2021) claim that the course material had not changed the kinds of learning tasks and activities that are available during the pandemic. However, lecturers' choices for instruction decreased as courses were moved online, which included developmental activities like debates and discussions alongside tutorials. Other findings by Bekker and Carrim (2021) reveal that the use of online T & L enhanced reading comprehension, formal assessments, writing for academic purposes, and the growth of developmental tasks. This is a promising finding that implies that epistemic access was still supported. On that account, staff and students who are prevailing under online education need to be investigated to better understand the techniques that they are using to carry out online T & L and distribute the knowledge effectively (Bekker & Carrim, 2021).

2.2.4 Lecturers' Perceptions on Learning Management Systems during Coronavirus Disease-2019

Gamede, Ajani and Afolabi (2022) acknowledged the importance of LMS in assisting the lecturers to effectively facilitate and manage student interaction online. However, lecturers and students in the study expressed concerns about the design of the LMS, specifically the design of discussion forums and how it negatively impacts lecturer-student and students-students interactions. The researchers (Gamede, Ajani and Afolabi, 2022) alluded that educational technology tools such as discussion in LMS should be facilitated and designed in a way that endorses online T & L and purposefully alters effective experiences of learning. Moreover, the study further expresses that students complained about tools on LMS that are not often used for learning such as portfolios, gradebooks, and online meeting tools.

Swart (2015) reports that the University of South Africa (UNISA) requires lecturers to know how to use LMS for T & L. However, there seemed to be no additional oversight to ensure that the LMS operates efficiently. Modise and Molotsi (2022) reveal that prior to the outbreak of the COVID-19, some academic institutions did not pressurise their lecturers to use the LMS. As a result, there was a digital divide between those who chose not to use the LMS for their T & L activities and the new or modern lecturers who were familiar with LMS.

2.3. READINESS OF LECTURERS TO OFFER ONLINE TEACHING AND LEARNING DURING CORONAVIRUS DISEASE-2019

This section highlights the readiness of lecturers to offer online T & L during COVID-19 pandemic, citing issues regarding the unpreparedness of lecturers related to technology, insufficient training, and lack of infrastructure. Moreover, it outlines the factors that affect the readiness of lecturers. The lack of knowledge and inadequate training of the lecturers to support online T & L are among the barriers to the success of online education. The literature on the correlation between the effectiveness of online T & L and the readiness of lecturers are covered in this section.

The position of the DHET, which is highlighted in the White Paper for Post-School Education and Training (PSET) concerning digital T & L, focuses mostly on the growth of satellite learning and online distance education, including online education in HEIs, as one of the forms of internationalisation (DHET, 2013). Equally, the DHET (2014) presents that

in the Policy for the Provision of Distance Education (PDE) in South African universities: In the context of an integrated post-school system, tertiary institutions should take steps to integrate the use of supporting ICT to improve the effectiveness of distance learning for students, and taking into consideration the readiness of students and instructors for distance learning. Mashau and Nyowe (2021) highlight that Internet connectivity is one of the major issues in distance learning affecting the readiness of institutions and this problem is particularly evident in rural-based institutions.

Mashau and Nyowe (2021) also stipulate that students display more characteristics of unpreparedness than lecturers (staff) for online learning; for example, the University of KwaZulu Natal (UKZN) has innumerable students who come from disadvantaged backgrounds who enter the university without adequate computer literacy. Therefore, many of them struggle with using LMS because of the lack of the necessary level of preparation to navigate it. Garg, Marji, Goyal and Ismail (2020) note that some universities were ill-equipped to deal with the rapid shift from contact-based instruction to online education methods. Hence, it appears that some lecturers and students were not prepared for online education as the sole alternative method of instruction. On that account, Moorhouse (2020) indicates that many students were worried about their academic future because they did not know what to expect in the online T & L method, and several students indicated signs of unpreparedness for online learning.

To the researcher's knowledge, in UL's Department of Criminology and Criminal Justice, most of the modules were venue-based and the Blackboard (LMS) was mostly utilised to post notes and announcements and prior to COVID-19, all class attendance was venue-based. Thus, virtual learning for some came as a concept that was outside of their experience and knowledge. On the basis of unpreparedness, Mbombi, Muthelo and Phukubye (2021) indicate that many staff members were unprepared for online learning because, in their study concerning online learning, 18.4% of staff members (lecturers) showed interest in online T & L platforms while 81.4% of academic staff expressed no interest in the T & L. With that said, Martin, Budhrani and Wang (2019) and Buabeng-Andoh and Yidana (2015) highlight that staff are very important in implementing virtual learning and its success. Therefore, the unpreparedness of staff negatively affects online T & L practices.

Makgahlela, Mothiba, Mokwena and Mphekgwana (2021) assert that from the beginning of the 21st century, governments, and institutions of learning ought to have realised the changes that the Fourth Industrial Revolution (4IR) was going to have on the traditional

culture of online education. Therefore, plans on how to introduce online teaching technologies while capacitating and training both staff and students on their use should have been rolled out a long time ago. Hence, when one compares universities in Europe, America and some parts of Asia, most institutions of learning in Africa were caught off-guard by the pandemic because they were not prepared for online T & L, as they lacked the infrastructure and access to technological devices (Mhlanga & Moloi, 2020). As a result, student education in rural Africa has been more impacted by the pandemic when compared to some developed parts of the world (United Nations Scientific and Cultural Organisation [UNISCO], 2020).

It is important to stress that the unpreparedness of instructors and students was commonly caused by the fact that various educational technological devices and systems that were deployed for pedagogy at the universities were very important but most of them were complicated on how to effectively use them (McLoughlin & Lee, 2007). Thus, they needed to be properly explained to the students and lecturers for effective use (McLoughlin & Lee, 2007). To address this problem, UL intervened by providing training workshops and empowering both lecturers and students to prepare them for online T & L (Chiramba, 2021).

2.3.1 Lecturers' perception on the readiness in adapting to online Teaching and Learning during Coronavirus Disease-2019

Dayal (2023) emphasises the importance of experience, adaptation and the preparedness in virtual T & L, revealing that only 16% of the lecturers in the study had prior experience in teaching online courses, while the remaining lecturers faced significant difficulties because of their lack of preparation for conducting online T & L. Moreover, many of the lecturers, according to the study by Almahasees *et al*. (2021), had formal training and prior experience of teaching online. In contrast, Zalat, Hamed and Bolbol (2021) showcase that online learning for their medical staff was perceived to have not been challenging given that they were using blended learning prior to COVID-19.

Zalat, Hamed and Bolbol (2021) participants indicate that the institutions provided intensive training to all staff members before officially implementing online T & L. However, other participants reported cases of insufficient training and voiced out that continuous training should not stop for effective adaptation, considering that online T & L is perceived to be a lasting feature. Ramsuraj (2021) proffers that there is a need for ongoing training of staff and students to advance the learning mode and avoid ethical challenges.

2.3.2 Factors that affected the Readiness in Transition to Online Education

2.3.2.1 Access to smart devices

It is indisputable that the availability of smart devices is essential for facilitating online learning (Dayal, 2023). Dayal's (2023) survey on educators shares that only 37% had access to smart devices, while the remaining educators shared devices with family members due to limitations in acquiring additional devices and the affordability of new ones. Lecturers acknowledge that they never faced many hurdles in acquiring devices such as laptops; however, most of their students relied on their smartphones for learning as they lacked access to other essential devices like laptops or computers while attending remotely (Kozma, 2011; Dayal, 2023). Dayal (2023) further notes that educators and students in higher education, particularly universities, had better access to smart devices such as laptops and desktop computers compared to their counterparts in elementary and secondary schools. Hence, they had a higher standard of online learning in HEIs.

2.3.2.2 Internet access

Internet access is the main essential responsible for the operation of online learning, However, Dayal's (2023) survey showcases that educators frequently struggle with connectivity because Internet accessibility varies greatly between areas. While many educators in the study confirmed having stable and dependable connectivity, some reported having inadequate Internet connections (Dayal, 2023). Dayal (2023) also reports that educators living in areas with inadequate Internet connectivity were not the only ones facing challenges in teaching online. Even those with strong Internet connections encountered difficulties due to the unreliable Internet connections of their students.

2.3.3 Knowledge and Training for the use of Information and Communication Technologies in preparation for online Teaching and Learning

The ICT became essential for the sustainability of online education at the beginning of the pandemic (Dayal, 2023). Moreover, ICT plays an important role in supporting educators' professional development, curriculum coverage, and the application of pedagogical practices and assessment (Kozma, 2011; Dayal, 2023). However, effective training delivery and ongoing practice with online T & L were necessary for the successful adoption and this has been made possible because of the ICT (Kozma, 2011).

Furthermore, the way in which educators employ ICT is essential to its effective integration. Dayal (2023) states that although the ICT continues to perform a crucial function, many of the educators in tertiary education still lack the ICT skills and training. Therefore, the adaptation of online learning opened a door for instructors to use the appropriate tools necessary to prepare academics for online education.

Dayal's (2023) findings highlight that teachers in professional colleges and coaching centres received some training to facilitate their online learning using online platforms. In contrast, educators in urban areas predominantly relied on self-learning methods and those in rural areas are said to have received little support. Educators faced insufficient training and assistance in adapting to this entirely new phenomenon called online T & L (Dayal, 2023). Similar results were acquired, indicating that universities implemented online T & L without adequate guidance, training, or resources from the outset, therefore compromising the readiness of lecturers for T & L (United Nations Sustainable Development Group, 2020). Furthermore, similar trends have been found in the Caribbean, where technology skills were an obstacle due to the unavailability of smart learning devices, poor Internet access, and lack of prior training for instructors and students (United Nations Sustainable Development Group, 2020). Furthermore, in many cases, rural universities did not have a well-structured ICT technologies and curriculum for online learning, which was a key concern expressed by many educators (Dayal, 2023).

2.3.4 Lecturers perceptions on the effectiveness of online Teaching and Learning and their readiness during Coronavirus Disease-2019

In terms of educators' readiness, it was found that training faculty members to facilitate online teaching was characterised by many challenges (Kummitha, Kolloju, Chittoor & Madepalli, 2021). With reference to Ethiopian institutions, it was noted that unprepared educators who were unable to facilitate online teaching adversely affected the quality of education programmes (Boateng, 2020). On another crisis, it was noted that many teachers were not technologically savvy and were forced to adapt to conducting their classes online without proper training, which, in turn, diminished the quality of teaching. (Yang *et al.*, 2020). Ya *et al*. (2020) believe that, in spite of the issue of the digital divide, countries like India have taken some progressive measures to replace traditional classroom instruction with online T & L activities. Nonetheless, it is clear from the lecturers' perspectives in Ya's (2020) study that HEIs in India's remote areas are still lacking the necessary resources to support online instruction. As a result, HEIs, which are found in both remote and urban areas, exhibit a digital divide (Kummitha *et al*, 2021).

An inherent challenge in online education pertains to the ongoing assessment and evaluation process. Despite the prior use of ICTs to support online T & L, both students and the faculty expressed uncertainty regarding the procedures for administering assignments, projects, and other continuous assessments (Sahu, Mishra & Lal, 2020). There was an immediate need for faculty members to adapt and implement novel assessment methods that aligned with the online mode (Sahu *et al,* 2020; Timmis, Broadfoot, Sutherland, & Oldfield, 2016). Situations resembling the challenges posed by the COVID-19 pandemic underscore the necessity for well-equipped infrastructure and resources, coupled with appropriate training for faculty members on conducting effective online teaching and addressing student queries (Sahu *et al.,* 2020; Timmis *et al*, 2016). Crucially, ensuring that every student, including those in remote areas, can access Internet resources and acquire the skills necessary for online learning is of paramount importance.

Lalduhawma, Thangmawia and Hussain (2022) contend that online T & L was made fashionable and effective by means of incorporating technological platforms such as laptops and phones. Moreover, Lalduhawma, Thangmawia and Hussaina (2022) indicate that WhatsApp was one of the preferred lines of communication for updates regarding announcements in the online T & L mode. Lalduhawma *et al.* (2022) share that technical training and workshops prior to conducting online classes were essential for lecturers. However, most of the findings revealed that the unpreparedness of lecturers for online learning affected the online examinations (Lalduhawma *et al*, 2022).

Lalduhawma *et al.* (2022) suggest that, for online classes that are conducted within a short period of time, a break should be given during the session to enhance students' productivity. Moreover, Lalduhawma *et al.* (2022) assert that students preferred an online session to be approximately 30 minutes at a maximum. Another important element influencing the effectiveness, and the readiness of online courses was the technical competence of both lecturers and students and the lack of feedback from lecturers played a role in the ineffectiveness of online T & L during COVID-19 (Lalduhawma *et al,* 2022).

Sadeghi (2019) highlights that flexibility is one of the positive influences associated with online T & L. Sadeghi (2019) further expresses that students can interact with the content at any place anytime, making it easy to study independently. Purwanto (2020) reports that online T & L when compared to face-to-face learning offers multiple networking platforms for interaction. Mukhtar, Javed, Arooj and Sethi (2020) note that active learning, where students participate in the creation of course materials and content is one of the factors

that promotes readiness and effectiveness of online learning that traditional T & L do not offer.

In contrast to the effectiveness and readiness of virtual teaching, Purwanto (2020) emphasises technical challenges, including the need for sufficient technical access and expertise, as well as the need for digital devices and dependable Internet quality. Moreover, specific barriers to the success of online T & L are said to be those caused by technical issues. Obstacles to communication also emerge, including restrictions related to communication patterns in virtual learning environments and delayed responses in asynchronous formats (Arkorful & Abaidoo, 2015). In addition, compared to direct face-to-face interaction, the nonverbal components of communication are less noticeable or responsive in a digital environment.

2.4. THE EFFECTS OF ONLINE TEACHING AND LEARNING DURING CORONAVIRUS DISEASE- 2019

This section discusses the effects of online T & L during COVID-19. Both positive and negative effects are outlined. The negative effects highlight challenges faced by educators and students during the rapid transition to online education, including issues related to the lack of resources, and new teaching methods and technologies. On the positive side, the section emphasises the great importance of online T & L such as improved student performance. The role of technology in facilitating online education and the role of the Blackboard is also elucidated.

2.4.1 Negative Effects of Online Teaching and Learning

Online education was used minimally before the COVID-19 pandemic. For instance, it was mostly used to support face-to-face modes of T & L. That is the reason staff and students were affected by the rapid transition to online T & L. However, some students and staff have, to a certain extent, adapted (Chiramba, 2021). Fataar and Badroodien (2020:2) refer to this as “a maladapted vision of doing the new educational normal.’’ One of the problems that were faced by both lecturers and students was adapting to online T & L without enough resources for it to succeed. In accord, Sayed and Singh (2020) found that educators were expected to switch to online T & L without considering whether they had the resources (laptops, data, and bandwidth) or pedagogical expertise to teach online during the pandemic. Empirical research involving four (4) universities in England showed that the closure of universities due to COVID-19 had effects and implications on educators’

teaching practices, as they had to introduce online learning programmes that they were not very much familiar with (La Velle, Newman, Montgomery & Hyatt, 2020).

When the COVID-19 pandemic struck, educators in neighbouring nations like Lesotho expressed several worries about government interference (Chere-Masopha & Makafane, 2021). Moreover, Chere-Masopha and Makafane (2021) claim that educators were concerned about how relaxed the government and the institutions were about the effects of COVID-19 on educational sectors. Hence, students' struggles with online T & L were exacerbated by the fact that certain facilitators (lecturers) reportedly found it difficult to adjust to the new teaching method (Cassibba, Ferrarello, Mammana, Musso, Pennisi & Taranto, 2020; Schuck & Lambert, 2020). According to Malatji, Masuku and Baloyi (2021), some lecturers faced difficulties in using LMSs like Blackboard Learn for instructional purposes.

Ungwuanyi, Okeke and Shawe (2021) report that participants in their study complained about poor attendance and participation and indicated that it had negative effects on the online T & L mode. This discourse is in line with Baroudi and Shaya (2022) who assert that lecturers faced technical difficulties in using LMS and that negatively influenced the ineffectiveness in implementing online T & L. In addition, Mashau and Nyawo (2021) found that the use of LMS for online T & L amid COVID-19 was a challenge for students and staff at UKZN and this was due to insufficient ICT skills. On the other hand, Zalat, Hamed and Bolbol (2021) reveal that 32% of lecturers reported to have experienced technical problems in utilising online platforms essential for T & L.

2.4.2 Positive effects of online Teaching and Learning

Under the unfavourable environment that was brought on by the COVID-19 epidemic, online T & L grew in importance and is widely embraced by institutions of higher learning and the continuation of the academic programmes remains pivotal (Selelo & Manamela, 2022). Online T & L carries both positive and negative effects. Gonzalez, De La Rubia, Hincz, Comas-Lopez, Subirats, Fort and Sacha (2020) mention that online pedagogies carry substantial benefits related to the improved high performance of students. Gonzalez *et al*. (2020) further assert that, compared to prior years, student performance increased during the COVID-19 pandemic. Likewise, some students were able to do very well despite the circumstances of online T & L because of their knowledge, technical proficiency, and technological confidence (Cao, Fang, Hou, Han, Xu, Dong & Zheng, 2020).

To effectively engage and cooperate in online T & L, Bower (2019) and Aguilera-Hermida (2020) purport that technology and user acceptability are necessary. Makgahlela, Mothiba, Mokwena, and Mphekgwana (2021) opine that although the transition from contact to online T & L Negatively affects certain students' learning as well as lecturers' teaching, some students and staff perceive T & L as a potential opportunity that the university can formally adopt as a form of education in the future. The partnership among universities, the government, and the private sector in South Africa to lessen the problems faced by the staff and students during the transitioning to online T & L amid COVID-19 was perceived to have been beneficial (Selelo & Manamela, 2022). Moreover, Selelo and Manamela (2022) point out that the national lockdown presented a flood of T & L online platforms to choose from and gave a sense of hope to both lecturers and students to continue their academic activities.

Muftahu (2020) states that COVID-19 pushed the universities beyond their limits toward developing appropriate and creative alternatives such as transitioning to online learning, training academic staff in the use of online instructional materials and tools, and encouraging students to adapt to online education platforms. Thus, universities have the responsibility to enhance learning and success by students from diverse backgrounds. However, when students study while lacking working laptops with unstable Wi-Fi hotspots, power outages and in congested, noisy home environments, online T & L gets compromised (Schreiber, & Jansz, 2020). Odeku (2021) confirms that UL was able to assist by using its ICT team as an educational innovation team to offer academics free training by holding several training sessions in quick succession. Therefore, the daily participation was said to have been very encouraging, and the trainers delivered the instruction using different methods such as representations and videos (Odeku, 2021).

Hamilton (2005) conducted a study which examined students' attitudes towards the use of technology as a delivery tool. Consequently, the findings reveal that to successfully initiate and implement the use of technology as an enabler depends strongly on the support and attitudes of the participants involved. Furthermore, gaining an appreciation of lecturers' and students' attitudes towards ICT may provide useful insights into ICT integration and acceptance for online learning (Ramdass, Birbal, Joseph-Alleyne & Harripaul, 2020). This finding is consistent with the literature that reveals that the successful integration and implementation of educational technologies depend largely on the attitudes of educators whose attitudes and perceptions are largely responsible for the success of online learning (Al-Zaidiyeen, Mei & Fook, 2010).

Ramdass *et al*. (2020) indicate that the use of social media platforms such as WhatsApp, Twitter, Microsoft Teams, Zoom, Facebook, and YouTube, amongst others, play an important role in providing lecturers and students with alternative opportunities for interaction and expression of ideas since they allow them to collaborate and share information through virtual communications. From the resources perspective, Zhu and Zhang (2022) suggest that institutions should supply students and staff with electronic gadgets to meet the requirements of online T & L in order to advance the professional development of the instructors. This aligns with Bekker's (2021) study, which indicates that measures related to the distribution of electronic devices were made available to South African institutions for the continuity of education. Pillay and Madzimure (2023) acknowledge that not all South African universities managed to effectively distribute electronic devices to lecturers and students, but South African HEIs did the best they could in making sure that essential electronic devices such as laptops were made available to needy students and staff for online T & L to be productive.

2.4.3 The roles of technology on the effectiveness of online Teaching and Learning

Migrating from traditional to online T & L requires lecturers and students to have a positive mind shift that is in acceptance of the utilisation of new technologies (Mashilo & Selelo, 2021). The movement to online T & L has allowed HEIs to learn about infrastructure shortfalls and the precautions needed to address them. Alluding to technology as an enabler for T & L, Keegan (2005), and Bennet and Maton (2010) posit that technology is currently used to bridge the time, geographical, economic, social, educational, and communication distance between students and educators. Additionally, Toquero (2020) indicates that the increased digitisation and transmission of educational services can become a post-pandemic norm. However, Baldwin (2013) asserts that when technology is implemented quickly and unanticipatedly, systematic planning of technological upgrades to educational programmes is challenging. In other words, technology is less likely to be effective when implemented in a hurry in an environment that poses insufficient materials to make it a success and this is an issue in most of the Historically Black Universities (HBU) in South Africa. In parallel with the above discourse, Murphy (2020) highlights that ensuring digital fairness is very important in online T & L mode, bearing in mind that not everyone has access to digital equipment, therefore the Internet and Wi-Fi are imperative.

The lack of adequate digital tools, no Internet or unstable Wi-Fi can lead to numerous difficulties and many students are likely to lose crucial learning (Mashilo & Selelo, 2021).

However, the researchers (Mashilo & Selelo, 2021) advise the institutions to strive to guarantee access to the necessary resources by every student and faculty. Lassoued, Alhendawi and Bashitialshaaer (2020) also allude that in cases when students do not have computers, they must guarantee that all the instructional applications operate on a mobile phone since it is a device that is mostly utilised by many people irrespective of their financial stability or instability.

Another positive effect that came because of COVID-19 and the adaptation of online T & L modes was the enhancement of technology and higher institutions' infrastructure (Daniel, 2020; Ngwacho, 2020). Therefore, Daniel (2020) and Ngwacho (2020) state that the utilisation of technology is beneficial for both the universities/colleges, students, and staff members. It was discovered that universities with a history of inferiority when it comes to infrastructure such as the UL, the University of Fort Hare (UFH), Mangosuthu University of Technology (MUT), and the University of Venda (UNIVEN), to name a few, gained immensely from the usage of technology for online education (Ngwacho, 2020; Tonguero, 2020). Ngwacho (2020) and Tonguero (2020) share that the pandemic gave these institutions a chance to improve their modern T & L methods by leveraging the ICT infrastructure. For instance, many of the universities/colleges enhanced their Blackboard functionality to support online T & L. This prompted the staff and lecturers to adopt new pedagogical techniques and methods of providing instruction (Ngwacho, 2020).

Toquero (2021) suggests that despite the challenges that were accompanied by the implementation of online T & L during COVID-19, technology managed to surpass those challenges. Of note, even post-COVID-19 pandemic, as part of the educational transformative agenda of the government of South Africa, technology and innovations take the front row and as such, should be prominent in all aspects of pedagogies in all universities (Yang *et al*., 2020). Consequently, this will enrich competency in T & L among lecturers, make the students technologically savvy and will fulfil the aspect of the government educational transformation agenda (Yang *et al*, 2020).

2.4.4 The roles of the Blackboard Learn on the effectiveness of online Teaching and Learning

One of the online platforms or LMS that is predominately used in South African institutions is the Blackboard. Blackboard is a web-based learning management system used by schools all over the world for instructing, interacting, and assessing students online (Sife, Lwoga & Sanga, 2007). It is a programme built to enhance teaching methods and the

learning processes of students (Dokur, 2008). Furthermore, it is very conducive to use as it is open, flexible, and centred on student achievement (El Zawaidy & Zaki, 2014). Therefore, UL adopted this technology as the most potent for its broad pedagogy in and outside of the university (Odeku, 2021). Odeku (2021) also points out that Blackboard is now being used extensively at the UL due to its flexible use for T & L anywhere, provided one has an online device that supports the Internet connectivity. Dhawan (2020) showcases that the uniqueness of the Blackboard as an aspect of online learning is that students can learn anywhere independently and at the same time interact and engage with their lecturers and other students.

2.5. THE QUALITY OF ONLINE TEACHING AND LEARNING AS OFFERED BY LECTURERS DURING CORONAVIRUS DISEASE-2019

This section discusses the quality of online T & L offered by lecturers during COVID-19. Therefore, this section acknowledges the institutions, lecturers, and students in adapting to online education during the difficult time of the pandemic. Moreover, it explores the quality of the content delivered online. Hence, the quality of academic assessments and invigilating tools are one of the elements discussed. The importance of ensuring quality assurance within higher education is also outlined.

Mashilo and Selelo (2021) state that the effects of COVID-19 on the quality of education in the institutions of higher learning in South Africa appear to be receiving less consideration as opposed to just a need to shift into the new era of T & L. Mashilo and Selelo (2021) further assert that much concentration and effort are directed to implementing alternative T & L methods to allow the continuation of education during the crises of COVID-19.

Toquero (2020) believes that at the centre of the shift from contact to online learning, the focus should be on the quality of education that students received during the pandemic. Moreover, Toquero (2020) provides that the manipulation of the system and technical issues such as poor connectivity, power outages and broadband affected the quality of online T & L. However, the effectiveness and efficiency of online T & L are acknowledged are also (Toquero, 2020). Mashilo and Selelo (2021) opine that the quality of the content of the academic assessments has been compromised. In support of that, Azorín (2020), through observing Spanish academic assessment and curriculum during COVID-19, indicate that the shift to online learning threatened the quality of online education as offered by educators.

Azorín (2020) claims that the academic curriculum focuses more on memorising content rather than applying understanding and learning to use the information for future endeavours. An expression of agreement was made by Mashilo and Selelo (2021), who are of the view that the trend of memorising and plagiarising content for academic assessments is anticipated to rise in this epoch of online education. However, Mashilo and Selelo (2021) describe Turnitin as a tool that assisted lecturers in detecting similarities index, which subsequently reduced plagiarism. The shift to online education is perceived to have created a much-anticipated high pass rate because the students had the freedom to consult any form of material to write academic assessments such as tests, examinations, and group assignments (Mashilo & Selelo, 2021).

Even though online T & L has become increasingly accessible, there remains a question about the quality of education offered (Selelo & Manamela, 2022). Malatji, Masuku and Baloyi (2021) argue that as much as there has been an improvement in students' academic performance because of the adaptation of online T & L, the quality of education should be examined. Hence, Mashilo and Selelo (2021) concur that online T & L is widely accepted and adopted by HEIs, but it poses several inevitable challenges, including the quality of the assessments. Therefore, the assumption that students pass with distinctions could not imply improved education quality (Selelo & Manamela, 2022). Mashilo and Selelo (2021) agree with Selelo and Manamela (2022) by highlighting that the recent high performance of students in tertiary institutions is misleading because, in online T & L, students can access any materials, and sometimes seek assistance from relatives, friends, siblings, or an individual who might have knowledge of what they are studying.

Furthermore, the standard of graduates that would be a by-product of online education could encounter certain challenges if the quality of online T & L is not of a high standard in the workplace because they are simply learning to pass, not to acquire knowledge (Mashilo & Selelo, 2021). Undoubtedly, this instigates questions about online education's trustworthiness, quality, and reliability. For example, UNISA is well-known for providing open-distance education to all students; however, UNISA has a reputation for having a low throughput rate. To give a reference, UNISA's overall rate was lower than 16% from 2015 to 2019 (UNISA, 2021). If such an institution experienced challenges regarding the quality of education offered to its students in open distance education prior to COVID-19, it, therefore, implies that institutions like UL could have experienced severe challenges, particularly on the quality of education that was offered.

In Malatji, Masuku and Baloyi's (2021) study, participants state that education was compromised because, since the shift to online T & L, there has been hardly effective communication between the students and the lecturers. On the positive side, Zalat, Harmed and Bolbol (2021) share that technological expertise among academics and students improves the use of online learning environments and the quality of online T & L, which eventually raises the educational value and experience of both students and lecturers.

Ngwacho (2020) proposes that strategies for online quality assurance should be developed to examine the significance and quality of the assessments. On the quality of instruction, learning, and assessments, online T & L have both positive and negative effects (Malatji, Masuku & Baloyi, 2021). Moreover, Malatji, Masuku and Baloyi (2021) claim that the negative effects of online T & L are centred on the level of instruction in terms of student-lecturer interaction. One of the participants in their study said that education was of low quality because many assessments were structured with multiple choice questions as a common evaluation method, which is perceived to be of low-quality evaluation to students, particularly in tertiary institutions that are supposed to produce graduates who are knowledgeable in their fields (Malatji, Masuku, & Baloyi, 2021).

One of the tools that are predominantly used by institutions to ensure good quality of education is a proctoring tool known as the online invigilating tool. In the study conducted by Patael, Shamir, Soffer, Livne, Fogel-Grinvald and Kishon-Rabin (2022), it has been reported that using a remote proctoring tool had been useful, especially for institutions that impart remotely using online learning platforms, to assess students in a controlled physical proctored area (González-González, Infante-Moro & Infante-Moro, 2020; Harmon & Lambrinos, 2008; Hollister & Berenson, 2009; Wynne & Lopes, 2006). Palvia (2018) concedes that the proctoring tool is a dependable remote assessment technique that upholds student flexibility to be tested from any place without having to commute to campus. Regardless of the increased motivation to expand the accessibility of remote examinations, there is a consensus among educators that one of the solutions to prevent low-quality online education is implementing means to avoid dishonesty in examinations/tests (Patael *et al*., 2022).

Studies by Fask, Englander and Wang (2015) and Rovai (2000) show that during distant un-proctored online examinations, dishonesty was easier and more frequent than when examinations were conducted in proctored environments. Thus, much research has been dedicated to developing methods for the detection of cheating techniques for numerous

types of eLearning assessments for virtual courses (Alexandron, Wiltrout, Berg, Gershon & Ruipérez-Valiente, 2023; Davis & Weisbeck, 2016).

Generally, four (04) kinds of remote proctoring mechanisms have been documented, namely: (1) Live proctoring, which involves having a real-time human proctor present during the examination, for example, (2) Watching the students live online through Zoom, Google Meet, Microsoft Team, which is very common to traditional contact proctored examinations, but need an advanced technological proficiency on the part of the invigilator [Proctor] (Mitra & Gofman, 2016; Tuah & Naing, 2021), (3) Video recordings by the examiner, which is re-examined and assessed by a human invigilator after the examination (Hussein, Daoud, Alrabaiah & Badawi, 2020), (4) Automation process, where the system records the examination, identifies, and signals practices of possible student misdemeanours using proctor (Mitra & Gofman, 2016; Tuah & Naing, 2021).

Digital Promise (2023) affirms that online T & L promotes equity and flexibility for all students by fostering a learning environment that is receptive to cultural differences and considers each student's uniqueness. Conversely, Digital Promise (2023) indicates that if the methods meant to guarantee good quality of online T & L are not followed or are applied improperly, online T&L can worsen and prolong inequality for students and educators.

2.5.1 Lecturers' perceptions on ensuring good quality for online Teaching and Learning during Coronavirus Disease-2019

Radu, Schnakovszky, Herghelegiu, Ciubotariu and Cristea (2020) state that several factors have a negative impact on the quality of online education, including the lack of infrastructure (digital devices, Internet connection) required to ensure the smooth operation of the T & L process, ineffective communication between students and lecturers, insufficient expertise for performing practical application, a lack of motivation for T & L on both students and lecturers, unethical online examinations (cheating), and a lack of communication.

Basilaia and Kvavadze (2020); Adnan and Anwar (2020) showcase that online learning is only going to be of good quality in digitally evolved nations and educational institutions that use digital technology. Additionally, Adnan and Anwa (2020); Basilaia and Kvavadze (2020) recommend that academic institutions should enhance their online learning environments and infrastructure. For instance, institutions must invest in an advanced LMS that meets current needs and provide staff, lecturers, and students with training on how to utilise the systems.

On the issue of communication, Burki (2020) says that a university is not about the lecturer teaching and the student learning, but a place where a relationship is formed with the intention to create a conducive environment. Therefore, Burki (2020) suggests that the solution would be to encourage students and lecturers to engage in various extracurricular projects that will enhance the online T & L mode. Eurboonyanun, Wittayapairoch, Aphinives, Petrusa, Gee and Phitayakorn (2021) propose recommendations concerning student misconduct, including academic cheating activities and plagiarism during examinations by suggesting that institutions should implement continuous assessment throughout the semesters and introduce open-book online examinations as preventive measures. Motseki, Maluleke and Barkhuizen (2021) indicate that one of the challenges that hampered the quality of online T & L was plagiarism, which became an academic unethical issue. Motseki *et al*. (2021) propose that addressing academic integrity issues, such as plagiarism, can be achieved by using Turnitin to capture similarity indexes.

It has been reported that lecturers who are invested in the growth of their students will make it apparent that they are willing to go above and beyond to ensure that the education offered to students is of good quality and that their students succeed in their online studies (Ulmanen, Soini, Pietarinen & Pyhältö, 2016; Luo, Xie & Lian, 2019). For the educational process to be successful, both “parties” must be equally involved, according to Renninger and Su (2012). Students who only attend class to meet attendance requirements are unlikely to engage in more than a surface-level kind of engagement. In such circumstances, a deep level of student engagement may not be determined by even the best lecturers and course materials. Therefore, to ensure the good quality of online education, there should be engagement in online classes (Renninger & Su, 2012). Wekullo, Kabindio and Juma (2023) assert that several factors, including the lack of sufficient structures, uncertainties among lecturers and students, and technical difficulties, had a detrimental impact on the quality of online learning. Moreover, some students’ incapacity to access the Internet and lack of appropriate equipment prevented them from taking part in online learning.

2.5.2 The perceptions of the institutions on the quality of online teaching during the Coronavirus Disease-2019 pandemic

Wekullo, Kabindio and Juma (2023) indicate that when comparing learning experiences between online T & L and traditional T & L, faculty members stated that the quality of education amid COVID-19 was lower when compared to contact learning prior to the

pandemic crises. Wekullo *et al.* (2023) further explain that during the COVID-19, the focus was on how the institution would adopt online learning for all staff and students and not whether the online teaching method would provide quality education. Adnan and Anwar (2020) report that online learning suddenly changed into a notes-taking exercise for examination purposes. In other words, online T & L excludes the social, emotional, mental, and cognitive development aspects of education that make it complete and of quality (Adnan & Anwar, 2020).

Wekullo *et al*. (2023) mention that a greater number of faculty members indicated that the institution was not equipped with the infrastructure to offer a standard online learning experience; yet, these are crucial elements of learning environments in any institution. Moreover, the study reports increasing evidence of a strong association between the quality of infrastructure and the students' outcomes among other benefits. Therefore, the infrastructures included stable electricity, laptops and computers, reliable Internet connectivity and bandwidth to name a few (Wekullo *et al*, 2023).

2.5.3 Quality assurance in online learning in Higher Education Institutions

Tremblay and Kis (2008) concede that the growing interest in quality assurance in higher education is due to the emergence or expansion of private agencies and the diversification of modes of T & L. Therefore, Nakweya (2021) asserts that pedagogy in higher education during the COVID-19 period required an understanding of the technical aspects of online teaching to enhance quality from all stakeholders in university education, including students, and especially from academic and supporting staff.

All parties involved in education were concerned about the quality assurance of online learning during the COVID-19 pandemic (Uleanyaa, Ezeji & Uleanya, 2022). However, providing educators with skills that were needed to efficiently assist students in the virtual learning setting was a crucial part of improving the quality of online teaching (Nakweya, 2021). Moreover, Nakweya (2021) advocates that the training of educators was one of the factors that contributed to a good quality of online education. Furthermore, Nokweya (2021) alludes to the notion that information and technology played a critical role in guaranteeing high-quality for online learning. Nokweya (2021) also highlights that institutional support for online teaching within the quality assurance framework is another crucial effective strategy that is necessary to ensure the quality assurance of online T & L.

Pedro and Kumar (2020) reiterate the need for the professional development of lecturers on a variety of subjects related to online instruction. The findings of the research expand

on several key areas related to guaranteeing the quality of online education, including communication, interaction, curriculum design, course redesigning, evaluation, and enhancing learning management systems. The results of the study also demonstrate the necessity of creating an institutional environment that simultaneously encourages and rewards lecturers who use online instruction while also helping them advance their expertise in this area. Likewise, Pedro and Kumar's (2020) findings present that there are additional areas that require attention when it comes to online teaching. These areas include instructional design and technical support, online education research support, and online programme management support.

2.6. THE CHALLENGES OF ONLINE TEACHING AND LEARNING DURING CORONAVIRUS DISEASE-2019

Mosteki *et al*. (2021) reveal that online T & L encompasses challenges ranging from students issues, educators' issues, and content issues. Therefore, this section discusses the challenges of online T & L during COVID-19, emphasising issues such as digital access, Internet connectivity and the proficiency of students and lecturers in utilising online platforms. The digital device that exists in online T & L and the challenges related to the use of LMS are explored. Despite the challenges of online T & L, the researcher also outlined some benefits of online T & L that conquered the challenges.

Mashau and Nyawo (2021) indicate that in the current digital age, HEIs in South Africa experiencing numerous impediments because of the provision of online T & L. The paradigm shift from traditional face-to-face T & L to online T & L and learning posed challenges to both lecturers and students due to the complex nature of online education (Di Pietro, Biagi, Costa, Karpiński, & Mazza, 2020). One of the challenges is that many rural institutions are populated by students and lecturers who lack sufficient knowledge of how to use online technologies, and many educators do not know how to teach using online platforms (Ogbonnaya, Awoniyi, & Matabane, 2020).

The challenges of access to digital devices such as laptops, and tablets, stable and reliable access to Internet connectivity, and access to and affordability of mobile data bundles were prevalent in the shift to online course delivery (Mafenya, 2021). Hence, Zhao (2020) reveals that failure to address the lack of Internet connectivity would affect the whole process of online T & L. Moreover, Masuku *et al.* (2021) highlight that poor Internet connectivity has been a hindrance that adversely challenges the student attendance in virtual online classes. Ramoroka (2021) support Masuku *et al*. (2021) assertion by

reporting that, in UL, one of the major challenges during COVID-19 was student attendance and participation in online classes. Ramoroka (2021) notes that many students complained of poor networks, which eventually prevented them from attending online classes. Mhlanga and Ramoroka (2021) also stipulate that poor attendance of students in online classes was a major problem.

Furthermore, Mhlanga and Ramoroka (2021) share that lecturers from the Department of Mathematics and Applied Mathematics at UL disclosed that poor attendance was encouraged by the fact that students could access lecture recordings at their own time. In addition, other lecturers revealed that students continue to show no interest in attending classes and they claim that ever since the shift to complete online learning attendance has never been half of the class size (Mhlanga & Ramoroka, 2021).

Through the observation of the researcher, one of the challenges associated with online T & L at UL is the use of Blackboard. Blackboard is used as an institution's LMS and there are many lecturers and students at the beginning of the semesters who often complain about the modules not being updated through the Blackboard and the rectification of such problems tends to consume time for T & L processes. Mafenya (2021) believes that the unplanned and sudden migration to online T & L, without the training of practitioners, sufficient bandwidth, and adequate preparation, resulted in a poor user experience that is not conducive to sustaining its growth. In contrast, it is also believed that because of the COVID-19 and the shift to online T & L, a new hybrid model of education has emerged, with significant benefits (Mafenya, 2021).

The researcher further outlined that, before any institution goes completely online, all external barriers or challenges should be considered and dealt with (Mafenya, 2021).On the other hand, Jantjies (2020) states that the digital divide has an effect on online T & L. This includes access to hardware, knowledge of digital communication tools, and Internet affordability. Furthermore, these issues should all be addressed because they are weakening two of the nation's greatest opportunities for equality and development, specifically education and job opportunities. Joshi (2021) stresses that to strengthen the resilience of educational systems, South African policymakers and education officials can take advantage of the opportunity provided by COVID-19 to implement new learning modalities.

The digital divide as outlined by Jantjies (2020), is one of the concerns raised by lecturers and students in different institutions during COVID-19. Murphy (2020) states that in that challenging period, ensuring digital equity was imperative because not everyone had

access to digital equipment. Mashilo and Selelo (2021) also showcases that that the lack of digital fairness has been a challenging factor for many lecturers and students in higher institutions. In accord, Bakker and Wagner (2020) report that the inequity and digital gap among students have augmented because students did not and still do not have enough resources to engage in virtual learning.

Malatji *et al.* (2021) share that students experience challenges related to Internet connectivity, laptop distribution, and the depletion of bundles. Many universities in international countries, such as Malaysia, have reported similar situations regarding online T & L, including the lack of trained lecturers, slow Internet speeds, inadequate Wi-Fi coverage, infrastructure, interface design, and content low quality (Shahzad, Hassan, Aremu, Hussain & Lodhi, 2021). Shahzad *et al*. (2021) additionally disclose that students were dissatisfied with the staff's skills and capabilities to execute online T & L.

Mahyoob (2020) asserts that some of the challenges students encounter when pursuing virtual learning include technical problems when using LMS tools such as streaming audio, downloading class materials, and accessing online classes. It is believed that several students experienced connectivity problems because of the high digital divide that exists in institutions. Selelo and Manamelo (2022) report that technical inequalities have been a consequential factor in the challenges associated with online T & L. However, some institutions did not experience difficulties in implementing online T & L because online learning resources and advanced technology have always been available in their institutions unlike disadvantaged institutions (Selelo & Manamelo, 2022).

There was a serious hurdle in getting lecturers to learn and adapt to using LMS because change is difficult, particularly for lecturers who were used to contact learning and were unfamiliar with online education (Odeku, 2021). Moreover, most of the old lecturers never imagined that there would be any reason for them to switch to online T & L to that extent (Odeku, 2021). While some of the lecturers were technologically savvy, many of them were faced with the challenges of not being acquainted with the new learning platform. As a matter of fact, despite the training offered by the UL, many university lecturers are still struggling to grapple with the new technology. As such, they prefer to continue to use old-fashioned models like face-to-face methods for delivering pedagogy and that deprives the students of modern-day technologically inclusive pedagogy being used to enhance the competency of students.

Krull, Ganas, Pallitt, Kramm and Riley (2021) assert that there are differences across South African institutions in terms of how they employ educational technologies and how

much of it is integrated into pedagogical components of T & L. The digital divide warns us that despite the increasing adoption of ICT in South Africa, there is still a significant gap in access to devices and technologies, which is primarily caused by affordability, unreliable Internet, and weak signals (Chiramba, 2021). Furthermore, many rural students come to universities with little or no experience in using electronic devices such as smartphones and laptops. While universities are doing their best to provide interventions to better online T & L, Bakker and Wagner (2020) share that inequality and the digital divide will only increase because many students do not have the resources and opportunities to engage in online education and with millions of people suddenly using online platforms, crashing software or poor access is all too common.

Hollister, Nair, Hill-Lindsay and Chukoskie (2022) state that students found it more difficult to participate in online courses than they did in traditional classroom settings. This was influenced by lack of peer interaction, inadequate training, and technical difficulties appear to be major concerns for students during online T & L and have contributed to their engagement problems. Mokoena-de Beer and Moloko (2022) draw attention to the fact that certain issues with Internet connectivity were beyond institutions' control, which consequently had an effect on attendance.

2.6.1 Challenges related to Learning Management Systems

Mokoena-de Beer and Moloko's (2022) study reveals that lecturers expressed challenges related to the use of online systems or platforms to execute online T & L during COVID-19. The study further reports that lecturers spent their time not only teaching but also preparing and acquainting themselves with LMS. Therefore, lecturers were sometimes students and educators. For that reason, it became difficult for them to execute effective online learning within that short period of time. In line with Mokoena-de Beer and Moloko (2022), Baroudi and Shaya (2022) indicate that lecturers' inability to use online educational programmes and applications may have negatively affected their capacity to conduct online instruction.

Mokoena-de Beer and Moloko (2022) state that although lecturers were orientated on the LMS, the transition process did not offer sufficient opportunity for preparation as it was abrupt and unplanned. Due to their insufficient LMS knowledge, lecturers found it difficult to use some of the tools that could improve online instruction because they lacked system competency (Seetal, Gunness & Teeroovengadum, 2021). However, Hayat, Keshavarzi, Zare, Bazrafcan, Rezaee, Faghihi, Amini and Kojuri (2021) suggest that to facilitate an

efficient shift to online teaching, the LMS should be simple to use, and lecturers should possess the necessary skills to operate the LMS and troubleshooting support teams should be available.

Mokoena-de Beer and Moloko (2022) report that more time should be spent preparing and delivering the online T & L activities when compared with face-to-face T & L. In addition, Mokoena-de Beer and Moloko (2022) assert that much time is spent fixing errors that occurred because of the unfamiliarity with the LMS. Hence, it was important for institutions to have ensured that lecturers were conversant with the LMS prior to the implementation of online teaching. Conversely, Pillay and Madzimure (2023) acknowledge that besides the challenges encountered in using LMS, the most pivotal strategy that most South African institutions used was the LMS and after the trainings were offered, the attendance rates of students increased with great numbers.

2.6.2 Challenges related to competency

Mokoena-de Beer and Moloko (2022) state that many lecturers in the study indicated that they did not receive sufficient training to conduct online learning effectively. Therefore, this made them feel incompetent while delivering content. As a result, they resorted to just teaching without engaging with the students. However, Bao (2020) and Mahmood (2021) present alternative appropriate instructional strategies for online teaching that can increase competency, which include the division of learning units, increased students' participation and interaction, voice, and tone management, and blending online with offline self-learning.

Lecturers' lack of proficiency in online T & L stemmed from their doubt about the effectiveness of the techniques they used to transfer knowledge (Mokoena-de Beer & Moloko, 2022). The lecturers emphasised that their lack of competencies was due to insufficient formal training on the LMS and online instructional techniques. In a study on lecturers' self-efficacy in online teaching, Baroudi and Shaya (2022) reveal that educators struggled to choose the right online teaching tactics and were incompetent to adapt from in-person curriculum to online platforms. Thus, the lack of training prior to entering the virtual environment during the COVID-19 lockdown restrictions was not unique to this study (Mokoena-de Beer & Moloko, 2022). Baroudi and Shaya (2022) report that the online system's implementation was a concern and that it affected educators' self-efficacy.

2.6.3 Institutional challenges perceived to be out of control affecting online Teaching and Learning during Coronavirus Disease-2019

Lecturers experienced some challenges in online T & L that were out of their control. These challenges negatively affected the lecturers responsible for the operation of online courses, which led to an uneven situation in the online learning environment (Mokoena-de Beer & Moloko, 2022). Zhu and Zhang (2022) corroborate this assertion by stating that some of the challenges impeding online T & L, which were out of institutions' control, included unstable Internet connectivity. Moreover, Watermeyer *et al.* (2020) reveal that lecturers mentioned issues related to poor attendance and lack of engagement, as some students did not attend online classes because of inadequate Internet access. Badaru, Edu, Edu and Duku (2020) concur that poor Internet connection and electricity cuts (Power cuts) affected the online T & L. Pillay and Madzimure (2023) say that load shedding affects the Internet towers, which resulted in many students struggling to log in to online platforms to attend classes because of Internet difficulties. Lufungulo *et al.* (2021) indicate that Zambian staff listed poor connectivity issues as among the critical challenges that interrupted the quality of online education.

Although the university offers technical support, it is significant to address challenges that affect the quality of online T & L (Mokoena-de Beer & Moloko, 2022). The HEIs and the DHET have been recognised for their outstanding dedication in the provision of support to staff and students to ensure efficient online T & L (Ramsuraj, 2021). This was achieved through addressing challenges such as a lack of Internet connection by providing data and the zero-rated website (Ramsuraj, 2021).

The challenge with Internet connectivity and the bandwidth of Internet supply affected online teaching as some lecturers struggled to upload teaching material. This also affected students' access to learning, especially postgraduates who were doing distance learning or those residing in a place where there was poor connectivity (Mokoena-de Beer & Moloko, 2022). The bandwidth challenge was noted by Hayat *et al*. (2021), who found that students and lecturers were not satisfied with the slow Internet speed, resulting in slow uploading, and downloading of content in the LMS. The situation was worsened by electric power outages, which affected network signals. Consequently, classes had to be postponed to other days, resulting in increased workloads for the lecturers (Baroudi & Shaya, 2022).

Based on the challenges encountered in relation to online T & L amid COVID, Hollister, Nair, Hill-Lindsay and Chukoskie (2022) state that students found it more difficult to participate in online courses than they did in traditional classroom settings. This was influenced by the lack of peer interaction, inadequate training, and technical difficulties, which appeared to be major concerns for students during online T & L, and contributed to their engagement problems. Mokoena-de Beer and Moloko (2022) draw attention to the fact that certain issues with Internet connectivity were beyond institutions' control, which consequently influenced attendance. Therefore, the literature highlights factors that affected online T & L, which were perceived to be beyond the universities' control. However, universities took measures to mitigate and address some of these factors (Mokoena-de Beer and Moloko, 2022).

2.6.4 The benefits of online T & L and selected challenges presented by the Coronavirus Disease-2019

Although the implementation of online teaching was challenging, there were some benefits for the lecturers. Therefore, it is evident that the lecturers were able to reach a larger number of students at a time than they would in traditional face-to-face teaching (Mokoena-de Beer & Moloko, 2022). Online teaching enables the lecturers to keep in touch with students outside the physical classroom and provides enough time for students to interact with the assessments provided unlike in traditional T & L, where they sometimes want instant submission (Saha, Pranty, Rana, Islam & Hossain, 2022). Furthermore, online T & L was perceived as cost-effective for the lecturers because it reduced travelling costs to the university and was convenient as they held classes from their homes.

The lecturers acknowledged the importance of online T & L and suggested measures that could facilitate the smooth delivery of online teaching (Mokoena-de Beer & Moloko, 2022). They recognised the need for continuous training and support on how to effectively use the system to transfer knowledge and skills to students (Mokoena-de Beer & Moloko, 2022). Training, coupled with mentorship from experienced and competent individuals, was highlighted as essential in preparing lecturers with the technological knowledge and skills necessary to design online learning activities (Baroudi & Shaya, 2022). This approach could potentially increase student engagement, thereby enhancing students' knowledge and skills (Baroudi & Shaya, 2022).

To summarise, Batnaru, Nita, Anichiti and Brimza (2021) share that universities attempted to ensure that every student had a stable Internet connectivity when they were allowed to

come back to the campus. Jarbandhan's (2021) findings embrace the role of technology, and the institutions' attempt to address the Internet problems faced by staff and students to connect without problem during the difficult times of COVID-19.

2.7. STRATEGIES TO BETTER ONLINE TEACHING AND LEARNING DURING CORONAVIRUS DISEASE-2019

This section foregrounds the strategies meant to better online T & L during COVID-19. The continuation of evaluating and assessing online T & L practices and the support from the public and the private sectors needed to ensure effective online T & L are discussed. The importance of communication workshops and the need to address issues such as data bundles and the implementation mechanisms to improve the performance and the attendance of students in online T & L is emphasised. The section concludes by highlighting the necessity of strategies for ensuring quality assurance.

There is an urgent need for research to explore how African schools and HEIs have been affected by the pandemic and how they are coping with the online T & L programme and propose strategies that can be implemented to better online learning (Makgahlela *et al,* 2021). Makgahlela *et al.* (2021) further suggest that there is also a need for universities to monitor and evaluate T & L across the various faculties and/or departments as a quality measure to avoid inconsistencies. The usage of online T & L is presumptively anticipated to grow in popularity in South African higher education post-COVID-19 (Mpungose, 2020). As a result, continuing education beyond COVID-19 would still be possible through online T & L (Selelo & Manamela, 2022). This statement is corroborated by Odeku (2021), who claims that due to the multiple opportunities online pedagogies provided for lecturers, students, and UL amid the COVID-19 era, the university might continue to employ them post-COVID-19. Thus, fundamental techniques for evaluating online T & L are required.

Ngwacho (2020) proposed that it is essential to formulate approaches aimed at guaranteeing the quality of online T & L to uphold the educational studies. Odeku (2021) emphasised the significance of flexible online learning plans incorporating a variety of strategies to devise pedagogical activities. These plans should implement diverse technologies to enhance both online and blended learning experiences.

The government and private sector were advised to continue offering support to rural-based universities when they try to respond to students' and staff's challenges and needs for online learning mode (Makgahlela *et al,* 2021). In support of the above discourse,

Dawadi, Giri and Simkhada (2020) reveal that the government, universities and colleges took proper initiatives such as providing learning electronic devices to make education accessible to all students who did not have the required materials.

Ramoroka (2021) recommends that UL students and lecturers (Staff) must be trained in basic computer knowledge and skills because students and lecturers who did not receive proper training to utilise online platforms struggled to learn and execute virtual learning. Furthermore, workshop training and short courses for lecturers and students on online T & L should be the main priority. In response to that, Odeku (2021) indicates that UL lecturers received proper training on utilising LMS, particularly part of Blackboard called Blackboard Collaborate to empower the University to provide effective lessons and deliver contemporary competent-based pedagogy to all students.

Makafane and Chere-Masopha (2021) conducted a study at the National University of Lesotho (NUL) and reported that a short course was provided to lecturers and students on the basic skills required to use the institutional LMS amid COVID-19. Similarly, UL introduced workshops to train, retrain and empower lecturers on how to use technology to meet modern students' needs. These courses, trainings, and workshops were developed and provided to equip instructors and students with the basic skills needed to participate effectively in online learning mode (Odeku, 2021).

Malatji *et al.* (2021) highlight that despite the challenges faced by lecturers, as accompanied by the adoption of online T & L, there is an opportunity for advancement in maintaining that online T & L mode is productive. Moreover, Malatji *et al.* (2021) recommend that lecturers should undergo extensive training to ensure they have the knowledge and abilities necessary to instruct online courses. Additionally, they strongly encourage educators to use social media platforms such as WhatsApp to better connect or improve engagement with their students. On that note, Songo and Zirima (2022) state that using WhatsApp as a social media platform for T & L was accommodating, useful, and often free of network connectivity problems.

Malatji *et al*. (2021) suggest that a new remote T & L policy should be created and put into effect. One of the leading challenges was the distribution of the data bundles and the delays. Therefore, Malatji *et al*. (2021), recommend that the data bundles should be addressed according to the needs of the students. Odeku (2021) asserts that it is mandatory in online education for staff and students to have access to online devices. Therefore, UL promoted this by providing laptops and Internet access to all students and lecturers so that instruction could continue despite the outbreak of COVID-19.

Mhlanga and Ramoroka (2021) propose that HEIs should engage with telecommunication providers to address the data bundles issue and with the public or private sector to address the issue of delivering learning resources to eligible students. Mhlanga and Ramoroka (2021) posit that a mandatory attendance monitoring mechanism for classes must be implemented to guarantee the quality of online T & L. The same approach used in face-to-face learning, where students are required to attend a minimum number of classes to be eligible for examinations, should be applied in online learning as well (Odeku, 2021).

Ngwacho (2020) contends that strategies for online quality assurance need to be created to ensure that the assessments are accurate and of high quality. Perhaps applying concepts and theories, rather than just naming, and discussing them, is necessary to assure the quality of educational study. Selelo and Manamela (2020) suggest that in the current fiasco and post-COVID-19 era, the initial and interim recommendations that should be put in place are the integration of online T & L in the current system of traditional (contact) T & L.

One of the issues raised at UL was that during the lockdown, students could not access certain software for academic purposes, such as Geographic Information System (GIS) software, which is indicated to typically be installed on university computers (Ramoroka, 2021). Therefore, to address that issue, the University repatriated students to campus. This is corroborated by Odeku (2021), who states that when the government intervened and the lockdown level was lowered, universities offered a solution to the network crises by permitting only a small number of students (Postgraduates) to return to campus and advising older adults (>55 years old and above) and students with comorbidity to stay at home. The UL implemented this rule to eradicate and slow the spread of the virus on campus while still carrying out various educational and academic activities properly (Odeku, 2021). Because many students had access to the university's Wi-Fi to access Blackboard Collaborate, Mhlanga and Ramoroka claim that the proportion of attendance rates increased to 90% because of certain students returning to the campus.

Hedding, Greve, Breetzke, Nel and Van Vuuren (2020) provide that, to strengthen the quality of online T & L, HEIs and the government must also raise awareness and improve the quality of the online courses that are provided as part of online education. In response, Mahlaba and Mentz (2023) point out that lecturers who showed insufficient skills and knowledge to use online platforms were provided with online courses for training to learn creative ways to use online technologies for T & L. Another view provided by Kreber and Kanuka (2006) is that some lecturers and educators find it difficult to employ educational

technologies since they lack expertise because these online T & L platforms were not as popular back then as they are now. Mashau and Nyowe (2021) therefore recommended that professional development opportunities within the institutions be implemented.

Aji, Ardin and Arifin (2020) concede that the blended learning flexibility assisted educators in providing students with educational materials. In other words, educators could conduct lessons online at any time or place. Aldosemani, Shepherd and Bolliger (2019) further support this, stating that learning through blended learning offers simple, instantaneous, and adaptable access to the content. A study by Kharbat and Daabes (2021) reports that students were well prepared technologically for the online learning experience, including the e-proctored examinations.

Mahlaba and Mentz (2023) accentuate that most lecturers were not familiar with online T & L because they were normally used to conducting their classes face-to-face, but their willingness, self-directedness and motivation were significant factors that could positively affect the transition to online learning. Butnaru *et al*. (2021) findings provide that participants showcased a willingness to communicate electronically and acknowledged the significance of training programmes.

2.7.1 The key online strategies for Teaching and Learning pertinent to South African Higher Education Institutions

This section provides literature concerning the key online strategies for teaching and learning that were helpful to South African HEIs during COVID-19. Therefore, the function of the LMS as a strategy for online T & L during COVID-19, the inevitability of training and re-training and enabling infrastructures for online T & L have been discussed herein.

2.7.1.1 The function of the Learning Management System as a strategy for online Teaching and Learning during Coronavirus Disease-2019

It has been noted that the most important strategy that was used by HEIs in South Africa was the LMS. LMS is a software application that performs a variety of functions to enable lecturers to manage their lessons and coursework (Fernández-Martínez, Elena, Fernández-Pena, GarcíaLópez, Fulgueiras-Carril & Liébana-Presa, 2017). Unlike Western countries, some South African institutions recently adopted LMSs. For example, from 2015 to 2019, many institutions in South Africa had very low student participation rates because the system was new. Blackboard and Moodle are among the types of LMSs that are used

by most institutions for online T & L practices. Moreover, LMS is the most pivotal system that made online T & L successful in many South African HEIs. To emphasise, Caga (2020) indicates that the Blackboard as an LMS improved online T & L during the period of lockdown.

2.7.1.2 Inevitability of training and re-training

Training and re-training have been established as a key factor in determining good effective online learning (Esa, Muda, Ibrahim & Mansor, 2017). It has been reported that intensive training for lecturers and students on the use of online platforms have played a significant role in bettering online T & L (Sasere & Makhasane, 2020). Sasere and Makhasane (2020) surmise that the training and re-training of staff and students may have equipped HEIs to face any emergency that may emerge in the future. This supports the findings of Rhema and Miliszewska (2014), who state that effective virtual learning depends on HEIs providing instructors and students with the necessary training through online learning environments. An inference was drawn by Sasere and Makhasane (2020), who suggest that management teams at the institutional level should be prepared to devote a significant amount of time and resources to training all lecturers and students.

2.7.1.3 Enabling infrastructures for online Teaching and Learning

Sasere and Makhasane (2020) report that the provision of infrastructure necessary for online T & L was essential during the COVID-19 pandemic. Moreover, Sasere and Makhasane (2020) share that online learning and the appropriate pedagogies methods were functional because of the availability of the infrastructural facilities. These infrastructural resources included: Internet connectivity, smartphone accessibility, desktop and laptops/computers. Therefore, even in cases when infrastructure is available, its designs should be examined more closely because high-quality device capacities and bandwidth are necessary for virtual T & L, and it reinforces the need to ensure that lecturers and students have access to such devices (Sasere & Makhasane, 2020). In accord, Joshi (2018) and Pushpanadham (2019) state that high-speed Internet access and the availability of Internet-enabled devices are necessary for the effectiveness of virtual learning.

On online teaching strategies, Kebritchi, Lipschuetz and Santiague (2017) suggest that the content for online learning should include collaborative activities that have corresponding rubrics detailing criteria for interaction and engagement. Kebritchi *et al.*

(2017) further assert that interaction between the instructors and the students play a major role in the success of online learning. In addition, interaction among the students should not be underplayed, as it promotes cooperative learning.

Miclea (2020) suggests that universities should implement the following strategies to maximise the effectiveness of online T & L: developing support materials such as guides, methods, and resource packages for transitioning instruction online; utilising specialised online learning platforms and official websites dedicated to online initiatives; providing regular communication, explanations, and interactive sessions like Q&A sessions for instant feedback using platforms such as WhatsApp or email; and implementing specific measures aimed at ensuring educational equity, especially for vulnerable groups who are more susceptible during crises

Findings indicate that the production of online content and assessments in HEIs is often insufficiently planned (Rashid & Yadav, 2020). Consequently, it is recommended that all stakeholders involved in online T & L take proactive steps to enhance these processes and implement effective online learning techniques. Moreover, educators should be granted professional autonomy, trusted to make informed decisions, and encouraged to communicate effectively with students (Rashid & Yadav, 2020).

2.7.1.4 Interventions by universities and the Department of Higher Education and Training

The shift from traditional learning to online learning has been highlighted in 2.6 of this study to have not been a smooth transition due to the challenges that were encountered. However, South African universities and the DHET offered support to the staff and students to ensure a fair transition to online T & L (Ramsuraj, 2021). The DHET subjected all universities to using multimodal T & L. To give a brief explanation, multimodal T & L covers both contact T & L and online T & L (Republic of South Africa, 2020). Because of the mass reports of cases of challenges related to Internet connectivity and access, the universities and DHET provided a panacea through the disbursement of data to students with the aim of mitigating the internet crises (Republic of South Africa, 2020). Additionally, the University of Pretoria [UP] (2021) indicates that during COVID-19, universities made the decision to support students who needed data.

Students who were unable to return to campus because they did not have sufficient connectivity at home were given the opportunity to fill the survey for data bundle (UP, 2021). The Internet providers, universities, and DHET reached an agreement to provide

zero-rated access to certain websites. Therefore, students were able to access nearly five hundred (500) websites without consuming data (Duncan-Williams, Angelucci, Tshoto & Moloi, 2020).

2.7.1.5 Coping Strategies Employed by Rural Universities in the Adaptation to Online Teaching and Learning During Coronavirus Disease-2019

Miclea (2020) state that during COVID-19 universities were forced to employ strategies for a situation that was unexpected. As a result, universities deployed various strategies to ensure that lecturers could reach students effectively, which included: Providing T & L with resources such as documents and resource packages for the effectiveness of the online environment, using online learning platforms and websites, supporting students and staff through frequent communications and supplying resources essential for online T & L, providing instant specific measures such as electronic devices to assist the vulnerable academic group that they could not afford to purchase the electronic devices, institutions adjusted the assessments through reorganised assessments such as the reprogramming of examinations, the use of technology, such as WhatsApp was one of the effective tools to share knowledge to fill the gap created by the pandemic.

Jantjies (2020) reports that WhatsApp was used for educational purposes amid COVID-19. Instructors and students created WhatsApp learning groups to assist student to capture information essential for online education such as images of book pages. Moreover, Jantjies (2023) indicates that student used their smartphone apps to access instructional materials, allowing classes to continue. In addition, Naidoo and Moonasamy (2022) report that students indicated the success of online T & L during the lockdown depended on the use of digital platforms such as WhatsApp. WhatsApp has demonstrated the ability to facilitate the sharing of educational resources, including presentations, voice notes, videos, lectures, and links, to improve the process of online T & L (Naidoo & Moonasamy, 2022).

Glietenberg, Petersen and Carolin (2022) reveal that COVID-19 enlightened universities to move towards a more blended learning and teaching approach. The aim of adopting blended learning and teaching was to prevent any disadvantages or hindrance of online T & L (Glietenberg, Petersen & Carolin, 2022). Importantly, Glietenberg, Petersen, and Carolin (2022) advocate for institutions to promote blended T & L, believing it to be essential for the future continuity of education. Modise and Molotsi (2022) highlight that many HEIs in Africa are embracing blended T & L and online T & L, supporting the need for the continuous training of lecturers and students.

2.8. THEORETICAL FRAMEWORK ON ONLINE TEACHING AND LEARNING DURING CORONAVIRUS DISEASE-2019

Theory is defined as an idea or set of ideas that is intended to explain something about life or the world, especially an idea that has not been proven to be true, general principles and ideas about a subject, an idea or opinion that someone thinks is true but for which they have no proof (Dictionary of Contemporary English, 2003). However, in Social Science research, theories are formulated to explain, predict, and understand phenomena, and in many cases, to challenge and extend existing knowledge within the limits of critical bounding assumptions. The theoretical framework is the structure that can hold or support a theory of a research study. In addition, theoretical framework introduces and describes the theory that explains why the research problem under study exists (Dictionary of Contemporary English, 2003). This study was guided Connectivism Learning Theory (CLT), which was founded by George Siemens, and Stephen Downes in 2004.

The CLT is of the view that technology is essential to online education and that it allows people to stay in touch even when they are in various locations (Siemens, 2005). According to Dziubaniuk, Ivanova-Geongne and Nyholm (2023), technology is now perceived as a necessary component of education at HEIs. Since technology was a major factor in COVID-19 when schools shifted from in-person to online instruction, the CLT was deemed applicable to this study. Goldie (2016) indicates that CLT acknowledges technology as a crucial component of the learning process and notes that students could choose how they learn because of their constant connectivity. Moreover, CLT highlights how digital technology helps people access a variety of information sources and develop the skills necessary to evaluate these sources within an information network (Dunaway, 2011; Utecht & Keller, 2019). Spencer (2004) agrees with Siemens(2005) by stating that, one of the benefits of technology in CLT is that it allows students and educators to continue their conversations and exchange ideas outside of class. It also encourages student participation and gives them new ways to interact.

2.8.1 Connectivism Learning Theory

As stated, CLT was first founded in 2004 by Siemens and extended by Downes 2005. However, Siemens (2004) specifically focuses on the social aspects of connectivism, while Downes (2005) shares that CLT is centred around non-human objects (Appliances) and

technology-based learning (Western Governor University, 2021). Therefore, the researcher consolidated both Siemens' and Downes' perspectives on CLT to explain the lecturers perceptions of online T & L practices amid COVID-19.

The CLT is a relatively new learning theory that proposes that students and educators should integrate thoughts, theories, and background information in a useful manner (Downes, 2004). It also recognises that technology plays a significant role in learning, as well as the fact that people can choose to learn in a variety of ways because of their constant connectivity. On that note, Siemens (2004) points out that connectivism also promotes group cooperation and discourse, and facilitates differing viewpoints and perspectives during decision-making, problem-solving, and information interpretation. Social media, online networks, blogs, database information and Internet connectivity are all examples of connectivism, which promotes learning outside of an individual's personal space (Western Governor University, 2021).

Downes (2006) indicates that connectivism is an emergence-based theory that can be applicable to online and distance education modes. In this study, the researcher explored the lecturers' perceptions of online T & L and emphasised the use of technologies, as required for effective online T & L. The researcher also considered social aspects such as the challenges encountered by lecturers when providing online T & L during COVID-19.

Kop and Hill (2008) state that digital learning platforms such as online courses, webinars, social networks, and blogs help students and educators to teach and learn effectively. The CLT holds the belief that people's knowledge is formed by connecting various 'nodes' of information. As a result, the process of learning continues as people make and maintain these connections. Based on this theory, students and educators are networks of nodes. Nodes are objects that connect to other objects, like books, web pages, people, etc. The same applies to online T & L where students and lecturers connect to each other by simply using online T & L technologies (Downes, 2006).

Online T & L occurred due to the outbreak of COVID-19 and acted as a node to link or connect students and educators so that the process of T & L can continue. Unlike traditional T & L practices and theories such as constructivism and cognitivism, online learning has shifted T & L practices from being educator-centred or lesson centred to student-centred. The educator's job now is to guide students to become effective agents in their own learning and personal development (Kop & Hill, 2008).

2.8.2 The criticisms of Connectivism Learning Theory

Kerr (2007) criticises the CLT because it resonates with the current technology and practices. Hence, Kerr (2007) suggests that new theories can emerge in response to new developments of technologies to which the CLT might be no longer applicable. On the hence side, Goldie (2016) and Kop and Hill (2008) are of the view that connectivism lacks empirical research supporting its claims. However, Kop and Hill (2008) enunciate that one of the key strengths of connectivism is that it uses web-based activities to illustrate learning. In spite of this, a new theory needs to consider all possible contexts in which learning may occur.

The CLT knowledge is distributed throughout a network of links and is processed by specialised nodes or information sources (Downes, 2007). The theory also encourages people to study more than they already know. Furthermore, the theory states that to support ongoing learning, connections must be nurtured and maintained. Moreover, the theory reveals that one of the essential skills it holds is the capacity to recognise connections across various fields, ideas, and concepts (Siemen, 2005). Therefore, Wade (2012) provided a critique by comparing connectivism theory with instructional theory and saying that connectivism sounds more like an instructional theory because instructional theory also holds a belief in the specificity of instruction each learning context, rather than a learning theory that limits its horizon to general principles.

Terry (2010) avers that connectivism holds that individuals, information, and knowledge are not autonomous entities but rather are interconnected through webs of context, culture, and prior connections to others. The framework necessitates the simultaneous existence of learning networks. This raises two quick concerns based on Wade (2012): (1) What was the process by which the pre-connection content knowledge evolved to form learning networks? (2) Did learning networks or learners emerge first? .Siemens (2005) admits that knowledge and learning can exist in the artifacts and communities where people interact with one another, independently.

Wade (2012) suggests that connectivism theory cannot be considered as a learning theory because it is unable to explain what constitutes learning. On that account, Wade (2012) asserts that the problem with connectivism theory is the notion of being limited while the purpose of learning theories is to be universal applicable. This is consistent with Fulton and Maddock's (1998) assertion that no learning theory can explain any human behaviour if it is unable to account for every aspect of it.

Furthermore, Calvani (2008) criticises connectivism, saying it is encased in its own mythical fabric, incapable of self-reflection. Wade (2012) further submits that the theory says that everything connected to a network is a knowledge producer and that the network itself is an essential knowledge. As a result, it skips over the claim that certain knowledge that a person can access through nodes comes from reputable academic sources and that other knowledge comes from untrustworthy sources. The connectivism approach heavily relies on digital tools and platforms, necessitating digital literacy among students and educators for effective participation. Based on Alam (2023), this reliance implies that individuals lacking digital resources or literacy may be unable to acquire knowledge within this framework. This digital dependency highlights a potential barrier to access and equitable learning opportunities in connectivist environments.

Connectivism has faced criticism for attempting to replace the old learning theories. Kop and Hill (2008) demonstrate that the connectivism learning theory does not support and complement other learning theories such as behaviourism, constructivism learning theory, and others. The idea of replacement claim is dismissed by Goldie (2016) who notes that although connectivism acknowledges the paradigm shift in learning, its contributions are not justified by addressing it as an original and independent theory. Moreover, connectivism does not add to the principles of existing theories. However, Downes (2005) is credited by Kop and Hill (2008) for developing an epistemological framework for distributed knowledge, which serves as a solid philosophical foundation for the connectivist learning paradigm.

2.8.2.1 The lack of human contact as a challenge for Connectivism Learning Theory

A concern was expressed by Greenwood (2020) regarding the emphasis on language of communication, noting that text-based conversations differ greatly from audible ones in terms of their experience. This raises another issue with the connectivism theory for having insufficient actual human interaction (Greenwood, 2020). Connectivism is reported to be reducing human contact and increasing the duration of time that students spend using computer systems. This translates to fewer lengthy discussions and less time spent building genuine social skills. To give students the best of both learning experiences, educators probably need to be adopting a hybrid kind of connectivism in the context of schools, combining elements of wider constructivism.

2.8.2 Student Agency

In the early days of connectivism, researchers raised the question of whether students would be able to manage to be self-directed and self-motivated students (Kop (2011). Kop (2011), for example, concluded that not all students could independently direct their own learning and achieve critical literacies after studying personal learning environments networks and knowledge connectivist courses. In addition, Mackness and Bell (2011) and Gonçalves and Osório (2018) assert that students were disengaged from their online education. In overall, students get motivated in education when they are with lecturers and other students in a physical environment rather than acquiring information independently in their own comfort zone online, which connectivism theory emphasises on.

2.8.2.3 Conceptual gaps

The question of whether connectivism can explain concept development is at the centre of one line of criticism. Critics also query that students using connectivist technique are not capable of producing or constructing conceptual knowledge on their own (Clarà & Barberà, 2013). Moreover, Clarà and Barberà (2013) contend that connectivism falls short in its explanation of concept development. Such criticisms have been around for a while now. Al-Dahdouh (2018), for instance, says that connectivism is unable to explain how students make connections with the range of resources. Moreover, how a learner forms a connection to a node can be summarised into three consecutive stages that CLT does not mention: (1) planning and forethought; (2) cognitive processing; and (3) evaluating. This suggests that a procedure beyond connectivist teaching is necessary (Al-Dahdouh, 2018).

2.8.3 The lasting values of Connectivism Learning Theory

Throughout the COVID-19 pandemic, the HIEs used several T & L strategies and tactics to keep disseminating knowledge (Dziubaniuk, Ivanova-Gongne & Nyholm, 2023). These techniques included the use of online communication tools and technological devices to support online learning and quick access to relevant information for academics (Al-Mutairi & Mubayrik, 2021). Therefore, the CLT was applied in this study to investigate lecturers' perceptions of online T & L during COVID-19. The study benefited from connectivism since it viewed knowledge as a network in which learners and educators create connections between pieces of information while interacting with diverse technologies like employing online T & L amid COVID-19 (Dziubaniuk, Ivanova-Gongne & Nyholm, 2023). Thus, the theory assisted the researcher in understanding online T & L in depth. The ongoing communication between instructors and students during COVID-19 created a setting in

which decisions that promote learning could be made. Online T & L is valuable in allowing group collaboration and offering a variety of perspectives to assist in decision-making, problem-solving, and information comprehension for online education (Owusu-Acheaw & Larson, 2015). The online platforms that students and educators use to connect for social communication lead to knowledge formation. Furthermore, the interaction between lecturers and students and then students among themselves provides a network of connectedness (Naidoo & Moonasamy, 2022).

2.8.3.1 Connectivism Theory and digital learning

Bharucha (2018) claims that connectivism explains how people can learn from the Internet in a variety of ways even when they are separated by distance. Dunaway (2011) and Utecht and Keller (2019) highlight that CLT is important for digital technology because it provides students and educators with access to a variety of information sources and fosters the development of skills necessary for evaluating these sources within an information network. Information technologies are an essential component of learning facilitation because, in accordance with connectivism, knowledge is created when a learner forms connections in their mind between concepts, ideas, and opinions that are accessible through Internet-enabling technologies (Dunaway, 2011). In support, Siemens (2005) explains connectivism, which allows students to learn through connections, ideas, and different viewpoints derived from the information learned through networking or connections. The values of the CLT on the analysis of online T & L during COVID-19 are explained below:

2.8.3.2 Learning as a connection of specialised information sources

Niu, Niemi, Harju and Pehkonen (2021) indicate that CLT expresses that students build logical connections between concepts, ideas, and opinions to form a network of knowledge. In this instance, the key to learning is making connections between previously acquired and new information. Dziubaniuk, Ivanova-Gongne and Nyholm (2023) point out that for students and lecturers to establish connections in online T & L, they need to use knowledge gathered from articles, forums, social networking sites, and conversations among themselves at the meetings hosted by social media platforms such as Zoom as well as through an examination of the websites and related media material. As a result, technology is recognised because it facilitates access to a wide range of information sources, while course instructors guide students' learning.

2.8.3.3 Learning resides in non-human appliances

Dziubaniuk, Ivanova-Gongne and Nyholm (2023) maintain that learning skills for the critical evaluation of data sources and information retrieval are fostered by digital technologies. This relates specifically to the digital literacy skill of critically evaluating social media platforms (Utecht & Keller, 2019). To find the most pertinent information, Dziubaniuk, Ivanova-Gongne and Nyholm (2023) suggest that students and educators should learn how to use search engines to find data and filter information. Rapid information availability has established itself as the new norm, which has an impact on learning (Saykili, 2019). It is claimed that non-human appliances like computers, Moodle, and Zoom have had a significant impact on online education during COVID-19 (Dziubaniuk, Ivanova-Gongne & Nyholm, 2023).

2.8.3.4 The pursuit of knowledge and capacity to learn beyond understanding

Siemens (2007) says that learning new things is more important than holding past knowledge. This claim supports the notion that, unlearning, and relearning can offer a fresh, critical perspective on reality, as opposed to simply knowing certain facts (Utecht & Keller, 2019). Hence, Siemens (2007) says, it is more important to learn than to know. Utecht and Keller (2019) state that every day, fresh information is added to the online database, which is constantly being updated. Connectivism thus recognised that educators and students could now search for, process, or extract pertinent information that is crucially important by connecting various sources with technology in the educational setting. For the development of critical thinking, a critical evaluation of information is also crucial (Niu *et al*., 2021). Therefore, connectivism and online learning converge because they both advocate that technology have made information accessible easier through consultation of internet websites. On that note, new information is always updated making it simple for educators and students to add more information with what they already know.

2.8.3.5 Nurturing and maintaining connection to facilitate continuous learning

From the perspective of connectivism, learning happens when people collaborate on tasks (Siemens, 2005). In this instance, collaboration happens across time and space in addition to direct communication between students and educators (Utecht & Keller, 2019). Dziubaniuk, Ivanova-Gongne and Nyholm (2023) indicate that the discussions facilitated by the instructors through Zoom and other online platforms assist in the creation of

good group assignments and the sharing of new knowledge. As a result, it improves the social and online interactions between students and educators that are necessary for online T & L (Dziubaniuk, Ivanova-Gongne & Nyholm, 2023). This study benefited from the application of CLT, as it highlighted the role that technology plays in maintaining connections for online T & L. Although the researcher took note of the concerns and criticism expressed by other scholars, the theory was essential in defining its positive implications for this research. These benefits included the maintenance of relationships and online communication as well as the critical role that technology and online learning environments played in the study.

2.8. SUMMARY OF THE CHAPTER

The chapter provided a broad overview of online T & L during COVID-19 by identifying the key challenges and opportunities it brought, focusing on one of South Africa's HEIs. Furthermore, it underscored the preparedness of staff and students for online T & L, the associated effects, the quality of online T & L in modern education, the challenges encountered by staff and students, and the strategies to improve online T & L. This chapter also outlined connectivism learning as the theoretical framework guiding the study. The next chapter (Chapter Three) discusses the research design and methodology of the study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1. INTRODUCTION

The previous chapter outlined the selected literature review and the connection between the theoretical framework adopted and online T & L during COVID-19. In this chapter, the researcher discusses the research design and methodologies employed. The purpose of this chapter was to examine the reasons for implementing the adopted methodologies and designs. The study was best suited for an exploratory research design because the design is commonly employed in research projects that have not been thoroughly investigated. Moreover, this chapter comprises the research design, population of the study, sampling method, data collection, data analysis, methods to ensure trustworthiness and ethical considerations.

According to Murthy and Bhojanna (2009), methodology serves as the blueprint or framework for a research endeavour, encompassing the methods by which data is acquired, organised, and analysed. This includes delineating the study's design, setting, sample, data collection instruments, and analytical techniques (Maree, 2007). Maurel, Busso, Frachon, and N'Guyen (2014) define methodology as a systematic approach to solving research problems, similar to a scientific study of research practices. Neuman (2014) elaborates further, describing methodology as the overarching structure encompassing the social-organisational context, philosophical underpinnings, ethical considerations, and political implications of the research process. Methods, on the other hand, as described by Neuman (2014), pertain to the specific techniques employed within a study for case selection, data measurement, observation, data gathering, refinement, analysis, and reporting of findings. In essence, methodology delineates the path researchers follow in conducting their research, guiding the formulation of research questions, objectives, and the presentation of results derived from the study's data (Sileyew, 2019).

3.2. RESEARCH DESIGN

A research design encompasses the methods and techniques employed by a researcher throughout a research study (Creswell, Plano & Clark, 2007). Creswell *et al.* (2007) further characterise it as a systematic approach for collecting, analysing, interpreting, and reporting data within a research investigation. Additionally, Burton (2000) defines research design as a structured plan of inquiry utilised to gather data for addressing research inquiries. Moreover, Msweli (2011), Fox and Bayat (2008) conceptualise research design as the overarching strategy for addressing research questions, including aspects such as participant recruitment and data collection methods. Thorogood and Green (2018) assert that a research design aims to elucidate the "what, how, and why" of data production, focusing on issues related to data gathering and analysis techniques or methodologies.

In this study, the researcher opted for an exploratory research design due to the limited literature available regarding analysis online T & L during the COVID-19 pandemic within the Department of Criminology and Criminal Justice. Grinnell, Unrau, and Williams (2009) argue that when there is little existing knowledge about a phenomenon, exploratory research should be considered. Because the purpose of such a design is to uncover data or facts about the phenomenon under investigation and to gain as much insight as possible (Saunders *et al*. 2007). Similarly, Brown (2006) suggests that exploratory research design is often suitable for entirely new problems that have not been extensively studied before. Saunders *et al*. (2007) emphasise that exploratory research is employed when there is insufficient information about a phenomenon or when a problem is not clearly defined, focusing on addressing novel issues with minimal prior research attention (Brown, 2006).

De Vos, Strydom, Fouche, and Delport (2005) propose that an exploratory research design is carried out to gain deeper insight into a phenomenon. Burns and Grove (2014) emphasise that the aim of employing an exploratory research design is to uncover and enhance understanding of a phenomenon. Singh (2007) considers exploratory research design as laying the foundation for subsequent definitive investigations and determining initial research design, sampling methodology, and data collection methods. Data collection techniques commonly utilised in exploratory research comprises of in-depth interviews, focus group surveys, and observations, among others (Brown, 2006). The researcher adopted this strategy because it was appropriate for enhancing knowledge on online T & L during COVID-19. In addition, Case Study (2019) asserts that an exploratory research design, like other research designs, comes with advantages and disadvantages. The advantages are as follows: Exploratory research design is a helpful method for gaining a basic understanding of a particular topic; therefore, exploratory research is adaptable

and can answer research questions in a variety of research domains (what, why, and how); it also offers a chance to define new terms and define concepts that already exist.

To add into the account of topics that have not being thoroughly investigated ,George (2023) indicates that an exploratory research design can be helpful in addressing research topics that have not been clearly explored. Moreover, Semwal (2022) states that an exploratory research enables scholars to develop innovative problem-solving approaches. Furthermore, exploratory research is said to increase the flexibility of a research as well as bettering the results to be more credible and reliable (Semwal, 2022). Lessila (2018) suggests that an exploratory research design increases the researcher's understanding and determines the possible causes of the problem being investigated. It has been reported that when exploratory research is conducted effectively, it can lay the groundwork for any future studies revolving around the same issue (Voxco, 2019).

Exploratory research design has disadvantages which include: Small sample sizes leading to findings that may not apply broadly, difficulty in drawing conclusive decisions due to the exploratory nature, flexible yet often unstructured research processes yielding tentative results of limited use to decision-makers, and a lack of rigorous standards in data gathering and analysis (Case Study, 2019). Voxco (2019) proffers that the results of exploratory research tend to be tentative and questionable as well as the small sample used in exploratory research raises questions about the responses from the sample to not accurately reflect the characteristics of the overall population. George (2023) supports the assertion made by Voxco (2019) by saying that, exploratory research lacks definitive or conclusive outcomes and due to that, the results are more likely to be biased. Semwal (2022) indicates that exploratory research frequently has an exploratory nature, meaning that the researcher's objectives are not always clear. As a result, both the researcher and study participants may experience confusion and frustration at times.

3.3. RESEARCH APPROACH

A research approach is a systematic plan that provides guidance for conducting research in a methodical and efficient manner (Creswell, 2009). In this study, a qualitative research approach was employed. Denzin and Lincoln (2005) define qualitative research as a comprehensive method that embraces an interpretative, naturalistic perspective towards the subject matter. The nuanced nature of qualitative research allows researchers to develop a holistic understanding of the phenomenon under investigation. Qualitative

research aims to immerse the researcher in the phenomenon by ensuring an in-depth comprehension through observation or interaction with selected participants (Denzin & Lincoln, 2008). As a result, qualitative researchers focus on exploring or elucidating phenomena as they occur in their natural context. This entails studying phenomena in their natural settings to comprehend their significance (Denzin & Lincoln, 2008).

3.3.1 Advantages of a qualitative research approach

Qualitative research offers several advantages. Firstly, it generates detailed descriptions of participants' thoughts, feelings, and experiences, enabling a deeper understanding of their behaviour and their significance (Chalhoub-Deville & Devill, 2008). Secondly, qualitative approaches are adept at uncovering the inner experiences of participants, providing rich insights into various aspects of language assessments, including their design, administration, and interpretation (Corbin & Strauss, 2008). Moreover, qualitative methodologies facilitate an understanding of markers' assumptions regarding the subject matter being evaluated and the significance of grades or scores. Furthermore, the flexible structure of qualitative research designs allows for iterative development and reconstruction, enhancing adaptability and refinement throughout the research process (Maxwell, 2012)**.**

3.3.2 Disadvantages of qualitative research approach

Silverman (2010) suggests that qualitative research approaches, while focusing on meanings and experiences, may inadvertently neglect contextual sensitivities, potentially diminishing the credibility of results in the eyes of policymakers. Furthermore, smaller sample sizes acquired in qualitative methods raise concerns regarding the generalisability of findings to the broader research population (Harry & Lipsky, 2014). Case analyses, which are common in qualitative research, demand substantial time investment, and the ability to generalise findings to a larger population is limited (Flick, 2011).

3.4 Study location

Figure 1: Map of the University of Limpopo

Source: Sefara (2014).

The University of Limpopo (UL) is situated in Turfloop within the Mankweng Area of Polokwane, under the Capricorn District in the Limpopo Province. Established in 1960, UL was originally known as the University College of the North, with a mandate to serve the Basotho, Vhavenḓa, and Vatsonga ethnic groups (SOVENGA) (White, 1997). In 1969, the apartheid government granted autonomy to the University College of the North, separating it from the University of South Africa, and this change took effect on 1 January 1970 (Ndebele, 1994). Subsequently, in 2005, the institution was renamed the University of Limpopo (UL). The medium of instruction at UL is English. Prior to COVID-19, UL was delivering T & L through blended T & L, which incorporated both contact and distance learning using an LMS called Blackboard. However, the LMS was primarily used to post notes and announcements. Thus, UL has now enacted online education as a primary tool for T & L.

3.5. Study population

Population is defined as a comprehensive group in the study of all representatives of a real or hypothetical set of individuals, events, or objects from which a researcher desires to generalise the result (Emilia, Florian, Philippe, Vincent, Barthelemy & Frédéric, 2010).

In the research study, there cannot be a sample without the target population. According to Kitchenham and Pfleeger (2002), the target population is the group or the individuals to whom the sample is extracted, and the sample that is acquired from a targeted population should be represented as a final list. In this study, the overall population of this study consisted of academic staff, support staff and all registered students under the Department of Criminology and Criminal Justice. A sample entails the elements of the population being studied (Fox & Bayat, 2007). Kitchenham and Pfleeger (2002) define a sample as a representative subset of the target population. The ideal population of this study included Thirteen (13) participants, inclusive of Ten (10) permanent academics, Two (02) contracted Research Associates (RAs) and One (01) Secretary, all attached to the Department of Criminology and Criminal Justice of UL.

3.6. Sampling procedures

Sampling is the process of selecting only a sample that is a subset from a defined population as participants in a study (Guest, Namey & Mitchell, 2013). According to Thompson (2012), sampling involves following a rigorous procedure when selecting units of analysis from a larger population. Cole (2021) further elucidates that the purpose of sampling is to examine the data and estimate the characteristics of the entire population based on the collected information. In order for the researcher to select the participants, the following elements were considered:

- The participant should be a staff (Lecturer) in the year that the researcher will be collecting data at UL.
- The participant should be a lecturer / RAs / Secretary, under the Department of Criminology and Criminal Justice at UL.
- The participant should be someone who consents or is willing to participate in the study.

For sampling purposes, Showkat and Parveen (2017) say that non-probability sampling differs from probability sampling because it uses non-randomised methods to draw the sample. Unlike probability sampling, the non-probability sampling technique is frequently used in qualitative research. For non-probability sampling, each subject that is assumed to take part in the study does not have an equal chance of being selected for that specific study (Grinnell, Unrau & Williams, 2009). During non-probability sampling, the researcher is driven by judgment when picking the participants and considers the accessibility of the participants (Showkat & Parveen, 2017).

For this study, non-probability, purposive sampling was employed. In purposive sampling, the researcher chooses participants who are deemed to be a representative sample of the entire population. This determination is based on information that is currently available or the researcher's understanding of the population (Jansen van Rensburg & Van Niekerk, 2010). Moreover, Michalos (2014) defines purposive sampling as the deliberate choosing of participants that can best explain a particular subject matter, idea, or phenomenon. Strydom and Delport (2011) indicate that when the researcher employs purposive sampling, intentionally selects samples based on judgment or because the participants fall under a certain category of the researchers' interest. Purposive sampling was chosen by the researcher in this study for several reasons, which include its practicality and the researcher's ability to select participants who are pertinent to the study's design. The targeted sample was the staff members, specifically lecturers. Out of the 13 participants, all 10 permanent lecturers formed part of this study, excluding the contracted RAs. The researcher picked the mentioned participants purposively while bearing in mind the study's purpose and avoided biasness (Showkat & Parveen, 2017).

3.7. Data collection methods

Simplelearn (2021) assert that data collection involves selecting, assessing, and analysing precise information from various sources to address research problems, evaluate results, and estimate patterns and probabilities. On that note, Casey (2006) defines data collection as the systematic gathering of relevant information aligned with the purpose, objectives, questions, and hypotheses of the study. Additionally, Casey (2006) characterises data collection as the process of systematically gathering observed information on variables of interest, enabling the researcher to answer stated hypotheses and evaluate outcomes. Maree (2015) notes that researchers have a variety of options when it comes to gathering data from a sample of participants. In this study, the main method of data gathering used by the researcher was semi-structured KIIs. To accommodate participants in this study, the interview questions were formulated in English because the researcher collected data at an institution that accepts English as a medium of instruction.

3.7.1 The Semi-structured Key Informant Interviews

Seale, Giampietro, Gubrium and Silverman (2004) share that an interview is defined as a social encounter in which participants collaboratively create retrospectives and prospectives of their past and future, experiences, feelings, and attitudes. To gather

information from participants, the researcher used a semi-structured Key Informant interviewing method. The semi-structured interviewing method enables the researcher to maintain uniformity throughout the interview sessions. In this study, ten (10) lecturers were sent the link to answer the interview questions about their perceptions of online T & L using Google Forms. Only 9 participants out of 10 completed the Google Form and sent it back to the researcher. The reasons behind selecting the lecturers as the interviewees of the study are because some of them have had experience with online education before and the fact that they oversee the online learning content which means they have first-hand encounters with online T & L.

KIIs method proved beneficial by standardising the question sequence and framing answers within a consistent context. Semi-structured interviews offer the advantage of reducing bias among participants (Aamodt, Brecher, Kutcher & Bragger, 2006). KIIs serve the purpose of gathering information from a diverse range of individuals, such as community leaders, professionals, or residents possessing first-hand knowledge of a specific subject. Experts selected to contribute their knowledge and understanding can offer insights into identified problems and provide recommendations for potential solutions (Maluleke, 2016).

3.7.2 Literature reviews

Hart (1998) defines a literature review as an unbiased, comprehensive overview and critical evaluation of the pertinent extant research and non-research literature on the subject under investigation. In basic terms, the purpose of a literature review is to update the reader on the most recent research on the subject under study. Carnwell and Daly (2001) state that a literature review needs to have a well-defined search and selection strategy. In literature reviews, referencing is crucial, so it needs to be precise throughout the review process (Colling, 2003). In an academic paper, a literature review is typically conducted as a stand-alone topic. It is essentially an overview of all relevant work on the subject under investigation (Colling, 2003).

A literature review involves the identification of pertinent published and unpublished materials related to a particular subject, often written from a distinct perspective to fulfil specific objectives or convey particular viewpoints regarding the nature of the subject and optimal research approaches. It also entails the thorough evaluation of these documents in relation to the proposed research (Sajeevanie, 2021). According to Randolph (2009), conducting a literature review allows an author to showcase their comprehension of a

specific field of study, encompassing its terminology, theories, significant variables, phenomena, methods, and historical context.

The study's focus was an analysis of online T & L during COVID-19. To address this, a thorough and pertinent literature review was carried out with the intention of confirming the study's conclusions. The purpose of this study was, as stated by Neuman and Fawcett (2002), to show that the researcher was familiar with an existing body of knowledge about the research subjects and to establish the credibility of that knowledge. It also aimed to integrate and summarise existing knowledge about the research area, learn from others, and stimulate new ideas. To find the chosen literature review, the researcher searched a variety of databases, including governmental publications, journals, newspapers, directories, reports, dictionaries, published books, magazines, and other accessible sources. The reviewed literature was discussed in-depth in Chapter Two of this study.

3.8. Data analysis methods

Bryman (2004) defines data analysis as the process of analysing data to gain a deeper understanding of the raw material. Before analysing the participants' responses, the researcher edited the provided responses for completeness and consistency. The data collected were grouped into categories. Importantly, the findings of this study were analysed using the inductive TCA, which involves categorising the study's themes from the gathered data. Inductive TCA is the process of distinguishing, assembling, and discerning themes from a data set (Braun & Clarke, 2006). According to Yegidis, Weinbach and Myers (2018), thematic analysis is a technique for handling enormous amounts of data without losing context. Braun and Clarke (2006) state that thematic analysis is a rigorous method that produces reliable and insightful discoveries. To accomplish that in this study, the Six (06) phases of thematic analysis proposed by Braun and Clarke (2006) were applied to analyse data. These phases are discussed as follows:

3.8.1 Familiarising yourself with your data

Clarke and Braun (2017) showcase that becoming familiar with the data involves the researchers being fully immersed in it through repeated reading of textual information, engaging with audio recordings, and viewing video data. On that note, Terry, Hayfield, Clarke, and Braun (2017) describe familiarisation with the data as the backbone of a rich thematic analysis. Moreover, Terry *et al*. (2017) say that familiarisation gives the

researcher a starting point for analysis as well as a means of interacting with and gaining an understanding of what can occasionally seem like an overwhelming mass of data. The interviews for this research were distributed using online platforms called Google Forms. The first thing the researcher did was to take the time and interact with the data collected from Google Forms and to check whether the data was complete and consistent. The texts were read numerous times for the researcher to be fully acquainted with the data. Thereafter, the researcher retyped the information into a text, and read and reread the transcripts repeatedly. These processes were repeated numerous times and the useful information was coded.

3.8.2 Generate Initial Codes

Terry *et al*. (2017) define coding as the process of pinpointing relevant information within each data item and then labelling those segments with a few words or a memorable phrase that conveys their meaning to the researcher. Similarly, Braun and Clarke (2017) characterise codes as fundamental components of thematic analysis, serving to identify and label features of the data that are pertinent to the research question. The researcher identified codes, representing noteworthy features of the data, which were then used to establish themes across the dataset. To ensure comprehensive coverage, all initial codes received equal attention, with data deemed important forming the foundation for emerging themes.

3.8.3 Searching for Themes

A theme is a recurring pattern within a document that signifies something meaningful or noteworthy in relation to the data or research inquiries (Braun & Clarke, 2006). Terry *et al*. (2017) indicate that finding or creating themes is an active phase in the process of forming and identifying patterns. Furthermore, Braun, Clarke, and Terry (2015) point out that the researcher must identify a central organising concept, a distinct idea or concept that serves as the foundation for a theme during this process. This is because, as they have revealed, finding themes is an active process in which meanings are created rather than found. In this study, all the coded data were sorted, collated, and extracted into themes. The themes were identified by bringing together the ideas or experiences of the participants. The researcher verified whether the themes identified correlated with the entire data.

3.8.4 Reviewing Themes

Braun and Clarke (2017) suggest that this stage entails a recursive procedure in which the evolving themes are examined considering the coded data and the full set of data. In the

work of Terry *et al*. (2017), reviewing themes is an essential step in the thematic analysis process because it helps to further shape, clarify, or even reject the themes. To make sure the themes align with the coded data, the dataset, and the research question, Terry *et al.* (2017) refer to this phase as a quality control exercise. Braun and Clarke (2006) share that this stage assesses whether the themes they have chosen accurately and helpfully represent the content of the dataset. This stage was done after the themes were identified in phase 3. In this phase, the researcher reviewed the themes obtained from each theme to reflect whether they appeared to form a logical pattern. Therefore, relevant issues that were missed when coding data in this study were inserted and some codes that did not have enough support were deleted. At the end of this phase, the researcher had a great idea of different aspects that were identified, how they fit simultaneously, and the general story they told about the data.

3.8.5 Defining and Naming Themes

Terry *et al*. (2017) state that the researcher at this phase has shifted from a summative perspective to an interpretation of the themes during this phase. In order to make sense of the patterning and variety of meanings, this phase entails telling an explanation about the data that is based on it. In this phase, the developing thematic analysis's quality, precision, coherence, and clarity are all checked (Braun & Clarke, 2017). As such, a good test is to see if the researchers can easily summarise each of the themes. If not, they should be able to articulate what makes each theme distinct and special when defining it (Braun & Clarke, 2012). Braun and Clarke (2006:10) explain that in phase 5, the researcher delves into "identifying the essence of what each theme is about." This involves not only describing the core content of each theme but also exploring its significance and the researcher's interest in it. Through this process, the researcher of this study narrated the themes that unfolded, revealing their interconnections with other themes and their relevance to the overarching research questions.

3.8.6 Producing the report

Terry *et al*. (2017) provide that at this phase, researchers have already completed a significant amount of writing for qualitative analysis. This stage encompasses familiarisation notes, codes, theme definitions, and extensive additional writing, aiding in the development of the final analysis, which could take various forms such as a dissertation, thesis, short report, or journal article. Braun and Clarke (2012) emphasise the importance of this phase, as it is crucial for researchers to present themes that construct a coherent narrative reflecting the data. Themes should progress logically and

meaningfully, building upon one another to create a compelling and integrated narrative within the scholarly field (Braun & Clarke, 2012). This last phase starts when the researcher has fully ascertained the themes and is prepared to commence with the final analysis and write-up of the report (Braun & Clarke, 2006). In this phase, the researcher fully described how thematic analysis provided concise, coherent, logical, non-repetitive, and interesting data throughout the entire data analysis. The researcher further verified how the data obtained transpired from the interviews used to ensure the credibility of the analysis.

3.9. METHODS TO ENSURE TRUSTWORTHINESS

In this study, the researcher ensured the rigour of the qualitative using the following criteria presented by Lincoln and Guba (1985): Credibility, dependability, confirmability, and transferability. Each of the components has been thoroughly examined in the discussion below.

3.9.1 Credibility

In qualitative studies, credibility pertains to maintaining congruency and confidence and is regarded as the most crucial criterion (Coleman, 2022). Polit and Beck (2014) define credibility as the accuracy and authenticity of the researcher's interpretation of the data. Scheman and Gust (2011) state that credibility is the degree of truthfulness of the findings, depending on the methods used for data collection and analysis as well as the interpretation of the data. Prolonged engagement, such as observation or interviews, which necessitates a researcher spending more time in the field, is one of the provisions to ensure the credibility of the study (Awan, Yahya & Arif, 2023). Awan *et al.* (2023) concede that triangulation is a helpful tool for confirming the validity of qualitative research. In line with the discussion above, Fusch, Fusch, and Ness (2018) propose that data triangulation involves researchers gathering data from multiple sources, at multiple times, with multiple participants. A credible method for cross-checking the data's information is member checking, which, in the end, ensures that the study is congruent (Birt, Scott, Cavers, Campbell & Walter, 2016).

First of all, the researcher ensured credibility by employing the six steps of Braun and Clarke (2006) to make sure that the findings accurately reflected the participants' point of view, not that of the researcher. Secondly, the researcher explored the perceptions and experiences of the participants through interviews. At no time did the researcher interfere

with or manipulate the data; instead, the researcher reported and interpreted the data as accurately as possible. To ensure that no relevant information was missed, the researcher asked the same set of questions to all participants and paid close attention to their responses. The similar findings were strengthened by comparing the responses of other participants.

3.9.2 Transferability

Transferability, as defined by Awan *et al.* (2023), is the extent to which the findings of qualitative research can be applied in different settings. To meet this requirement, researchers provide detailed accounts of the context and the participants (Pathmanathan & Gray, 2018). In line with this discourse, Lincoln and Guba (1985) define transferability as the extent to which qualitative research results can be applied to different settings or contexts. As opposed to random sampling, Tuval-Mashiach (2021) provides that purposive sampling is used in qualitative research to ensure a guarantee of transferability. Lincoln and Guba (1985) and Firestone (1993) argue that it is the researcher's responsibility to provide adequate circumstantial information about fieldwork sites or insights into the methods used so that the reader is equipped to make this transfer. In this study, the researcher primarily used interview questions for data collection. By following the data collection instruments, potential users can compare the techniques or methods used in this research to those they have observed in their own environments. Therefore, the research methodology was clearly documented in such a way that other researchers could follow the same steps and might be able to incorporate the methods used in their own research.

3.9.3 Dependability

Janis (2022) demonstrates that dependability is a synonym for reliability because it requires an investigation to demonstrate to its audience that its results would be repeated if it were conducted again using the same or similar respondents (Subjects) in the same or a similar environment. An audit trail, which outlines the procedures followed in a research project from the very beginning through the reporting of the results, is one way to ensure reliability in a qualitative study (Carcary, 2009).

In this study, credibility was strengthened by the dependability of the research findings. Guba (1981) states that dependability relies on whether the findings or the results of the research will be consistent if the research were to be duplicated using the same subjects

and in the same context. Moreover, Anney (2014) showcases that dependability is a term used to describe the stability or consistency of the results. The data applied in the study are reliable and dependable in the sense that every detail featured in the study is true and authentic. The data of this study were collected and analysed with caution and professionalism. Consistency and logic of research were maintained throughout the processes of data collection, analysis, and feedback (Reporting). The research procedures were captured in such a way that other researchers might be able to follow, audit, and assess the study (Moon, Brewer, Januchowski-Hartley, Adams & Blackman, 2016). To accomplish that, the supervisors reviewed the application of the research methods and the results of the analyses, which were done to improve the dependability of the results.

3.9.4 Confirmability

Awan *et al.* (2023) state that confirmability refers to the extent to which the findings of an investigation should be verified by other researchers. Triangulation, according to Morse (2015), is essential to ensuring the confirmability of qualitative research. The practice of audit trails, which involves keeping reflective journals, can also contribute to the confirmation of the results (Awan *et al*, 2023). Korstjens and Moser (2018) highlight that confirmability refers to the extent to which the study can be confirmed or corroborated by others. Korstjens and Moser (2018) further outline that in the context of confirmability, it is essential to ensure that the data and interpretations of the findings are not fabrications of the inquirer, but clearly derived from the participants.

Anney (2014) defines ‘conformability’ as the ability of the investigator to verify that the results reflect the experiences of the respondents and views, not the researcher’s prejudices. In this study, conformability has been achieved by providing an audit trail that detailed each step of the research methodology undertaken in the study. This has proven that the results are accurate, unbiased, and uncoloured by conscious or unconscious bias. As part of the triangulation process, the researcher kept a detailed record of all the literature consulted. The researcher also made use of a reflexive journal that stipulated every step that was undertaken concerning the interpretation of the data and the data collection. Anney (2014) affirms that a reflexive journal is essential because it assists examiners and other potential users to cross the data and confirm the final report of the study.

3.10. ETHICAL CONSIDERATIONS

The researcher adhered to the Ethical Guidelines for Social Sciences Research. De Vos *et al*. (2011:113) define ethics as “a set of moral principles which are suggested by an individual or group, which are subsequently widely accepted and offer rules and behavioural expectations about the most acceptable conduct toward research participants”. The following ethical considerations guided this study.

3.10.1 Permission to conduct study

Permission was requested and granted by the relevant persons and authorities; Departmental Research Ethics Committee (DREC), School of Social Sciences Research Committee (SSrec), Faculty of Higher Degrees Committee (FHDC), and Turfloop Research Ethics Committee (TREC), prior to the data collection of the study.

3.10.2 Informed consent

The researcher ensured that consent forms were given to the participants or respondents. Participants who willingly participated in this study were required to sign the consent form before the data collection process. These forms have been collected and kept safe by the researcher. To strengthen the informed consent, the first question from the Google Form interview guide was “Do you consent to this study, yes or no’’ and Nine (09) participants said yes which means 100% of the respondents agreed to take part in the study.

3.10.3 Voluntary participation

Voluntary participation means that the research subjects have the right to participate in the research study willingly without being forced or intimidated (Bhandari, 2021). Babbie (2010) further contends that involvement in research should always be voluntary and that no one should be coerced into providing a response. In this study, participants were urged to withdraw at any time when they felt like they were uncomfortable or wanted to rest or clear their minds. If the participants left the study prior to completion, they were told that they would not be forced or intimidated to explain themselves or continue with participation. Debriefing was also available for all participants who chose to participate in the study.

3.10.4 Confidentiality and anonymity

Harding (2019) states that confidentiality and anonymity are crucial aspects of safeguarding the personal information of participants in research studies. The researcher

took steps to ensure these protections by storing recorded data using numerical identifiers instead of participants' actual names. Additionally, the use of Google Forms helped maintain participant anonymity. No questions in the study required personal information such as names, surnames, initials, emails, or cell phone numbers. Instead, pseudonyms were used to further protect participant identities. Overall, the researcher implemented reasonable measures to uphold the confidentiality and anonymity of all individuals involved in the study**.**

3.10.5 Honesty with professional colleagues and data protection

Based on Babbie (2010), the researcher had ensured data protection by:

- The researcher reported the findings completely and honestly.
- The researcher did not fabricate, falsify, or misrepresent research data to promote and support a specific finding.
- The researcher did not commit plagiarism, as it is academic fraud. Any use of another person’s ideas or words was fully acknowledged.
- Taking appropriate measures relating to the storage and security of records during and after data collection were appropriate. Therefore, the researcher used pseudonyms and other technical solutions to the problems of privacy.
- When this study was completed, the data gathered were used for research purposes and destroyed in terms of the UL [Research] policy.

3.10.6 Potential for harm

Brew, Boud, Lucas and Crawford (2013) reveal that it is the researcher’s duty to reduce risks and raise the chances of participants offering honest and accurate feedback. Fleming and Zegwaard (2018) note that there are many possible risks associated with a study that must be considered, for both participants, the community, and the institution. The harm comes in different forms ranging from physical, social, psychological (Emotional) to legal (Bhandari, 2021). The researcher made sure that participants we protected from any harmful questions, and it was fully disclosed on the Google Form that was sent to participants that if they had any inquiries or faced difficulties concerning the line of questions, they could contact the researcher, or the supervisors and all the contact details were provided. With that being said, the researcher took steps to eliminate, isolate, and

minimise any identified potential harms or questions that were going to be harmful to participants.

3.11. SUMMARY OF THE CHAPTER

In this chapter, the research methodology and design were addressed in detail. A qualitative research approach was employed. The research design employed was the exploratory research design. Study population, sampling procedures, and data collection methods have been outlined. A literature review presenting sources consulted for the study has also been outlined. To ensure quality criteria, credibility, transferability, dependability, and confirmability were thoroughly discussed. The ethical considerations that the researcher adhered to were presented. The next chapter (Four) entails data presentation, analysis, and discussions.

CHAPTER FOUR

DATA PRESENTATIONs, ANALYSIS AND DISCUSSIONS

4.1. INTRODUCTION

The previous chapter focused on research design and methodology. This chapter focuses on data presentation, analysis, and discussion of the findings involving lecturers' perceptions of online T & L during COVID-19. The participants who took part in this study were well-informed regarding the subject matter. The researcher used semi-structured, KIIs and Google Forms, where the participants had to fill out a Google form using online devices and submit. The sample of respondents to the Google form was made up of 10 lecturers from the Department of Criminology and Criminal Justice at UL. The study employed inductive TCA to analyse the data that were collected. The permission to carry out this research, which included acquiring data from the participants, was granted by the DREC, SSrec, FHDC, and TREC. In this chapter, the researcher first discussed the demographic information of the participants, followed by findings relating to the study aim, findings based on study objectives, and the summary of the chapter.

4.2. DEMOGRAPHIC INFORMATION

The data collection took place at the UL under the Department of Criminology and Criminal Justice. The Google Form consisting of semi-structured KIIs questions was distributed to the participants using a Gmail account. The sample was formed of 10 participants whereby four (04) were females and six (6) were males. Out of 10 participants, only 9 consented to the study and responded to the semi-structured KIIs.

4.3. FINDINGS RELATING TO THE STUDY AIM

The findings based on the study aim outlined how lecturers perceived online T & L during the COVID-19 pandemic. In addition, the researcher discussed the study themes and sub-themes discovered when analysing the participants' perceptions on the study subject. The study's aim was used as a guideline for this section, with the following discussions transpiring.

4.3.1 The study aim: To analyse the perceptions of lecturers toward online Teaching and Learning during Coronavirus Disease-2019 using the University of Limpopo Department of Criminology and Criminal Justice as a case study

The aim of the study was to analyse the perceptions of lecturers towards online T & L during COVID-19 using UL's Department of Criminology and Criminal Justice as a case study. The participants express both positive and negative perceptions regarding the role of online T & L during the COVID-19 pandemic. In addition, the participants highlight compromises made by the institutions, academics, students, and the DHET to ensure the continuity of education during the challenging times of the pandemic. To achieve the aim of this study, the following question was asked:

For this question: *What are your perceptions on online T & L during COVID-19?''* The researcher asked this question intending to gain insights into participants' perceptions regarding online T & L during COVID-19. Therefore, the participants were expected to reveal their honest opinions on how they perceive online T & L.

To determine the suitable participants who were prone to provide responses that were going to be relevant to the aim of the study, the following elements were considered: the participant was supposed to be a lecturer at the Department of Criminology and Criminal Justice, the participant was supposed to be lecturers who experienced online T & L COVID-19, the participant was supposed to be a lecturer at UL where the research study was based. When participants were asked about their perceptions of online T & L during COVID-19. The following discussions below were recorded.

In Chapter Two, Section 2.7 of this study, Odeku (2021) states that when the stages of the pandemic decreased, UL permitted a small number of people to come back to the campus and this was done to eradicate the spread of COVID-19. Below are the responses that align with the literature:

P3 assert that *"online T & L was imperative for preventing students and staff from encountering the deadly virus called COVID-19.''* This assertion is supported by **P7** who indicates that*,*

> *"It had both negative and positive impacts. It has positively changed the teaching and learning perspective by forcing Traditional universities to have a hybrid teaching system, allowing distance learning since contact classes were not allowed to evade the spreading of the virus.''*

The response relates to Gonzalez *et al.* (2020) in Chapter Two, section 2.5, who assert that online T & L have substantial benefits that are valuable for its success. **P6** also emphasises that online T & L during COVID-19 was a very good alternative. In Section 2.2.1 of Chapter Two, it has been stated that lecturers perceived online T & L as a method that was imperative and inevitable, and the students were satisfied with its progress (Salema, 2023). Overall, almost all the participants agreed with the fact that online T & L played a significant role in ensuring the continuation of the delivery of education during challenging times when things seemed impossible and saved a lot of lives from being exposed to COVID-19.

The following responses present findings based on participants perceptions regarding online T & L being necessary or a mandatory intervention:

> "*Online T & L was a mandatory intervention which was essential and of value for the students and the institution'' (**P1**)*.

> *"During the difficult period when most things were almost unattainable, online T & L made things achievable…however, through the infusion of an online T & L and its adoption, teaching became necessary and much easier*" (**P8**).

In Section 2.2.4 of Chapter Two, Gumede, Ajani and Afolabi (2022) report that students complained about lecturers not using some of the tools of LMS such as portfolios, gradebooks and online meeting tools that would have assisted the smooth transition to online T & L. In addition, Section 2.6 of Chapter Two indicates that the quick shift from contact T & L to online learning posed challenges to the lecturers and students due to the sophisticated nature of online learning (Di Pietro *et al*., 2020). Therefore, participants in this study felt that online T & L during COVID-19 was accompanied by many challenging factors that hampered its productivity. When participants were asked about their perceptions regarding online T & L, they raised concerns about the adaptations of online T & L and online examinations as recorded herein:

> *"Conducting online lessons was not much of a concern, but the main problem was the students writing exams or tests online because it created freedom for students to cheat and the goal of the exam which is to test students' genuine knowledge was unachievable*" (**P2**).

Furthermore, **P5** concurred with **P2** by stating that *"adapting online T & L during COVID-19 was a very unpleasant experience''*. **P5**, in addition, concedes that "*the students and the staff under the Department of Criminology and Criminal Justice faced various challenges during this period, inclusive to technophobia, unstable networks, online examinations, traveling restrictions and to be familiar with COVID-19 regulations, while*

avoiding the traditional methods of Teaching and Learning.'' **P4** also highlights what **P5** spoke about regarding the issue of examinations by asserting that the *"LMS was unable to accommodate all the students at once during examinations which resulted in the system colliding because of the excessive load."* **P4** indicates that *"for the institution to fully switch to online education was very difficult''*.

P7 reveals that online T & L *"had both negative and positive impacts"* and that "*most academic staff members were not well versed in the teaching and learning tools (Blackboard) used. This has impacted teaching and learning since training was needed to facilitate the lessons using Blackboard. This, as a result, compromised the quality of education because the protracting tools were not comprehended by then*." To summarise, the offered discussions captured the challenging experiences based on the perceptions of the selected participants and how that affected the delivery of education amid COVID-19.

The most recurring perception was that online T & L compromised examinations and promoted dishonesty amongst students in the examinations and students suffered because during either examinations or when writing tests, students would get kicked out of the system because it could not accommodate every student at once. In Section 2.5 of Chapter Two, Fask, Englander and Wang (2015) and Rovai (2000) share that during distant unproctored online examinations, dishonesty was easier and more frequent than when examinations were conducted in proctored environments. The participants also reveal that one of the factors that weakened the online T & L was the anxiousness and ignorance concerning the use of advanced technology because some lecturers were stuck in the traditional way of T & L. This view is reinforced by Saadé *et al*. (2023) in Section 2.2.2 of Chapter Two of this study, that a considerable proportion number of lecturers experience high levels of burnout and anxiety as a result of online T & L.

4.3.1.1 The identified study themes and sub-themes relating to the study aim

In this section, the study delved into two key themes and sub-themes related to the perceptions of participants on online T & L during COVID-19. The following themes and sub-themes were presented: Perceptions of online T & L during COVID-19, online T & L as a mandatory intervention; quick transition to online T & L and challenges, the quick transition to online T & L and examinations challenges. The themes and sub-themes

provide a detailed exploration of the participants' perspectives and experiences, referencing relevant literature to support their claims.

4.3.1.1.1 Theme 1: Perceptions of online Teaching and Learning during Coronavirus Disease-2019

Zalat, Hamed and Bolbol (2021) in Section 2.2.1 of Chapter Two note that a significant portion of the participants in their study expressed agreement regarding the perceived effectiveness of online T & L amid COVID-19. Moreover, the medical staff in the study acknowledge the value of online learning for enhancing and advancing the T & L process (Zalat *et al.,* 2021). In accord, the participants acknowledge the importance of online T & L in preventing students and staff members from coming into contact with COVID-19. The online T & L based on the perceptions of the participants did not only save the education but was a preventative measure of COVID-19. **P3** asserts this claim by saying that *''online T & L was imperative in eradicating the spread of COVID-19''*. This aligns with Odeku (2021) in Chapter Two, Section 2.6, who emphasises the importance of online learning in reducing the spread of the virus. Participants identified online T & L as a mandatory intervention and quick transition to online T & L and challenges as reported below:

4.3.1.1.2 Sub-theme 1: Online Teaching and Learning as a Mandatory Intervention

Participants considered online T & L as a mandatory intervention that was essential and valuable for both students and the staff. To support the assertion, **P1** highlights that online T & L was a valuable intervention for the students and also played a big role in the dissemination of education. This is corroborated by the findings of Gonzalez *et al*. (2020) in Chapter Two, Section 2.4.2, who highlight that the adoption of online T & L had substantial benefits to education and its role is unmatched and without the adoption of online T & L, education could have been disrupted. Barret *et al*. (2020), in Chapter Two, Section 2.2.1 also affirm online T & L as mandatory by stating that online T & L was shaped to be more proficient because of the COVID-19 pandemic.

4.3.1.1.3 Theme 2: Quick transition to online Teaching and Learning and Challenges

A study conducted by Zalat *et al.* (2021) (see Section 2.2.2) indicate that many medical lecturers reported experiencing challenges and barriers such as difficulties in monitoring

students and because of the staff's unfamiliarity with the mode of learning, students took advantage of that and committed academic misconducts such as cheating in the examinations. Many challenges that have been recorded in this study regarding online T & L were because of the quick transition with institutions lacking adequate resources to tackle any challenges related to the online learning mode. To give reference , **P2** says that *"classes conducted online are not problematic. The biggest concern I have is with examinations online that promote copying and fail to test students' actual knowledge".* **P7** also state that *"online T & L compromised the quality of education because the protracting tools were not comprehended by then in the beginning",* which therefore made it easier for cheating in the examinations. Below are sub-themes outlining data from the participants.

4.3.1.1.4 Sub-theme 1: The quick transition to online Teaching and Learning

Mabolloane (2021) (see Section 2.2.2) reveals that online T & L was adopted quickly as a new way of T & L to some institutions that were not familiar with it. Sometimes, these institutions did not have enough or available technological resources. This is supported by Rapanta, Botturi, Goodyear, Guàrdia and Koole (2020) (see Section 2.2.2), who highlight that Egypt HEIs encountered challenges because of the quick shift from a contact education system to virtual learning. **P3** acknowledges the "*challenges associated with the quick transitioning from contact learning as primary tool to online learning, particularly due to the sophisticated nature of online learning''*. Di-Pietrro *et al*. (2020) highlight the challenges posed by the quick transition to online T & L, which involved insufficient knowledge and skills. Moreover, Sasere and Makhasane (2020) findings indicate that the COVID-19 pandemic forced the lecturers to shift to online T & L (see Section 2.2.2); therefore, many lecturers struggled to adapt due to having insufficient online T & L skills.

4.3.1.1.5 Sub-theme 2: Examinations challenges

Dempsey and Mestry (2023) note that in cases where institutions could afford to adapt to online learning, numerous educators encountered challenges in conducting tests and examinations using digital platforms. Ramsuraj (2021) concurs that unethical issues that had to do with examinations were prevalent in the adoption of online T & L (see Section 2.2.2). The study reveals instances of copying and students employing specialists to write the tasks offered online, thereby compromising the integrity of modules and degrees.

The participants presented challenges related to examinations, including issues of cheating or dishonesty in the examinations and further outlined that the challenges of examinations led to the unattainability of testing whether the students understood the set of questions in the examinations. For example, **P2** pointed out the difficulty of examinations by saying the lack of monitoring of the examinations led to cheating. Radu *et al*. (2020) (see Section 2.5.2) aver that one of the factors that affected the production of online T & L was ineffective online examinations, which included cheating. Moreover, in Section 2.3.4 of Chapter Two of this study, Lalduhawma, Thangmawia and Hussain (2022) reveal that examinations were perceived to have been unfair because of the rapid and total transition to online T & L within a very limited period.

4.4. FINDINGS BASED ON STUDY OBJECTIVES

In this section, the researcher set out five (05) main objectives: (1) to determine the readiness of lecturers to offer online T & L at UL, (2), to analyse the effects of online T & L on lecturers during COVID-19 at UL, (3) to assess the quality of online T & L methods, as offered by lecturers during COVID-19 at UL, (4) to assess the challenges of online T & L faced by lecturers during COVID-19 at UL, (5) to propose strategies that can be implemented to better online T & L during COVID-19 at UL.

The overall analysis of the objectives of this study shed light on the challenges and the ineffectiveness of online T & L, its quality and the effective strategies used to overcome the obstacles and the proposed strategies that can be implemented to better online T & L. The researcher's findings may contribute to the awareness of the disadvantages faced by lecturers and students and thus encourage the provision of mandatory interventions necessary for the success the online T & L. Therefore, the next section (Objective 01) discusses the readiness of lecturers to offer online T & L at UL.

4.4.1 Objective 01: To determine the readiness of lecturers to offer online Teaching and Learning at the University of Limpopo

To attain this objective, the focus was on the readiness of lecturers to offer online T & L at UL during the COVID-19 pandemic. Therefore, this section sheds light on the experiences and perspectives of lecturers on online T & L and underscores the training that was offered to prepare the staff and students for online learning. To determine the lecturers' readiness to offer online T & L amid COVID-19, two questions were asked:

- *Were you prepared for online T & L during COVID-19?*
- *Did you receive adequate training for online T & L during this period? Elaborate on your answer.*

For the first question, *"were you prepared for online T & L during COVID-19"*, the researcher asked the question with the intention of discovering the level of preparedness that the lecturers had for online T & L. In addition, the participants were expected to expand on how prepared they were or how unprepared they were.

In section 2.3 of this study, Mhlanga and Moloi (2020) submit that, in contrast to universities in Europe, America, and some parts of Asia, many educational institutions in Africa were unprepared for and were thus caught off-guard by online learning because they did not have advanced technological tools. The following answers were noted when participants were questioned about how ready they were for online T & L. **P1** admits that *"We were not fully prepared for online T & L, and we never predicted a situation where we would be forced to transition from traditional T & L to fully online learning"*. Both **P3** and **P5** agree that online T & L came as a surprise by stating that *"No, I was not prepared, the COVID-19 caught almost everyone off-guard. There was not sufficient training"* (**P3**) and *"No, this caught me off-guard without prior planning and the university community was not ready at all. The adjustments were not easy and questionable, as the adoption of multimodal T & L was a nightmare in the initial phases of implementations."* (**P5**).

P4 indicates that *"all the associates in all the faculties were not ready for online T & L which includes lecturers, management, administration, exam staff, and students.''* Mashau and Nyowe (2021), in Section 2.2, state that many staff and students struggled with using the LMS because they lacked the necessary level of preparation and training to navigate the system. **P7** and **P3** claim that *"there was a lack of sufficient training offered for online T & L particularly the use of Blackboard''*. In accord, **P8** partially agree with **P3** and **P7** by stating that *"honestly, at first it was an unprepared circumstance which turned to be a sophisticated exercise with a coupled of trainings''.* On the other hand, the researcher discovered that several participants in this study had a unique perception when compared to other participants. Some participants claimed that they were completely prepared and that they never experienced any problems with online T & L.

For example, **P2** states that the use of *"Blackboard was not that challenging, therefore, I did not have an issue with online T & L in relation to readiness''*. **P6** undoubtedly says *"Yes, at my previous university, e-learning and the use of Moodle and Blackboard was part of the teaching tools we had access too.''* To substantiate these claims, Section 2.3 of

Chapter Two states that UL offered training and skills to empower both students and staff in using online platforms for effective and efficient online education (Chiramba, 2021). Despite this, it is also fair to deduce that a great number of participants complained about being unprepared for online T & L. Therefore, the University should take measures to ensure that the staff and students are well prepared for online T & L in the current time and for the future. As indicated by Toquero (2020) in Section 2.5, the increase in technological advancement and transformation of education may become a post-pandemic norm.

The purpose of the asked question was to determine how prepared the participants were for online T & L during the COVID-19. The recurring response was that online T & L came as an unanticipated surprise for many academic communities due to the pandemic and as a result, many lecturers were not fully prepared. Garg *et al.* (2020) in Section 2.3 of this study indicate that some lecturers and students were not prepared for online education as the sole alternative method of instruction. One of the participants further states that online learning was a shocking experience at the beginning of its deployment. Two participants (**P3 and P5**) complain about the lack of training for the utilisation of learning management system platforms. Some participants indicated that they never had any issue with online T & L because they had a basic skill on how to use online learning through the training that they had received from the institution. **P8** had encountered online T & L before in other institutions as a lecturer, which made it easy for the participant to adapt. However, Mhlanga and Mentz, in Section 2.2.2 of Chapter Two of this study, reveal that lack of support and training was partially evident in online T & L during COVID-19.

On this question: *"Did you receive adequate training for online Teaching and Learning during this period? Elaborate on your answer",* the researcher intended to gain insights into whether there was sufficient training offered to lecturers to adequately prepare them for online T & L. The researcher was attempting to find out whether the University provided enough training to the lecturers to ensure that online T & L become a success during those catastrophic times.

In Chapter Two, Section 2.7, it was mentioned that lecturers at UL were adequately trained to use Blackboard tools to enable them to deliver effective lessons and implement modern competency-based pedagogy for all students (Odeku, 2021). In Section 2.3.3 of Chapter Two, it has been mentioned that ICT played an important role during COVID-19 in supporting lecturers for professional development, curriculum coverage, and the

application of pedagogical practices and assessments (Kozma, 2011; Dayal, 2023). Regarding adequate training, **P1** answered: *"Yes, the ICT department hosted numerous and frequent workshops to train criminology staff members on how to access and use technology-enhanced learning, for example, Blackboard amongst others".* **P8** affirm that *"more trainings were offered by the ICT support team, and it really helped the department".*

P4 acknowledges that *"training was offered as result of the institution facing difficulties in adapting to online T & L*". **P6** also affirmed that *"once lockdowns were announced, the University had an intensive training programme for online teaching".* **P5** adds that there was *"adequate training which were offered using Blackboard and it was very effective''*. The participant further disclosed that *"the training in question showcased that adaptations of unforeseen circumstances should be prioritised by the University and the students and staff of the Department of Criminology and Criminal Justice should normalise refreshing their online T & L practices.''*

Makgahlela *et al*. (2021), in section 2.3, state that the HEIs should have realised that the 4IR was going to change the landscape in terms of the traditional culture of T & L and they should have been pro-active in introducing online teaching technologies and also training staff and students , therefore, they would not have faced the challenges. Moreover, Section 2.3.4 indicates that many teachers were not technologically savvy; therefore, they were forced to adapt to conduct classes online without proper training which, in turn, diminished the quality of teaching (Ya, 2020). However, some of the participants had different perspectives concerning whether there was adequate training for online T & L. **P3** showcases that "*the training workshops that were offered to the department were inadequate with low quality, as a matter of fact, the workshops training did not prepare criminology lecturers to provide good quality of T & L*. In accord, **P4** acknowledges that "*workshops training was offered, however, the University still had difficulty adjusting to entirely online T & L''.*

The purpose of the above question was to check if the lecturers received adequate training to execute online T & L properly. Participants recognised the role played by ICT, which included providing training and workshops to better online T & L. Section 2.3 proposed that UL should provide workshop training to prepare both lecturers and students for online T & L (Chiramba, 2021). The University should prioritise online T & L for future purposes. However, some of the participants mentioned that there was a shortage of available training opportunities, and the quality of the offered training programmes was insufficient, thus negatively 'painting a bad picture' for overall quality of education. Dayal (2023), in

section 2.3.3, asserts that many educators in tertiary education still lack ICT skills and training.

4.4.1.1 The identified study themes and sub-themes in relation to objective 1

In this section, the themes and sub-themes related to the objective 1 were explored. The themes and sub-themes were: Lack of preparedness for online T & L, unpreparedness and surprise, insufficient training programmes, adequacy of training for online T & L, acknowledgement of adequate training and call for ongoing training and proactiveness. These findings shed a light on the preparedness and the training of educators and students for online T & L.

4.4.1.1.1 Theme 3: Lack of preparedness for online Teaching and Learning

Dayal (2023), in section 2.3.1, reported that a majority of lecturers indicated signs of unpreparedness for online T & L. Almahasees *et al.* (2021) pointed out that the unpreparedness of lecturers for online T & L was caused by insufficient training and the lack of previous familiarity with teaching online. Another issue raised by participants was insufficient training for online T & L. Chrysanthos (2020) suggested that the swift shift to digital learning resulted in insufficient training on online platforms, affecting the learning experience and causing decreased motivation for the online T & L mode. The identified sub-themes regarding the preparedness and training programmes are discussed in the following section.

4.4.1.1.2 Sub-theme 1: Unpreparedness and Surprise

Participants **P1**, **P2, P3,** and **P4** reveal that during the shift to online T & L, lecturers showcased a lack of readiness to execute online pedagogy. The participants further indicate that the pandemic and online learning came as a surprise and found lecturers having insufficient training in teaching online. These findings align with Mhlanga and Moloi (2020) in Section 2.3, who claim that many African institutions, including UL, were unprepared for online learning because of the lack of insufficient training to use ICT infrastructure. Kummitha *et al*. (2021) in Section 2.3.4 discover that the training of staff to facilitate online T & L was limited.

4.4.1.1.3 Sub-theme 2: Insufficient training programmes

Participants indicate that the training workshops that they received were not adequate and were of low quality. Therefore, they failed to prepare the lecturers to deliver high-quality of online T & L. This sub-theme resonates with Makgahlela *et al*. (2021) in Section 2.3, who suggest that they should have been more proactive in introducing online teaching technologies and providing effective training programmes. Dayal (2023), in Section 2.3.3, reveals that teachers in the study showcased insufficient training for adapting to the entirely online T & L.

4.4.1.1.4 Theme 4: Adequacy of training for online Teaching and learning

Hodges (2020) proposes that the effectiveness of online learning and its growth relies on having the essential institutional infrastructures, management, and support structure in position, along with the provision of opportunities and sufficient training of staff for online T & L. Some of the participants in this study admitted that the training offered by the institutions in preparation for online T & L was imperative. For instance, **P1** says that *"the ICT department hosted numerous and frequent workshops to train the Department of Criminology and Criminal Justice staff members on how to access and use technology-enhanced learning e.g., Blackboard, etc."* **P8** adds *that "more trainings were offered by the ICT support team, and it really helped the criminology lecturers".* Zalat *et al.* (2021), in Section 2.3.1, note that online learning for their medical staff was perceived to have not been challenging given that they were using blended learning prior to COVID-19.

Zalat *et al.* (2021) indicate that the institution provided intensive training to all staff members before officially implementing online T & L. Due to reported cases of insufficient training, the participants voiced out that continuous training should not stop since online T & L is perceived to be here to stay. Ramsuraj (2021), in Section 2.3 .1 says that there is a need for ongoing training of staff and students to advance the learning mode and avoid ethical challenges. The presented sub-themes regarding the acknowledgement of adequate training and the call for ongoing training and proactiveness highlighted that the University provided online tools for online T & L and suggested the need for ongoing training to ensure that lecturers and students are well equipped.

4.4.1.1.5 Sub-theme 1: Acknowledgement of Adequate Training

Some of the participants acknowledged the adequacy and effectiveness of training programmes provided by the University, particularly online tools such as Blackboard. **P1**, **P8** and **P6** recognise the role of the ICT in UL in providing training and support for staff and students with the aim of preparing them for online T & L. Odeku (2021), in Section 2.4, emphasises the crucial role performed by UL's ICT in supporting staff and students with tools and skills for effective online learning. To support the adequacy of training for online T & L, Dayal (2023) appreciates the role of ICT in the provision of intense training to staff and students in preparation for online T & L (see Section 2.3.3).

4.4.1.1.6 Sub-theme 2: Call for ongoing training and proactiveness

Some participants pointed out that insufficient training was one of the factors that affected the progress of online T & L. Therefore, participants suggest the need for continuous training and proactive measures to ensure the readiness of students and staff for the present and future purposes. This theme aligns with Makgahlela *et al*. (2020) who suggest that institutions should prioritise ongoing training and technology advancements for future preparation and reliance on online education (see Section 2.3). Almahassees *et al*. (2021) in Section 2.3.1, state that continuous training, skills and knowledge are needed for teaching online.

4.4.2 Objective 2: To analyse the effects of online Teaching and Learning on lecturers during Coronavirus Disease 2019 at the University of Limpopo

In this objective, the researcher sought to analyse the lecturers' responses on the effects of online T & L during COVID-19 at UL. The participants' experiences and perspectives on issues such as poor attendance, lack of resources and other challenges were explored. The primary questions that were asked to obtain the findings of objective two (02) were as follows:

- *What effects of online T & L have you experienced?*
- *Were these effects addressed by the University? Elaborate your answer*.

On this question*: "What effects of online T & L have you experienced?"* The researcher attempted to find out the effects that the participants encountered during the transition to full online T & L. Therefore, the participants were expected to outline the positive and the negative effects of online T & L based on their personal experience.

In Chapter Two, Section 2.6, it was disclosed that one of the negative effects that the lecturers encountered was students having no interest in attending online classes, and the literature further claims that the attendance of the online classes was very low, and sessions rarely constituted 50% of the overall students' attendance (Mhlanga & Ramoroka, 2021).

The issue of lack of attendance has been a recurring issue in this study and has been supported by a couple of participants. For instance, **P3** assert that "*the was a number of students who were not attending online classes, and this was mainly due to internet connectivity problems and students who were attending were not fully participating or engaging during the session purely because they some were not inclined with the online T & L platforms"*. This is in line with **P8** who provides the following response *"load-shedding, which was used as a scapegoat by our student, which resulted in less attendance.''* Chapter Two, Section 2.3.1 reveals that one of the major problems faced by both lecturers and students was the lack of necessary resources, which hampered the success of online T & L (Chiramba, 2021). **P1** notes that *"online T & L was mandatory given that we are living in the 4IR however, UL lacked the resources necessary to properly carry out this duty as it is a historically unprivileged institution and many of the students come from rural areas having no experience or tools required for T & L".* **P4** points out a couple of issues that compromised online T & L, which included students *"showing unpreparedness to write test or exams and they also struggle with the learning management system as it could not accommodate everyone because the system could shut down.''*

Moreover, the question was also posed with the intention of finding out the online T & L effects that the participants experienced or succumbed to. One of the recurring effects was poor attendance. Two participants (**P3** and **P5**) indicate that there was a great number of students who were not attending online classes, and this was influenced by Internet connectivity issues. In addition, the participants also mention that students showed unpreparedness to write tests or examinations because they were struggling to navigate the online education system. Mhlanga and Ramoroka (2021), in Section 2.6, indicate that students' poor attendance in distance learning classes was a challenge that was influenced by lack of preparation and internet connectivity.

On this question: *"Were these effects addressed by the University? Elaborate on your answer"*, the researcher's main goal was to find out the participants' experience of the effects of online T & L. Some participants provided diverse responses from

acknowledging the institution's contribution to addressing the effects while others saying that the institution did not address the effects.

In chapter Two, Section 2.7, Odeku (2021) mentions that UL supplied electronic devices, like laptops, along with the data bundles to both staff and students. This was done to enable educational activities to continue in response to the pandemic outbreak. Odeku (2021) further states that when the lockdown was lowered, the University offered solutions to network crises by permitting some students back to campus and that eventually increased the number of attendances in online classes. Regarding the effects of online T & L, **P1** says: *"Yes, the University provided laptops and data bundles to the needy students to enhance online teaching and learning. Secondly, the lessons on Blackboard are recorded and the students can have access to the lessons in their own convenience, even after the class"*. The reason for doing this was because of the assumptions that the UL lacked the resources required for online T & L. Therefore, **P1** agrees with the preceded statement by saying that *"Criminology lecturers were pleased about the rise in the number of attendances because of the university's dedication to providing laptops and data bundles*.''

As opposed to the stated claims, other participants had conflicted views with regard to whether the effects of online T & L were actually addressed by the University. **P3** simply said: *"No, they were not addressed".* This is in accordance with **P4** who said that the *"institution had a difficult time dealing with all the problems or effects, which were affecting both the lecturers and the students and making it impossible for them to manoeuvre around online T & L".* **P7** stated*, "nope, until recently where staff members were recalled back to the campus".* **P7** further indicated that *"the issue of lecturers not having an adequate place to conduct online classes was prevalent until the ease of COVID-19 which gave a chance for the DHET to allow both students and lecturers back to campus."* In section 2.4.3, it was revealed that the lack of adequate training for digital tools, and unstable Internet or Wi-Fi connectivity crises led to numerous difficulties and affected online education. Moreover, Chere-Masopha and Makafane (2021) in Section 2.4 disclosed that educators were concerned about how relaxed the government and the institutions were about the negative effects of COVID-19 on educational sectors. Furthermore, in Section 2.4.2, Schreiber and Jansz (2020) highlighted that the effectiveness of online T & L was affected by the lack of electronic devices such as laptops, unstable network connectivity and power outages.

The question was coined to determine the effects of COVID-19 on the participants. In terms of the positive effects, participants indicate that there was provision of laptops and

data bundles by the University, which enabled the rise of class attendance. Another thing was the online courses that were offered by the ICT to assist lecturers on how to use Blackboard Learn. However, other participants reveal that the University struggled to address the effects of online T & L. In basic terms, some participants were not satisfied with the University's contribution in trying to mitigate the effects of online T & L. In Section 2.7, Dawadi, Giri and Simkhada (2020) claim that the government, universities, and colleges took proper initiatives, such as providing learning electronic devices to make education accessible to all students who did not have the required materials.

4.4.2.1 The identified study themes and sub-themes in relation to objective 2

The researcher considered the following themes and sub-themes: Effects of online T & L, poor attendance and participation, technical issues, the University's response to online T & L, provision of electronic devices and data bundles. The themes and sub-themes revealed the effects of online T & L amid COVID-19 and necessitated crucial measures to address the negative effects and promote effective online T & L.

4.4.2.1.1 Theme 5: Effects of online Teaching and Learning

When participants were asked about the effects online T & L amid COVID-19, they highlighted negative effects such as having no interest in online classes, which led to poor attendance. Ungwuanyi, Okeke and Shawe (2021), in Section 2.4.1, report that participants in their study complained about poor attendance and participation, which had negative effects on the online T & L mode. In section 2.4.1, Baroudi and Shaya (2022) state that lecturers faced technical difficulties in using LMS and that negatively influenced ineffectiveness in implementing online T & L. Zalat *et al*. (2021), in Section 2.4.1, reveal that 32% of lecturers reported to have experienced technical problems in utilising online platforms essential for T & L. The identified sub-themes below discuss the issues related to poor attendance and participation as well as technical issues that were encountered by lecturers.

4.4.2.1.2 Sub-theme 1: Poor attendance and participation

When the participants were asked about the effects of online T & L, they report that there was a significant decrease in attendance during online classes compared to contact classes prior to COVID-19. Mhlanga and Ramoroka (2021), in Section 2.6, raise concerns

about the poor attendance and students' participation rates by saying that online class attendance was a problem because in certain courses, not even half of the students would attend the classes. Poor attendance was attributed to factors such as Internet connectivity issues and students' lack interest in online learning. Moreover, Mhlanga and Ramoroka (2021) highlight that low attendance and challenges in student engagement during online learning were some of the factors that negatively affected the success of online T & L (see Section 2.6). Mhlanga and Ramoroka (2021) further indicate that online classes attendance was very low to the point that the class would have less than 50% of attendants. **P3** agrees that "*majority of students were not attending online classes, and this was mainly due to internet connectivity problems"*.

4.4.2.1.3 Subtheme 2: Technical issues

Mashau and Nyawo (2021), in section 2.4.1, indicate that the use of LMS for online T & L amid COVID-19 was a challenge for students and staff at UKZN and this was due to insufficient ICT skills. Participants in this study highlight how technical issues had an immense effect on the online T & L advancement and this was caused by the system shutting down or crashing as well as staff's and students' struggles with LMS. Similar technical challenges are highlighted by Purwanto (2020), in Section 2.3, the lack of dependable Internet connectivity is cited as a problem in the delivery of online T & L. Mokoena-de Beer and Moloko (2022), in Section 2.6.1, also showcase that lecturers were orientated on the use of LMS within a short period of time and because of that, some lecturers were not familiar with some of the LMS tools.

4.4.2.1.4 Theme 6: University response to online Teaching and Learning

Zhu and Zhang (2022) in Section 2.4.2 propose that institutions should supply students and staff with electronic gadgets to meet the requirements of online T & L to advance the professional development of the instructors. This aligns with Bekker (2021), in Section 2.4.2, who suggests that measures related to the distribution of electronic devices were made available to South African institutions for the continuity of education. In Section 2.4.2, Pillay and Madzimure (2023) assert that not all South African universities managed to effectively distribute electronic devices to lecturers and students but South Africans did the best they could in making sure that essential electronic devices such as laptops were made available to needy students and staff for online T & L to be productive. **P2** also reveals that

"the provision electronic devices for instance, laptops were one of the measures that were implemented by the university". **P8** adds that *"it would have not been possible for the university to address if they did not provide electronic devices*". The acquired findings regarding the University's response based on the provision of electronic devices and data bundles are presented below:

4.4.2.1.4 Sub-theme 1: Provision of electronic devices and data bundles

Some of the participants in this study acknowledge the contribution of the University, the government, and the private sectors in the provision of electronic devices and data bundles to the needy students and staff to ensure the smooth operation of online T & L. This assertion aligns with Odeku (2021) in Section 2.4.2, who admits the University for its role in making sure that every student had electronic devices and data bundles necessary for online T & L . For example, **P1** reports that *the "University provided students with the required tools essential in virtual learning"*. In Section 2.3.2, it was reported that educators in higher education, particularly universities, had better access to smart devices such as laptops and desktop computers compared to their counterparts in elementary and secondary schools, which resulted in a higher standard of online learning in HEIs (Dayal, 2023).

4.4.3 Objective 03: To assess the quality of online Teaching and Learning methods, as offered by lecturers during Coronavirus Disease-2019 at the University of Limpopo

This objective focused on assessing the quality of online T & L during COVID-19 at UL. Therefore, this section reveals the complex subject matter of online T & L quality, highlighting the University's efforts as well as the difficulties encountered during the shift to online learning. The responses from participants showcase a variety of opinions regarding the quality measures adopted for online T & L. To achieve the results of this objective, the participants were asked the following questions:

- *What does the quality of online T & L methods entail?*
- *What measures were taken by the university to ensure the good quality of online T & L?*

On this question: *"What does the quality of online Teaching and Learning methods entail?*" This question was formulated to uncover the methods that were used to ensure quality in

online T & L because for online education to be effective, its quality needed to be of high standard. In Section 2.5.2, Wekullo, Kabindio and Juma (2023) reveal that techniques or methods that were implemented, which include stable electricity, laptops and computers, reliable Internet connectivity, bandwidth, technical orientation among faculty members and students, entailed a good quality of online T & L. **P1** says that the quality of online T & L methods *"entails the acceptable standard of teaching and assessments offered online".* **P6** discloses that *"following the accepted curriculum but using an online platform. Ensuring that your delivery of classes is engaging and creative. Ensuring that your teaching and assessment follows Bloom's taxonomy"*.

P5 claims that the quality of online T & L methods had *"ensured that the Department of Criminology and Criminal Justice and the students had equal access to online learning, multimodal teaching and learning as well as those online T & L methods are well engineered and administered by experts of the offered contents*." Mashilo and Selelo (2021), in Section 2.5, state that the methods of online T & L are widely accepted and entail a high standard of education; however, to a certain extent, the quality of the content and the assessments was perceived to have been compromised due to the recent adaptation of online T & L. Moreover, Malatji, Masuku and Baloyi (2021), in Section 2.5, state that the assessment method employing multiple choice questions during COVID-19 had a detrimental effect on educational standards.

When asked about the quality of online T & L methods and what they entail, **P8** offers the following response *"it ensures consistency, even though students manipulate the system"*. Therefore, other participants raised the issue of students manipulating the system by saying that *"online T & L compromise the quality of education because students easily manipulate the system during tests and exams due to insufficient protracting tools that can completely monitor students when writing summative assessments."*

This question sought to identify the involvement of online T & L methods for good quality education. Many participants agree that the quality of online T & L entailed acceptable good quality of assessments and content, which include, tests and examinations. Participants also state that online T & L entails equality of opportunity for students in accessing T & L content. Moreover, when they were asked about the quality of online T & L methods, the participants highlight that although the methods of online T & L to ensure good quality education remain the issue of students manipulating the system and that eventually compromises its quality. Therefore, these problems regarding the quality of online T & L should be addressed. Digital Promise (2023), in Section 2.5, affirms

that online T & L promotes equity and flexibility for all students by fostering a learning environment that is receptive to cultural differences and considers each student's uniqueness. Digital Promise (2023) further acknowledges that if the methods meant to guarantee the good quality of online T & L are not followed or are applied improperly, online T & L can worsen and prolong inequality for students and educators.

On this question: *"What measures were taken by the University to ensure the good quality of online Teaching and Learning?*" The researcher posed this question with the intention of gaining insights into whether UL provided adequate measures to ensure good quality of online T & L. Section 2.7 indicates that enormous training was provided to staff and students by saying that UL provided workshops to staff on how to use modern technology to meet the students' needs through courses (Odeku, 2021). Furthermore, Makafane and Chere-Masopha (2021) in Section 2.6, a study from the NUL report that a short course was provided to lecturers and students on the basic skills required to use the institutional LMS. In Section 2.5.1, where it was recommended that Institutions must invest in an advanced LMS that meets current needs and provides staff, lecturers, and students with training on how to utilise the learning platforms (Adnan & Anwa, 2020; Basilaia & Kvavadze, 2020). On that account, those we there measures that participants provided on responses regarding strategies that were taken by the University to ensure good quality of online T & L.

Almost all the participants reported that the University offered continuous training for staff with the goal of sustaining the good quality of online T & L. **P2** confirms the statement by saying that the was *"constant training. Fortnightly meetings by the Faculty of Humanities Multimodal teaching, learning and assessment committee to discuss any challenges that was being experienced by academics and students and to offer panacea"*. **P8** also provides a response along the lines of training that was directed to both staff and students by saying that *"yes, the University provided constant training to the university as a whole which incorporate criminology lecturers and students to ensure good quality of online T & L".* **P5** and **P3** embraced the provision of laptops and data bundles by the University to assist in faculties such as students and academics in accessing good quality online content.

Patael *et al*. (2022), in Section 2.5, mentioned that using a remote proctoring tool has been useful, especially for institutions that impart remotely using online learning platforms, to assess students in a controlled physical proctored area. A proctoring tool is an online

platform or gadget that helps to validate students' identification, particularly when they are writing tests or examinations using online devices (Patael *et al*., 2022). When asked about the measures that were taken by the university to ensure good quality of online T & L, **P1** said that *"a proctoring tool was implemented to monitor the student's examinations and some of the assessments were submitted through the Turnitin platform to regulate the plagiarism and similarity index.''*

In Section 2.6, it was revealed that an insufficient training of academics and students had led to a lack of readiness for online T & L, which consequently resulted in a lower quality of online T & L (Mafenya, 2021). Moreover, in section 2.5.1, Radu *et al*. (2020) indicated measures that were not implemented that affected the quality of online T & L, which include: the lack of the infrastructure (digital devices, Internet connection) required to ensure the smooth operation of the T & L process, ineffective communication between students and lecturers, insufficient expertise for performing practical application, a lack of motivation for T & L on both students and lecturers, ineffective online examinations (cheating). Underneath are responses concerning participants advocating that they did not see any measures being implemented to ensure good quality of online T & L.

However, two participants (**P3** and **P7**) dispute that there were no measures that were implemented by the university to maintain a good quality of T & L. **P3** argues that *"no measures were taken",* followed by **P7** who says that *"Nothing was done.''* This question sought to discover whether UL provided measures to ensure good quality in online T & L. The most frequent answer was that enough training was provided by the University through its ICT to teach students and staff how to use online platforms, specifically Blackboard. It was revealed that good quality in online T & L was never going to be achievable without the provision of necessary digital devices such as laptops and the distribution of data bundles. Participants also mentioned that proctoring tools played an important role in making sure that students were monitored to prevent cheating or dishonesty in the test or examination room. On the other hand, two participants (**P3** and **P7**) were very vocal in saying that based on their experience, the University never took any steps to ensure high-quality online T & L. Nakweya (2021), in Section 2.5.3, suggest that the training of educators, provision of electronic devices and applying invigilating tools were among the factors that contributed to a good quality of online education.

4.4.3.1 The identified study themes and sub-themes in relation to objective 3

In this section, the identified themes and sub-themes related to objective 3, focusing on the quality of online T & L was explored. The themes and sub-themes presented the following: Quality of online T & L methods, challenges to quality of online T & L, measure to ensure good quality of online T & L and the use of online tools for good quality of online T & L. The findings based on the identified themes and sub-themes underscored the challenges faced in maintaining high quality of online T & L and proposed measures to address these issues.

4.4.3.1.1 Theme 7: Quality of online Teaching and Learning methods

According to Lufungulo, Mwila, Mudenda, Kampamba, Chulu and Hikaambo (2021), lecturers reveal that poor infrastructure, students' economic status, illiteracy, lack of technological advancement and lack of communication or engagement affected the quality of online T & L negatively. This aligns with **P9,** who indicates that *"teaching and assessments were done in an online platform, limiting consultation and engagement"*. The challenges associated with the quality of online education are discussed below:

4.4.3.1.2 Sub-theme 1: Challenges to quality of online Teaching and Learning

Participants in this study raise concerns regarding the quality of online learning in comparison with contact learning by stating that, in online learning, students can manipulate the system during tests and examinations because they are hardly monitored. Hence, online education is deemed to have low quality when compared to face-to-face traditional learning. In support, Section 2.5.2 reports that almost 60 faculty members stated that the quality of learning in online education during the COVID-19 pandemic was lower when compared to traditional face-to-face learning (Wekullo, Kabindio & Juma, 2023). With that being said, Toquero (2020), in Section 2.5 discovers that the quality of content and the academic assessments offered in online education was poor due to the implications surrounding online learning such as the recent setting of examinations consisting of multiple-choice questions that than short and long questions that test students ability to think and be innovative. Moreover, Toquero (2020), in Section 2.5, highlights that the manipulation of the system and technical issues such as poor connectivity, power outages and broadband affected the quality of online T & L. In accord, **P3** reveals that *"the online T & L system was manipulated by students during examinations and that affected the quality of online learning in the Department of Criminology and Criminal Justice''*.

4.4.3.1.3 Theme 8: Measure to ensure good quality of online Teaching and Learning

Motseki, Maluleke and Barkhuizen (2021), in Section 2.5.1, indicate that one of the challenges that hampered the quality of online T & L was plagiarism, which became an unethical issue. In Section 2.5, Mashilo and Selelo (2021) describe Turnitin as a tool that assisted lecturers in detecting similarities index (Plagiarism). Motseki *et al.* (2021), in Section 2.5.1, indicate solutions to preserve academic integrity issues such as plagiarism is through employing Turnitin to capture similarities indexes. Kaup, Jain, Shivalli and Pandey (2020) highlight challenges regarding online assessment and copying of students. Kaup *et al*. (2020) provide a panacea to the challenges by proposing that universities should adopt proctoring tools and Google Chrome extensions to observe students when they write examinations. **P1** emphasises this by providing the following *"a proctoring tool was implemented to monitor the student's examinations and some of the assessments were submitted through the Turnitin platform to regulate the plagiarism and similarity index"*. Participants propose measures such as deploying Turnitin and proctoring tools to ensure good quality for online learning academic assessments.

4.4.1.1.1 Theme 9: Online Teaching and Learning challenges faced by lecturers

Zalat (2021), in section 2.6.3, reports that the most prevalent challenges faced by students and lecturers were unstable Internet connectivity and 40% of the participants indicated that lack of adequate connectivity during online T & L. In Section 2.6.3, Watermeyer *et al*. (2020) indicate that lecturers reported poor attendance and lack of engagement because some students were not attending online classes due to poor Internet access. Badaru, Edu, Edu and Duku (2020), in section 2.6.3, acknowledge that poor Internet connection and electricity cuts (Power cuts) affected online T & L. To add on Badaru *et al*. (2020) assertion, most participants in this study indicated the challenges related to Internet connectivity problems and power outage (Load-shedding).

4.4.3.1.4 Sub-theme 1: The use of online tools for good quality of online Teaching and Learning

Majority of the participants recommended the use of online tools for sustaining the good quality of online learning such as Turnitin and proctoring tools to monitor examinations and regulate plagiarism and other fraudulent behaviours done by students. Patael *et al*. (2022), in Section 2.5, affirm this by stating that remote proctoring tools have been useful in

maintaining assessment integrity. A literature that supports the assertion was made by Mitra and Gofman (2016) and Tuah and Naing (2021), who present three proctoring tools that are used in tertiary institutions, namely: (1) live proctoring tool, (2) video recording proctoring tool and; (3) automation proctoring tool. **P1** states that "*proctoring tools were useful and effective in spotting students who attempted to commit academic misconducts"*.

4.4.4 Objective 4: To assess the challenges of online Teaching and Learning faced by lecturers during Coronavirus Disease 2019 at the University of Limpopo

This objective was formulated to assess the challenges faced by lecturers during COVID-19 at UL. The researcher explored the challenges of online T & L by analysing the perceptions of participants and literature review relevant to the challenges outlined. The recurring challenges that were assessed are as follows: Inadequate Internet connectivity, low attendance and participation, difficulties in using Blackboard (LMS used at UL), lack of preparation and experience of online learning. The institution's contribution in addressing challenges encountered by staff and students were investigated. Overall, this section provided a comprehensive overview of the challenges faced during COVID-19 and the role of the institution at which the study was conducted. The following questions were posed:

- *What are the online T & L challenges you experienced during COVID-19?*
- *Were the challenges experienced addressed by the institution? Elaborate on your answer.*

For this question: *"What are the online Teaching and Learning challenges you experienced during COVID-19?"* the researcher sought to determine the challenges experienced by lecturers (Staff) amid COVID-19. As discussed in Section 2.6, inadequate Internet connectivity posed significant obstacles by negatively influencing low participation and attendance in online classes (Malatji *et al.,* 2021). It was also discussed in the same section that during the COVID-19 pandemic, one of the major issues was students' attendance and engagement in online classes, and these difficulties were primarily caused by a lack of network connectivity (Malatji *et al.,* 2021). Section 2.6.6 highlights that challenges with Internet connectivity and the bandwidth of the Internet supply affected online T & L, as some lecturers struggled to upload teaching material (Mokoena-de Beer & Moloko, 2022).

Almost all the participants were in line with the mention literature because when they were asked about the challenges, they consistently highlight that the issue of low attendance and engagement in classes and linked their responses to Internet connectivity issues. **P1** for instance, indicates that the challenges of online T & L were *"poor student attendance and participation in class, Internet, and connectivity issues"*. **P3** provides a similar response by saying that there was a *"lack of student participation in the class activities, lack of class attendance by students, and poor connectivity"*. **P5** and **P8** support **P1** and **P3** by saying that "*the lack of poor network coverage was a serious issue for both students and staff".*

Baroudi and Shaya (2022), in section 2.6.6, acknowledge that the Internet connection challenges were worsened by electric power outages, which affected network signals. Consequently, classes had to be postponed to other days, resulting in increased workloads for the lecturers. Moreover, **P1** indicates that there was *"poor academic performance and this was initially caused by lack of student attendance and participation in the class which was a result of internet connectivity issues''*. In addition, **P6** complains that *''the issue of reducing the need for electricity by cutting other areas off from electricity for a period was a problem, because of rolling power outages many things, including internet connections, would cease to operate in the absence of electricity''*.

Most participants spoke about staff and students not being well equipped to use Blackboard, which was corroborated by Mahyoob (2020) in Section 2.6. Chirimba (2021) concurs that some students come from rural areas with no or little experience of using online devices such as smartphones and laptops therefore, Blackboard was a very complex system for them**. P1** agrees that *"the students were not familiar with Blackboard Ultra for class attendance".* Furthermore*,* **P7** also says that one of the challenges was the *"Insufficient knowledge to use Blackboard."* Mafenya (2021), in Section 2.6, mentions the issue of the pricing and insufficient of data bundles being one of the challenges experienced by students and staff. In addition, Mafenya (2021) expresses discontent with the way data bundles were distributed, asserting that students were not provided enough data bundles and that the data bundles were expensive. In Section 2.6, Malatji *et al.* (2021) indicate that the data bundles that were provided by the institution did not typically extend to or last for a month.

P5 states that *''data was expensive, and the provided data was less insufficient.''* Moreover*,* **P6** states that *''lack of a proper place to facilitate classes and insufficient data*

provided by the university was some of the challenges'' and **P7** also asserts that *''lack of data for students was challenge that hampered the productivity of online T & L.''* It has been discussed in Section 2.3 that staff and students were unfamiliar with the idea of learning online because it was a concept that was outside of their knowledge and experience (Mbombi, Muthelo, & Phukubye, 2021). In support, **P5** raised a pivotal point by saying that staff did not have *"knowledge and skills of using online tools for T & L methods".* **P8** claims that there was *"less attention given to staff in relation to equipment's used during the exercise."* Shahzad *et al*. (2021), in Section 2.6, disclosed that students were dissatisfied with the staff's skills and capabilities to execute online T & L. Participants further report that some of the challenges were caused by a lack of preparation of staff and students because they did not know what to expect. Moorhouse (2020) made a similar claim in Section 2.3, stating that many students were concerned about their academic future since they were unsure of what to anticipate from the online T & L approach and that numerous students had shown indications of being unprepared for online learning.

The question was posed to understand the challenges encountered by the staff in relation to online T & L during COVID-19. Many participants showcased that the challenges were mostly caused by low levels of participation and attendance in the online classes. The other challenge entailed Internet connectivity crises, which lined up with poor attendance and the implications of the load shedding. The participants admitted that they lacked sufficient expertise in using Blackboard. In addition, the lack of data bundles or insufficient bundles to sustain online T & L was thoroughly highlighted. Lastly, there was a lack of training and inexperience for both students and staff as indicated by participants.

Based on the challenges encountered in relation to online T & L amid COVID-19, Hollister, Nair, Hill-Lindsay and Chukoskie (2022), in section 2.6.3, stated that students found it more difficult to participate in online courses than they did in traditional classroom settings. This was influenced by a lack of peer interaction, inadequate training, and technical difficulties appeared to be major concerns for students during online T & L and contributed to their engagement problems. Mokoena-de Beer and Moloko (2022), in section 2.6.3, drew attention to certain issues with internet connectivity that were beyond institutions' control, which consequently influenced attendance.

On the question: *"Were the challenges experienced addressed by the institution? Elaborate on your answer''*, the main objective was to gain full insight into whether the challenges were addressed by the University or not. Therefore, Mokoena-de Beer and

Moloko (2022), in Section 2.6.6, state that lecturers experienced some of the challenges that were out of institutions' control included poor Internet connectivity. In relation to addressing challenges, Mhlanga and Ramoroka (2021), in section 2.7, indicate that the institution addressed some of the challenges of online class attendance by allowing students back to campus to have access to WI-FI. With that being said, numerous participants in this study maintain that the University made extensive efforts to ensure that both students and staff had access to either data bundles or Wi-Fi to tackle some of the Internet challenges and difficulties faced in accessing online T & L materials or content. For instance**, P1** reveals that: *"Yes, some of the challenges, except internet connectivity issues which are geographical rather than institutional were addressed".* **P6** adds that: "*The University did furnish students with data and zero data rated certain websites. Unfortunately, the University has no control over connectivity and Eskom's inability to address the electricity issue in the country".* **P8** mentions that the challenges were addressed *"minimally so".* **P1** note that *"the university attempted to solve some of the challenges of online T & L, however, some were out of their control.''*

On the other hand, some participants voiced concerns that the University did not take any measures to tackle challenges related to online T & L. On that account, Ramoroka (2021) states in Section 2.6 that one of the issues was the lack of institutional support for staff and students to prevent these challenges. **P3** states that "*no, they were not addressed*" concerning the challenges of online T & L. **P4** concurs that "...*there was no support for the lecturers in our department".* **P7** mentions that *"the attempt of the University's efforts to address the difficulties of online T & L were insufficient.''*

The question managed to get the participants' perspectives on the role of the University in addressing challenges that were associated with online T & L. Most participants claim that the University strove to address some of the challenges of online T & L to ensure that education was not compromised. However, some were unhappy with the involvement of the University, which led to an assumption that the University might have tried to solve some issues linked to online T & L, however, the interventions were not effective. Zhu and Zhang (2022), in section 2.6.2, share that although the institution tried to address some challenges, however, certain challenges that impeded online T & L were out of the institution's control like an unstable Internet connectivity.

4.4.1.1 The identified study themes and sub-themes in relation to objective 4

In this section, the researcher assesses the challenges of online T & L faced by lecturers during COVID-19. The following themes and sub-themes emerged from the data: Internet connectivity issues, institutional contribution to address challenges, effort to address and Internet connectivity issues. Overall, the objective underscores the critical role of the institution in addressing online T & L challenges, acknowledging both success and limitations.

4.4.1.1.2 Theme 10: Internet connectivity issues

Participants consistently highlight challenges of low attendance and participation, and according to them, this was mainly caused by Internet connectivity issues. The literature in Section 2.6 supports this by reporting inadequate Internet connectivity as a negative factor that influenced poor participation and attendance (Malatji *et al.*, 2021). Moreover, **P3** mentions the issue of low participation and attendance in class as a result of students *"taking online classes in unfavourable environment with unstable internet connectivity."* Pillay and Madzimure (2023), in section 2.6.3, highlight the issue of load shedding affecting the internet towers, which resulted in many students struggling to log in because of Internet difficulties. Lufungulo *et al*. (2021), in section 2.6.3, indicate that Zambian staff present critical challenges of poor connectivity issues that interrupted the quality of online education.

4.4.1.1.3 Theme 11: Institutional contribution to address challenges

Salema (2023) urged that institutions should deploy Internet facilities that will improve communication amongst staff and students. Salema (2023) further said that lecturers should not struggle to conduct online classes, and they should be able to access content and use online platforms effectively. **P5** said: *"I faced various challenges during this period, inclusive to unstable internet connectivity."* In Section 2.6.3, Ramsuraj (2021) highlighted that the HEIs and the DHET have been recognised for their outstanding dedication in the provision of support to staff and students to ensure efficient online T & L. Ramsuraj (2021) added that it was achieved through addressing challenges such as the lack of Internet connection by providing data and the zero-rated website. Furthermore, **P8** said: *"our students in the Department of Criminology and Criminal Justice faced challenges related to poor connectivity."* Therefore, it is indicated that the institution played a significant role in addressing challenges of delivering the online T & L mode, such as internet connectivity

problems. Despite the University's efforts to address the challenges of online T & L, some participants expressed dissatisfaction, claiming that certain challenges were not adequately addressed.

4.4.1.1.4 Sub-theme 1: Effort to address internet connectivity issues

The participants acknowledge the efforts of the University to address Internet challenges by returning students from disadvantaged backgrounds with Internet connectivity problems to access Wi-Fi on campus and university computers and further negotiating with telecommunications to provide zero-rated websites. In support, **P3** appreciates the zero-rated websites solutions made by the University. However, some of the challenges related to the Internet were noted as geographical or beyond institutional control. For example, **P3** states that "*the University had no control over the load shedding and the government incapability to address the electricity issue by had backup generators to maintain such situation*.'' Batnaru, Nita, Anichiti and Brimza (2021) share that universities attempted to ensure that every student had stable Internet connectivity when they were allowed to come back to the campus. Jarbandhan's (2021) findings embrace the role of the technology, and institutions' attempt to address challenges related to the Internet, for staff and students to connect without problem during the difficult times of COVID-19.

4.4.5 Objective 05: To propose strategies that can be implemented to better online Teaching and Learning during Coronavirus Disease 2019 at the University of Limpopo

This section discusses the strategies implemented to better online T & L during COVID-19 at UL. Participants highlight that the University prepared online T & L through employing refresher courses and training programmes, blended learning programmes and continuous training as well as staff's and students' willingness. The participants were asked the following questions:

- *What are the strategies used by institutions to better online T & L?*
- *What do you think can be done to improve online T & L?*

Concerning the question: *What are the strategies used by institutions to better online Teaching and Learning?* the researcher sought to determine the strategies that were used by the institution for online T & L. On that account, the participants were expected to

provide strategies that were implemented by the institution to better online T & L during COVID-19.

Odeku (2021), in Section 2.7, indicates that 'Blackboard' was one of the alternatives used for online T & L at UL. Moreover, Odeku says that Blackboard has been widely used because of its adaptability for T & L anywhere granted that one has digital devices and Internet connectivity. In line with the above literature, many participants in this study showcase that one of the most effective tools that was used to better online T & L was the Blackboard platform**. P3** reveals that "*we only dependent on the blackboard platform"*. Even **P8** acknowledges that the strategy used "*mostly, it is Blackboard. However, there are quite number of platforms where staff and students engage each other*.'' The assertion was followed by **P7** who says that *"Blackboard was the centre of online T & L and provision of data bundles by the university using the ICT department to ensure that every student received equal data for online T & L was imperative.''*

Odeku (2021), in Section 2.7, contends that staff received proper training through online courses implemented by ICT using Blackboard to teach staff so that they can provide effective lessons and deliver quality pedagogy to all students. Moreover, Sasere and Makhasane (2020), in section 2.7.1.1, report that intensive training for lecturers and students on the use of online platforms played a significant role in bettering online T & L. Esa *et al*. (2017) note that training and re-training of staff and lecturers were established as a key strategies for effective online learning. Furthermore, **P5** says that the University was *"offering refresher courses for the T & L methods and ensuring proper implementations from the Departmental, School and Faculty level.''* In Section 2.7, it was stated that bringing students back to campus was a fundamental strategy, given that some of the software were only found on University computers and Internet connectivity was a crisis (Ramoroka, 2021). Likewise, **P1** asserts that one of the strategies was *"recalling the students to campus to address some of the major internet connectivity issues.''* Makgahlela *et al*. (2021) in Section 2.7, suggest that, the transition from contact to online T & L negatively affected some students' learning and lecturers' teaching. However, some students and staff perceived online T & L as a potential opportunity for the University to formally incorporate contact T & L (Blended learning) going into the future.

P6 indicates that *"the University used a Multimodal approach (Blended learning) to cover both courses that could not be taught online and those that could be taught online and that played a significant role".* Moreover, **P5** states that *"the University used hybrid teaching*

and learning which incorporates traditional and online T & L which means that some teachings were conducted using online platforms while others were done physically, or contact based.'' This question was of vital importance in uncovering the institution's strategies aimed at enhancing the effectiveness of online T & L, while also fostering an environment conducive to successful online education. The participants acknowledge that Blackboard played a vital role in the success of online education during COVID-19. The provision of data was one of the strategies employed by the University to eradicate the low attendance rate in online classes. Another strategy that was disclosed was the implementation of the courses to assist both staff and students on how to use online platforms such as 'Blackboard'. Finally, the implementation of blended T & L programmes made a significant impact on both modules that could not be practised online and those that the lecturers could conduct online.

Caga (2020), in section 2.7.1, supports the assertion made regarding 'Blackboard'' that it was a tool that improved online T & L during the period of lockdown. University of Pretoria [UP] (2021), in Section 2.7.1.4, reveals that during COVID-19, universities decided to support students who needed data. The UP (2021) adds that students who were unable to return to campus because they did not have sufficient connectivity at home were given the opportunity to fill the survey for data bundle. On another perspective, Aji, Ardin and Arifin (2020), in Section 2.7, concede that the blended learning flexibility assisted educators in providing students with educational materials. In other words, educators could conduct lessons online at any time or place. Aldosemani, Shepherd and Bolliger (2019), in Section 2.7, affirm that blended learning offers simple, instantaneous, and adaptable access to the content.

On the question, "*What do you think can be done to improve online Teaching and Learning?"* the researcher aims to uncover measures that can be put in place to improve online T & L. Malatji *et al.* (2021) in Section 2.7, recommend that staff members should receive in-depth training to make sure they possess the skills required to teach online courses. Moreover, Section 2.7 discusses how important it is for lecturers and students to attend workshops and take courses related to online T & L (Ramoroka, 2021). In support, Sasere and Makhasane (2020), in Section 2.7.1.1, find that the training and the retaining of the staff and the students may equip HEIs to face any emergences that may emerge in the future. Therefore, most participants emphasise the significance of offering staff and student training to ensure the competent use of online platforms. **P3** says that to improve online T & L *"advanced training on how to use the platform meant for the online training*"

should be put into effect. Furthermore, **P8** states that there should be *"continuous trainings and staff willingness to attend to such".* One of the crucial points made by **P3** was that *"the desire of the lecturers and the students to learn about online T & L because without their interest, online learning will not be effective. Moreover, the more training the more competent the staff and students will be for online T & L.''*

Mhlanga and Ramoroka (2021) in Section 2.6 state that poor attendance is a problem that the institution has encountered. Moreover, Selelo and Manamela (2022), in Section 2.7, indicate that considering the uncertain future, it is important for HEIs in collaboration with the government and private to implement a high-standard blended learning system both during and after the COVID-19 pandemic. Therefore, in response, **P4** advises the University *"to create an online system that has no limitations on attendance and also emphasises the training of the management for online T & L''*. **P6** spoke about the integration of T & L methods and championed the use of blended learning approach by saying that *"more integration and a more engaged interactive blended learning approach.''*

Patael *et al*. (2022) in Section 2.7, report using remote proctoring tools having been useful, especially for institutions that impart remotely using online learning platforms to assess students in a controlled physical area. **P7** suggests that online T & L can be improved *"by providing an advanced teaching and learning tool such as a model, which is used by UNISA. This tool comprises making tools, protracting tools and automatically calculates the semester marks.''* This can eventually reduce the level of dishonesty or cheating in the examinations room.

There have been several suggestions that have been proposed by participants that could enhance the online T & L experience significantly. First, the training of the university management, which includes the staff and students on how to utilise online T & L platforms, was recommended by most of the participants. The participants advised the University to find alternatives that might allow students to attend classes in numbers without limitations or the system crashing. It has been put forward that the University should continue with the blended learning approach because of its flexibility and to prevent future crises such as COVID-19. To ensure quality education with standard assessment, invigilating tools known as proctoring tools were suggested to avoid dishonesty or cheating and the use of an advanced LMS, therefore making the job easier for lecturers. In addition, Sasere and Makhasane (2020), in Section 2.7.1.2, suggest that the management teams at the institutional level should be prepared to devote a significant amount of time and

resources to training and retraining all lecturers and students. Kharbat and Daabes (2021), in Section 2.7, indicate that students were well prepared technologically for online learning experience, including the e-proctored examinations.

4.4.5.1 The identified study themes and sub-themes in relation to objective 5

In this section, the researcher provides strategies that can be implemented to better online T & L. The themes and sub-themes of this objective highlight the following: Strategies to better online T & L, implementation of refresher courses and training programmes, emphasis on blended learning approach and continuous training and staff and students willingness. Overall, the objective explored and recommended strategies and initiatives to enhance online T & L.

4.4.5.1.1 Theme 12: Strategies to better online Teaching and Learning

Ngwacho (2020), in Section 2.7, proposes that it is essential to formulate approaches aimed at guaranteeing the quality of online T & L to uphold the educational studies. In Section 2.7, Odeku (2021) provides that the significance of flexible online learning plans lies in incorporating a variety of strategies to devise pedagogical activities. These plans should implement diverse technologies to enhance both online and blended learning experiences. Participants highlight strategies to better online T & L starting from the deployment of refresher courses and training programmes, with emphasis on blended learning or a hybrid approach. **P5** agrees that: *"offering of refresher courses for the T & L methods and ensuring proper implementations from the Departmental, School and Faculty level is essential."* **P8** emphasises on the implementation of blended learning by saying that *"hybrid teaching and learning should be used and implemented and with caution to produce quality education."*

4.4.5.1.2 Sub-theme1: Implementation of refresher courses and training programmes

Participants admit that the institution implemented refresher courses and training programmes meant to enhance the skills of both lecturers and students in using online platforms effectively, with an emphasises on Blackboard. Odeku (2021) supports this claim in Section 2.7 by indicating that staff and students received adequate training programmes meant to ensure smooth quality delivery of online T & L. Mahlaba and Mentz (2023), in Section 2.7 opine that lecturers who showed insufficient skills and knowledge to use online platforms were provided with online courses for training to learn creative ways to use online

technologies for T & L. Ngware, Ochieng, Nsengiyumva, Bodo and Razafimahatratra (2022), in Section 2.7.1.4, report that the government and HEIs provided educators with training in a variety of technology areas for use on online learning platforms, including Google Classroom to give them the necessary teaching skills.

4.4.5.1.3 Sub-theme 2: Emphasis on blended learning approach

Participants acknowledge the ongoing use of the blended learning approach, appreciating its flexibility and its capacity to shine during crises such as COVID-19, providing an alternative for the delivery of online education. Moreover, the integration of online T & L methods was recommended as a strategy that is more engaging and interactive for T & L experiences. A study by Makgahlela *et al*. (2021), in Section 2.7, suggest that a multimodal teaching approach that combines contact and online learning styles can be essential for the future of education. **P6** indicates that the *"University used hybrid teaching approach to accommodate courses that could be taught online which is an effective approach."*

Glietenberg, Petersen and Carolin (2022), in Section 2.7.1.5, maintain that COVID-19 enlightened universities to move towards a more blended T & L approach. The aim of adopting blended T & L is to prevent any disadvantages or hindrance of online T & L (Glietenberg *et al.,* 2022). Moreover, Glietenberg *et al*. (2022) advocate that the institution must promote blended T & L because they believe it is essential for the future continuity of education. Modise and Molotsi (2022) highlight that many HEIs in Africa are embracing blended and online learning supported the need for continuous training of lecturers and students.

4.4.5.1.4 Sub-theme 3: Continuous training and staff and students' willingness

Participants indicate that continuous training and the willingness (Self-directedness) of both lecturers and students to engage in online learning were crucial factors for effective online education. **P8** also emphasises on the *"… ongoing training programmes and the willingness of lecturers and students to learn and adopt to the shift to online T & L."* Mahlaba and Mentz (2023), in Section 2.7, accentuate that most lecturers were not familiar with online T & L because they were used to conducting their classes face-to-face, but their willingness, self-directedness and motivation are significant factors that could positively affect the transition to online learning. The findings in Section 2.7 provide that participants showcased willingness to communicate electronically and acknowledged the significance of training programmes (Butnaru *et al*, 2021). **P7** proposes that *"the University*

should embrace online teaching and learning, or it will be left wanting and staff members should be willing to embark into online T & L.''

4.4.6 Study themes, sub-themes and brief descriptions

Table 1: Identified study themes, sub-themes and brief descriptions

Themes	Sub-themes	Brief descriptions
1. Perceptions of online T & L during COVID-19	1.1 Online T & L as a Mandatory Intervention	Participants admitted that online T & L was a mandatory and valuable intervention during COVID-19 and ensured the continuity of education
2. Quick transition to online T & L and challenges	2.1 Quick transition to online T & L	The findings highlighted the challenges associated with the quick transitioning to online T & L such as insufficient resources technological challenges
	2.2.Examinations challenges	The participants reported challenges related to examinations, including, cheating, unethical issues, and difficulties monitoring students. The findings further highlighted the repercussions on the effectiveness of online exams and the compromise of examination integrity
3. Lack of preparedness for online T & L	3.1 Unpreparedness and Surprise	Participants demonstrated a lack of readiness for online T & L and were caught off guard by the sudden shift
	3.2 Insufficient training programmes	Some participants reported that the training workshops they received were inadequate and of low quality
4. Adequacy of training for online T & L.	4.1 Acknowledgement of adequate training	Some participants recognised the role of the ICT in supporting staff and students with tools (Blackboard) and skills for effective online T & L
	4.2 Call for ongoing training and proactiveness	Participants suggested the need for continuous training and proactive measures to ensure the readiness of both students and staff in online T & L
5. Effects of online T & L	5.1 Poor attendance and participation	Participants reported a significant decrease in attendance during online classes, attributed by connectivity issues and a lack of interest
	5.2 Technical issues	Technical issues were highlighted including struggles with LMS and insufficient ICT skills

6. University response to online T & L	6.1 Provision of electronic devices and data bundles	The participants admitted that the university provided electronic devices and data bundles to students as a response to online T & L challenges
7. Quality of online T & L methods	7.1 Challenges to quality of online T & L.	The participants highlighted concerns about the low quality of online T & L due to the manipulation of the system in the form of cheating or copying (Plagiarism)
8. Measure to ensure good quality of online T & L	8.1 Use of online tools for good quality	Participants highlighted workshop training programmes for staff, provision of electronic devices and the use of invigilating tools (Proctoring tools)
9.1 Internet connectivity issues		Participants consistently highlighted challenges of low attendance and participation, mainly caused by internet connectivity issues
10. Institutional contribution to address challenges	10.1 Efforts to address internet connectivity issues	The effort to address internet connectivity included returning students back to campus and negotiating with telecoms for zero-rated websites
11. Strategies to better online T & L	11.1 Implementation of refresher courses and training programmes	The refresher courses and training programmes were reported to enhance the skills of lecturers and students
	11.2 Emphasis on blended learning approach	The participants advocated for the continuation of the blended learning approach. The integration of online T & L methods was recommended for more interactive learning experience
	11.3 Continuous training and staff and students' willingness	Continuous training programmes and the willingness of both lecturers and students to engage in online learning were highlighted as crucial factors for effective online education

Source: Researcher's illustration (2023/2024)

From Table 1, the identified themes, sub-themes and descriptions of the study are provided. The table encapsulates aspects of online T & L during the COVID-19 pandemic focusing on the participants' perceptions and experiences. The participants acknowledge online T & L as a mandatory and valuable intervention that ensured the continuity of education. However, the quick transition to online T & L without proper planning brought challenges caused by insufficient resources and technological barriers. Examinations

challenges, including cheating and lack of invigilating tools, were said to have compromised the integrity of online examinations.

Lack of preparedness is evident in the table, with participants indicating that they were caught off-guard by the sudden shift, and this was exacerbated by inadequate training workshops. While some participants recognised the role of the UL ICT support amid COVID-19, other participants called for ongoing training and proactive measures to enhance the readiness among students and lecturers. The effects of online T & L emphasise poor attendance due to connectivity issues, lack of interest, along with technical challenges in utilising the LMS. However, other participants highlight that the University responded to some of the challenges and provided solutions by handing out electronic devices and data bundles. In contrast, concerns were raised about the low quality of online T & L, particularly related to cheating, plagiarism, lack of training, insufficient devices and the absent use of invigilating tools. Some participants underscore that the quality of online T & L was maintained. Participants further report challenges that they faced in online T & L, including Internet connectivity issues which affected the attendance and the participation of students. The institutional effort to address these issues, such as bringing students back to campus while following the COVID-19 protocols were stated. Moreover, the University negotiated with telecoms for zero-rated websites to reduce the data bundles crisis.

The table concludes by highlighting strategies to enhance online T & L, including the implementation of refresher courses and training programmes and emphasis on blended learning approach for interactive experiences. The importance of continuous training programmes coupled with the willingness of both lecturers and students to engage effectively in online education.

4.7. SUMMARY OF THE CHAPTER

The presentation, analysis, and discussion of the data in this chapter relied on the interview questions administered through Google Forms to the participants who were selected for the study. The researcher conducted semi-structured interviews and analysed the data, focusing on lecturers' perceptions regarding online T & L. To strengthen the findings, the participants' responses were quoted verbatim and supported by literature. The data gathered were structured into themes and sub-themes. In the next chapter, namely,

Chapter Six (06), the following aspects are provided: summary, conclusion, limitations, and recommendations of the study.

CHAPTER FIVE

SUMMARY, CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

5.1. INTRODUCTION

This chapter presents the summary of the study and the conclusions regarding lecturers' perceptions of online T & L during the COVID-19 pandemic. Based on the findings of this study, recommendations are made in relation to how UL can better online T & L going to the future since South African institutions have been instructed by the DHET to consider shifting fully to online learning, given the effects that the COVID-19 had on education. In the overview, the study's overall summary, conclusions, limitations, recommendations, and future research studies are provided in this chapter.

5.2. STUDY'S OVERALL SUMMARY

- **Chapter One** encompasses the general orientation, which presents and provides an overall research process. The chapter begins with the background and motivation and further outlines the research problem, the study aim and the objectives. The definitions of key concepts, study significance and the chapters' progression are addressed.
- **Chapter Two** discussed the literature review that was based on the perceptions of lecturers on online T & L during COVID-19 and the theoretical framework. The literature review consisted of the readiness for online T & L, the effects of online T & L, the quality of online T & L, the challenges of online T & L, and the proposed strategies implemented to better online T & L.
- **Chapter Three** dealt with the research design and methodology. This chapter consisted of the research approach (qualitative), study location, study population, sampling procedure, data collection methods and literature review. Data analysis methods, methods to ensure trustworthiness and ethical considerations were outlined.
- **Chapter Four** discussed the presentation, analysis, and discussion of the data. The findings of the data were evaluated in line with the participants' responses acquired through employing the semi-structured KIIs and literature reviews. Moreover, the interpretation of the findings was supported by the body of literature in chapter two. The discussions of themes were corroborated by the aim and the objectives of the study.

- **Chapter Five** presents the summary, conclusion, limitations, and the study recommendations based on the analysis of the data provided in Chapter Four.

5.3. STUDY'S CONCLUSION

This study analysed the perceptions of lecturers towards online T & L during COVID-19 at UL using the Department of Criminology and Criminal Justice as a case study. This study adopted a qualitative research approach guided by exploratory research design. The selection of participants was carried out through non-probability method: Purposive sampling. For data collection, the semi-structured KIIs and literature reviews were adopted, while the collected data was analysed using the inductive TCA.

The responses acquired to achieve the aim of this study indicated a mixed perception of online T & L, with some participants coupled with the reviewed literature studies showcased the necessity of this intervention, while others pointed out several challenges. Therefore, the aim of the study provided valuable insights into the perceptions of lecturers highlighting the positive and negative perceptions, complex challenges and the compromises made by the institution, emphasising the importance of online T & L as a mandatory intervention, the ongoing training and integration of online learning methods. Moreover, participants raised concerns about the adoption of online exams and potential cheating. Furthermore, participants highlighted issues like technophobia, unstable networks, and the need for adequate training in online teaching tools. Participants also acknowledged the role of online T & L in preventing the spread of COVID-19 and ensuring education continuity.

The findings based on the objective 01 focused on the readiness of lecturers to offer online T & L at UL. This objective in line with the consulted literature studies revealed a mixed level of preparedness among participants with some expressing surprise and admitted that they were not fully prepared for online T & L and indicated that the entire academic community, including lecturers, management, administration, exam staff and students, were unprepared. Moreover, concerns were raised about the lack of sufficient training, particularly in the use of the Blackboard Learn platform. On the other hand, some participants reported feeling adequately prepared and experienced no issues with online T & L. They highlighted previous training experiences and basic skill sets that enabled them to navigate online platforms effectively. These findings suggested the need for ongoing and improved training programmes to ensure the successful implementation of online T & L at UL.

Objective 2 of this study looked at the effects of online T & L on lecturers during COVID-19 and it was concluded, while linked with the reviewed literature, that poor attendance emerged as one of the significant concerns. Participants further highlighted that a considerable number of students were not attending online classes, mainly due to internet connectivity problems, lack of resources, including electronic devices such as laptops. With regard to the University's response to these effects, participants provided diverse responses. Some acknowledged the institution's efforts, mentioning the provision of laptops, data bundles and lecturers recorded lessons on Blackboard for students who missed the classes. However, conflicting views emerged, related to dissatisfaction with the training that were offered. Based on the findings, the need for comprehensive strategies to mitigate the challenges associated with online education is advised. Therefore, ensuring effective and equitable learning experiences for all students.

The findings based on the quality of online T & L, as offered by lecturers during COVID-19 at UL acted as objective 03 of this study. The participants, along with the literature guiding this study, emphasised that online T & L methods facilitated engagement and creativity in course delivery. Therefore, this was made possible through the utilisation of online platforms such as Blackboard Learn. However, concerns were raised about the quality of online T & L being compromised due to students' dishonesty or cheating in the examinations or when writing tests, ineffective communication, insufficient expertise for practical applications and lack of motivation. Having said that, other participants reported that the university ensured good quality of online T & L by providing training for both students and staff. The findings also highlighted the importance of providing laptops and data bundles to enhance access to online content. Some participants mentioned the use of proctoring tools and platforms like Turnitin to monitor exams and regulate plagiarism. The reported findings urge the need to address the challenges indicated by participants to improve the quality of online T & L and the continuation of the positive measures implemented by the university to ensure good quality of online education.

The findings based on the challenges of online T & L faced by lecturers during COVID-19 at UL guided the objective 04 of this study as well as consulted literature studies. Participants revealed several challenges faced by lecturers during the transition to online T & L. The most recurring issue was inadequate internet connectivity which was in line with low attendance and participation. Participants also complained about the power outage (Load shedding) which disrupted classes and increased workloads for lecturers. In addition, participants reported that the high cost and insufficiency of data bundles posed

challenges for effective online learning. However, with regards to whether the challenges were addressed by the university, they had these to say: The University provided support such as distributing data bundles, facilitating training sessions and enhancing Blackboard to meet the needs of online T & L.

Objective 5 focused on the proposed strategies implemented to better online T & L during COVID-19. Participants, while informed by the reviewed literature studies presented that Blackboard played an important role in UL's online T & L. Moreover, the participants indicated that UL provided adequate training programmes for effective online education and data bundles to address low attendance rates in online classes. The findings further pointed out that the continuity of education was possible through hybrid learning (Blended learning) approach. With regard to what can be done to improve online T & L, the participants highlighted the following: Suggested advanced training on platform usage specifically designed for online education, and the staff and students willingness to participants in online T & L was deemed essential for ongoing improvement, and the use of proctoring and plagiarism tools to maintain standardised assessments and reduce dishonesty were recommended by the participants.

5.4. STUDY'S LIMITATIONS

In this section, the study limitations are presented as follows: Research design and limited simple size, the contextualisation of the specific setting and interview-based data collection methods. Therefore, a notable limitation arises from small sample size, the focus of the study on the Department of Criminology and Criminal Justice at UL during COVID-19 excluding other UL's departments, which suggested that the applicability of the results to different settings is limited. The choice of using a Google Form for data collection has been highlighted to pose challenges unlike doing face to face interviews where the researcher would get in-depth information and attention. COVID-19 have been emphasised in this section as the hindrance for in-person interviews.

5.4.1 Research design and limited simple size

The choice of an exploratory research design was appropriate for this study. However, the research design is characterised by small sample size and the findings obtained from the research design are not easily generalisable to the broader population . This aligns with the study, where out of a population of 13 permanent and contracted staff members, only 10 participants formed part of the study sample and 9 out of 10 answered the semi-

structured KIIs. The 9 participants perceptions cannot entirely represent all the staff members given the diversity of UL. The positive side is that the researcher was able to reach data saturation from the Nine (09) participants.

5.4.2 The contextualisation of the specific setting

Another factor that is a limitation was the researcher focusing on the shift to online T & L during COVID-19 pandemic using only Department of Criminology and Criminal Justice as a case study. Therefore, transferring the findings to different settings or times will be difficulty or it should be done with caution. However, this was done because other faculties and schools at UL have conducted research regarding the adaptation of online T & L while the Department of Criminology and Criminal Justice had a scarcity of research on this issue or event. Furthermore, is that the staff and the students from this department were more heavily engaged or subjected to online T & L when compared to other faculties and schools.

5.4.3 Interview-based data collection methods

The researcher used a Google Form to gather data, which had several disadvantages. Additionally, participants often did not have enough time to complete the form or missed the Google link due to their busy schedules as they were lecturers who frequently receive emails. As the study was conducted during COVID-19, the researcher's physical access to the participants was restricted, which affected the researcher's ability to conduct in-person interviews. As a result, the researcher was unable to record verbal clues like nuanced, body language or expressions.

5.5. STUDY'S RECOMMENDATIONS

George (2023) concedes that the recommendation section of a research paper is where the researcher makes recommendations for interventions or approaches to deal with the problem that has been identified or to accomplish the findings of the aim and the objectives of the study. Many strategies have been put forth by the researcher to improve UL online T & L mode. The aim and objectives of the study might both be enhanced by these recommendations. On that note, several recommendations focused on improving the study aim, while others are intended to better the objectives of the study.

5.5.1 Recommendations to improve the study aim and related themes and sub-themes

Given the challenges highlighted by participants, there is a need for comprehensive training programmes for lecturers and students to enhance their skills to online tools such as Blackboard Collaborate. It is recommended that the University should invest more on technological infrastructure and the security of online examination platforms that can minimise the manipulation of the system and ensure the integrity of assessments. Improving and creating clear policies and guidelines for T & L is recommended. The researcher recommend continuation research on the effectiveness of online T & L strategies, especially post-COVID-19. Moreover, the researcher suggest communication and collaboration among lecturers and students.

Based on the themes and sub-themes to improve the study aim, the researcher recommended the following: The University should implement initiatives to reinforce the positive perception of online T & L on lecturers to prevent challenges, allocate resources to support and improve technological infrastructure, encourage the development of alternative assessment methods that align with the online learning environment . In addition, the university is recommended to establish a committee dedicated to assessing and address challenges related to online T & L.

5.5.2 Recommendations to improve study objective 01 and identified themes and sub-themes

Recognising that online T & L is surpassing contact learning, the university should adopt proactive approaches. This should involve anticipating the evolvement of online education and staying updated on technological advancements. Since the participants in this study highlighted that some trainings were inadequate, therefore, evaluation of the quality of training workshops regularly to ensure that the training meet the needs of the lecturers is recommended. To improve the readiness of lecturers, the ICT is recommended to continue assisting lecturers with technical support. Stemming from the study themes and sub-themes to improve objective 1, the researcher recommended the following aspects:

Therefore, the researcher recommended the following: comprehensive institution programmes that focus on technological skills and pedagogical strategies, establishment of mentorship programmes to assist educators in adapting to online learning, especially those who may have limited prior experience in using online T & L tools, the institution is

recommended to always have contingency plan for T & L, educators who have insufficient knowledge on online T & L should collaborate with those that are proficient in this area, develop a culture of continuous learning by encouraging educators to pursue ongoing professional development in online teaching, the university should collaborate with other institutions to share insights and knowledge for online T & L. Moreover, UL should provide comprehensive training programmes that will advance lecturers on technological skills and establish mentorship programmes for educators on online T & L. The ICT is urged to continue supporting lecturers with technical support. The institution is also recommended to collaborate with other institutions to share insights and resources.

5.5.3 Recommendations to improve study objective 02 and identified themes and sub-themes

To address the effects of online T & L, the University is recommended to implement strategies to improve the attendance and participation of the students. This could be strengthening the issue of attended register and applying the appropriate punishment for students who do not attend the minimum classes required. Exploring innovative teaching methods to keep students actively involved is needed. It is recommended that the university should continue to ensure that all students have access to electronic devices such as laptops. It is also recommended that the university should adopt a holistic approach to addressing the effects of online T & L by integrating mental health and wellbeing support because it has been indicated in the literature that the transition to online T & L have been stressful for both lecturers and students. Therefore, providing psychological support services that can contribute to a healthier and more resilient learning community. Based on the study themes and sub-themes to improve objective 02, the researcher recommended the following aspects:

The University should address the poor attendance and participation issues by implementing strategies such as improving internet connectivity, promoting student engagement and creating incentives that promote active participation in online classes, the university is recommended to support students to overcome technical challenges through employing workshops on using online platforms, the university is recommended to continuously upgrade LMS (Blackboard). Moreover, the university is recommended to continue and expand initiatives to provide electronic devices to students and staff and make it their responsibility to ensure that all individuals involved in online learning have access to necessary equipment for online T & L.

5.5.4 Recommendations to improve Study Objective 3 and Identified Themes and sub-themes

It is recommended that the University should employ strategies to maintain engagement and ensuring good quality of content and assessments delivered online. The use of online learning tools that detect plagiarism and verify the profile of the students and detect academic misconducts such as Turnitin and proctoring tools should be monitored and regularly evaluated. Collaboration among faculties is recommended as it can foster supportive environment for addressing issues and implementing effective online teaching methods. Awareness campaigns should be implemented to promote academic integrity and educate students about the consequences of committing academic misconducts and the importance of ethical behaviour in online assessments. From the study themes and sub-themes to improve objective 03, the researcher recommended the following aspects:

The university is urged to address the quality of online education by employing measures for good quality of online T & L, investing in technology infrastructure to minimise technical issues that affect the quality of online learning, the university is recommended to consistently train educators on the use of proctor and Turnitin tools for monitoring and plagiarism to promote good quality of online T & L, regularly update and review the tools used for maintaining assessment integrity, and collaborate with educational technology experts specialising in tools that maintain academic integrity.

5.5.5 Recommendations to improve Study Objective 04 and identified themes and sub-themes

It is recommended that the University should invest in reliable and high-speed internet to ensure effective to online platforms and online classes. Since it has been highlighted that some challenges of online learning were beyond institutional control such as load shedding. Therefore, the lecturers are recommended to record lectures, use offline resources or apps that do not need a high-speed internet connection such as WhatsApp or rescheduling online classes. Relating to the study themes and sub-themes to improve objective 04, the researcher recommended the following aspects:

The university is recommended to implement measures to address load shedding or power outage issues by providing backup power solutions (Generators) and other alternatives energy sources, the university is recommended to conduct a regular assessments of internet connectivity issues by engaging with the local communities and stakeholders to

find a sustainable solutions for on campus and off campus students, and moreover, the researcher recommends the university to foster collaboration with the government, non-governmental organisations (NGO), and private sectors to address challenges associated with online T & L.

5.5.6 Recommendations to improve Study Objective 05 and identified themes and sub-themes

The university should always seek input from stakeholders that are involved in the disseminating of education, identify areas to improve, address concerns and adapt strategies. It is recommended that lecturers and students should create virtual T & L experience that foster a sense of community. Furthermore, all the methods employed to enhance online T & L should be thoroughly evaluated to better online learning experience. The researcher suggested the following recommendations based on the study themes and sub-themes extracted from objective 05:

The University is recommended to encourage and support the continuation of blended learning approaches by ensuring that both online and face-to-face components are effectively integrated to allow for more versatile and adaptive educational mode, establish a culture of continuous training for lecturers and students, promoting a proactive approach to staying updated on emerging technologies, pedagogical methods, and best practices in online education, and create a supportive environment that acknowledges the efforts of both staff and students in adapting to online learning, fostering a positive attitude toward the integration of technology in education.

5.7. FUTURE RESEARCH STUDIES

This study focused on online T & L during COVID-19 from lecturers' perceptions at UL. Future research studies can focus on both students and lecturers perspectives on online education. In this study, a small sample was used, and the researcher managed to acquire relevant information. With that said, future research studies should use larger samples to acquire more concrete information regarding online T & L. This can be achieved through employing mixed methods, the combination of qualitative and quantitative approaches to sample as many participants as possible. While the study focused on the Department of Criminology and Criminal Justice, future research could expand on other academic departments or incorporate many at once.

Future research studies can compare experiences, perspectives, and strategies employed at UL with other educational institutions and identify other alternative measures that can be implemented by the UL to better online T & L. Future studies can delve deeper into unethical behaviour committed during online examinations. Therefore, understand the root causes and explore innovative solutions to maintain the integrity of online assessments. This would contribute valuable insights to the academic community. Future studies could assess the challenges of online education during the pandemic in post-COVID-19 by providing comprehensive understanding of its lasting effects. Future studies could investigate advanced quality assurance measures that could ensure the integrity and quality of online education.

Since blended learning has been proposed by participants for the future of education. Future studies could evaluate blended learning approaches and assess its effectiveness. Given that this study did not fully explore or assess the mental health and wellbeing effects of lecturers and students. Future studies could investigate the challenges of online T & L on the mental health and well-being of both lecturers and students. Therefore, proposing support mechanisms to promote mental heathy and wellbeing. Future studies could explore strategies to enhance students' attendance and participation in online classes, hopefully, the studies could highlight issues such as connectivity problems and students lack of interest in attending classes and provide solutions.

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ANNEXURE A: KEY INFORMAT INTERVIEW SCHEDULE GUIDE FOR LECTURERS

ONLINE TEACHING AND LEARNING DURING CORONAVIRUS-DISEASE-2019: A CASE OF THE DEPARTMENT OF CRIMINOLOGY AND CRIMINAL JUSTICE LECTURERS' PERCEPTIONS AT THE UNIVERSITY OF LIMPOPO

You are invited to participate in a survey entitled: "Online Teaching and Learning during Coronavirus-Disease-2019: A case of the Department of Criminology and Criminal Justice Lecturers' perceptions at the University of Limpopo." This study is for academic purposes only, and your name will not be required to maintain anonymity. For more information about the study, please contact Mr. RN Msisinyane at 060 757 3459 or email 201802485@keyaka.ul.ac.za / nyikorivoningo372@gmail.com, the supervisor - Prof. Jaco Barkhuizen at jaco.barkhuizen@ul.ac.za and co-supervisor Prof. Witness Maluleke at witness.maluleke@ul.ac.za.

CONSENT TO PARTICIPATE IN THE STUDY

1. Do you consent to this study?

Mark only one oval.

- ◯ Yes
- ◯ No

2. What are your perceptions on online teaching and learning(T&L) during Coronavirus desease-2019 (COVID-19)?

READINESS FOR ONLINE TEACHING AND LEARNING

3. Were you prepared for online T&L during Coronavirus Disease-2019? Elaborate your answer

4. Did you receive adequate training for online T&L during this period? Elaborate your answer.

THE EFFECTS OF ONLINE TEACHING AND LEARNIN\G

5. What are the online T&L affects you have experienced?

6. Were these effects addressed by the university? Elaborate your answer.

THE QUALITY OF ONLINE TEACHING AND LEARNING

7. What does the quality of online T&L methods entail?

8. What measures were taken by the university to ensure the good quality of online T&L?

THE CHALLENGES OF ONLINE TEACHING AND LEARNING

9. What are the online T & L challenges you experienced during COVID-19?

10. Were the challenges experienced addressed by the institution? Elaborate your answer

STRATEGIES THAT CAN BE IMPLEMENTED TO BETTER ONLINE TEACHING AND LEARNING

11. What are the strategies used by the institution for online T&L?

12. What do you think can be done to improve online T&L?

ADDITIONAL RESPONSE REGARDING THIS STUDY

13. Is there any response that you want to make regarding online T&L at the University of Limpopo?

THANK YOU FOR YOUR COOPERATION AND PARTICIPATION IN THIS STUDY

APPENDIX B: INFORMED CONSENT FORM TO BE USED DURING DATA COLLECTION

Dear Participant

I am Rivoningo Nyiko Msisinyane, a master's candidate from the Department of Criminology and Criminal Justice at the University of Limpopo (UL). I am conducting the research entitled: *"**Online Teaching and Learning during Coronavirus-Disease-2019: A case of the Department of Criminology and Criminal Justice Lecturers' perceptions at the University of Limpopo.**"* The main aim of this study is to analyse online teaching and learning practices under the Department of Criminology and Criminal Justice during the Coronavirus-Disease-2019 (COVID-19) pandemic by acquiring staff (Lecturers) reactions or perspectives.

The researcher is aware of time constraints and busy schedules and therefore would appreciate each person who will participate in the study. Furthermore, your co-operation will assist me in reaching my aim and my objectives. The knowledge and information gained from this study might be useful to the South African Higher Education Institutions (HEIs) and the Department of Higher Education and Training (DHET) in terms of how they can enhance online Teaching and Learning practices. Hence, the following organisations might benefit from the study: Academic Community, Industry, and the South African Society. To gather the information needed for the research, the researcher would like to ask questions relating to online teaching and learning practices during COVID-19.

Your anonymity will be guaranteed, and your name will not be required. All information will be treated confidentially. 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 stored in secure storage and destroyed after 5 years in terms of the UL Research Policy. You have a choice to participate, not participate, or stop participating in the research. You will not be penalised for taking such actions. Your involvement is purely for academic purposes only, and there are no financial benefits involved.

If you are willing to be interviewed, kindly indicate by ticking as applicable hereunder.

Willing	Not willing

If you have any questions about this research, I can be contacted at: 060 757 3459 201802485@keyaka.ul.ac.za/ nyikorivoningo372@gmail.com

Should you require further clarity you can contact my supervisor Prof J Barkhuizen at: jaco.barkhuizen@ul.ac.za and my co-supervisor Prof W Maluleke at 071 912 7782/015 268 4881, witness.maluleke@ul.ac.za

DECLARATION

I…… (Full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project; I consent to participating in this research project.

I understand that I am at liberty to withdraw from this study at any time, should I so desire.

SIGNITURE OF PARTICIPANT **DATE**

…….. ……

ANNEXTURE C: LETTER TO REQUEST PERMISSION TO CONDUCT RESEARCH AT THE UNIVERSITY OF LIMPOPO

UNIVERSITY OF LIMPOPO

Department of Criminology and Criminal Justice

Private Bag X1106,Sovenga,0727,South Africa

Tel: 060 757 3459, Email 201802485@keyaka.ul.ac.za

To: Whom it May Concern

From: Mr Msisinyane RN , Master of Arts Candidate, Department of Criminology and Criminal Justice

Date: 07 December 2023

Subject: Letter to Request Permission to Conduct Research at the University of Limpopo

I, Mr Msisinyane RN,Student Number: 201802485 registered for the Degree of Master of Arts in Criminology offered at the University of Limpopo in the Department of Criminology and Criminal Justice writing this letter to formally request permission to conduct research at the University of Limpopo, entiled: “Online Teaching and Learning during Coronavirus-Disease-2019: A case of the Department of Criminology and Criminal Justice Lecturers’ perceptions at the University of Limpopo.”

To successfully complete the degree, I must complete a dissertation. I am,therefore, humbly request that you assist me by granting a permission to conduct the Key Informant Interviews (KIIs) and collect data by interviewing Criminology lecturers.

Please note that the data collected at the University of Limpopo will solely be used for academic purposes as prescribed by ethical considerations that are approved by the University of Limpopo's Turfloop Research Ethics Committee (TREC).

I would greatly appreciate your consent at my request.

Thank you for your time and looking forward to a positive response.

Your sincerely,

Mr Msisinyane RN (Researcher)

ANNEXTURE D: TURFLOOP RESEARCH ETHICS COMMITTEE CERTIFICATE OF APPROVAL

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 4713, Fax: (015) 268 2306, Email: moore.hutamo@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE

ETHICS CLEARANCE CERTIFICATE

MEETING: **22 May 2023**

PROJECT NUMBER: **TREC/48/2023: PG - Amended**

PROJECT:

Title:	The analysis of online Teaching and Learning during Coronavirus disease-2019: An exploratory study on Department of Criminology and Criminal Justice lecturers' perceptions.
Researcher:	RN Msisinyane
Supervisor:	Prof J Barkhuizen
Co-supervisor:	Prof W Maluleke
School:	Social Sciences
Degree:	Master of Arts (Criminology and Criminal Justice)

PROF D MAPOSA
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:

i) **This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.**

ii) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.**

iii) **PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.**

Finding solutions for Africa

ANNEXTURE E: FACULTY OF HIGHER DEGREES COMMITTEE CERTIFICATE OF APPROVAL

University of Limpopo
Faculty of Humanities
Executive Dean
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 4895, Fax: (015) 268 3425, Email:Satsope.maoto@ul.ac.za

DATE: 14 April 2023

NAME OF STUDENT: **MSISINYANE, RN**
STUDENT NUMBER: [redacted]
DEPARTMENT: **MA - Criminology**
SCHOOL: **Social Sciences**

Dear Student

FACULTY RATIFICATION OF PROPOSAL (PROPOSAL NO. FHDC2023/3/3.3.2)

I have pleasure in informing you that your MA proposal and Ethical Clearance application was ratified at the Faculty Higher Degrees Meeting on 15 March 2023.

TITLE: The analysis of online Teaching and Learning during Coronavirus disease-2019: An exploratory study on Department of Criminology and Criminal Justice lecturers' perceptions

Note the following:

Ethical Clearance	Tick One
In principle the study requires no ethical clearance, but will need a TREC permission letter before proceeding with the study	
Requires ethical clearance (Human) (TREC) (apply online) Proceed with the study only after receipt of ethical clearance certificate	√
Requires ethical clearance (Animal) (AREC) Proceed with the study only after receipt of ethical clearance certificate	

Yours faithfully

TD Maoto RS

Prof RS Maoto,
Executive Dean: Faculty of Humanities
Director: Prof SL Sithole
Supervisor: Prof J Barkhuizen
Co-supervisor: Prof W Maluleke

Finding solutions for Africa

ANNEXTURE F: SCHOOL OF SOCIAL SCIENCES RESEARCH AND ETHICS COMMITTEE CERTIFICATE OF APPROVAL

University of Limpopo
Faculty of Humanities
Office of the Director
School of Social Sciences
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 2683, Fax: (015) 268 2230, Email: sello.sithole@ul.ac.za

22 November 2022

NAME OF STUDENT: Msisinyane, RN
STUDENT NUMBER: 201802484
DEPARTMENT: Criminology and Criminal Justice
SCHOOL: Social Sciences
QUALIFICATION – Masters in Criminology

Dear Student

SCHOOL APPROVAL OF PROPOSAL AND RECOMMENDATION FOR APPROVAL OF ETHICAL CLEARANCE

It is a pleasure to inform you that in its meeting of 22 November 2022, the School of Social Sciences Research & Ethics Committee recommended the approval of your application for ethical clearance. Without delay please apply directly with TREC in order for a certificate to be issued.

Your title was approved as follows:

The analysis of online Teaching and Learning during Coronavirus disease-2019: An exploratory study on Department of Criminology and Criminal Justice lecturers' perceptions

Note the following:

Ethical Clearance	Tick One
In principle the study requires no ethical clearance, but will need a TREC permission letter before proceeding with the study	
Requires ethical clearance (Human) (TREC) (apply online) Proceed with the study only after receipt of ethical clearance certificate	✓
Requires ethical clearance (Animal) (AREC) Proceed with the study only after receipt of ethical clearance certificate	

Yours faithfully

Prof SL Sithole
Director: School of Social Sciences
Supervisor: Prof J Barkhuizen Co-supervisor: Prof J Maluleke

ANNEXTURE G: TURNITIN REPORT

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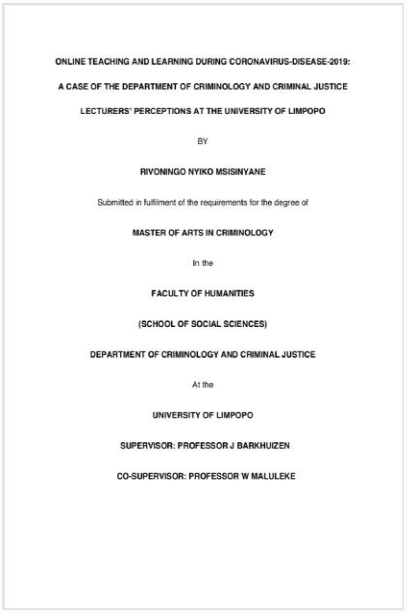

ONLINE TEACHING AND LEARNING DURING CORONAVIRUS-DISEASE-2019:

A CASE OF THE DEPARTMENT OF CRIMINOLOGY AND CRIMINAL JUSTICE

LECTURERS' PERCEPTIONS AT THE UNIVERSITY OF LIMPOPO

BY

RIVONINGO NYIKO MSISINYANE

Submitted in fulfilment of the requirements for the degree of

MASTER OF ARTS IN CRIMINOLOGY

In the

FACULTY OF HUMANITIES

(SCHOOL OF SOCIAL SCIENCES)

DEPARTMENT OF CRIMINOLOGY AND CRIMINAL JUSTICE

At the

UNIVERSITY OF LIMPOPO

SUPERVISOR: PROFESSOR J BARKHUIZEN

CO-SUPERVISOR: PROFESSOR W MALULEKE

MSISINYANE

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Noor Rohana Mansor, Asyraf Hj Ab Rahman, Ahmad Tajuddin Azza J., Roswati Abd Rashid, Nurul Ain Chua. "New Norms of Online Teaching and Learning: Covid-19 Semester Experience for Universiti Malaysia Terengganu Students", Academic Journal of Interdisciplinary Studies, 2021

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Bertha Jacobs, Hanri Taljaard-Swart, Nadene Marx-Pienaar, Lizette Diedericks et al. "Preparing students for the future workplace: how online teaching and learning during the COVID-19 pandemic hone required transferable skills", Education + Training, 2023

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RE: EDITORIAL LETTER: Rivoningo Nyiko Msisinyane

DATE: 22 February 2024

This letter serves to inform you that I have edited a research dissertation titled: "**THE ANALYSIS OF ONLINE TEACHING AND LEARNING DURING CORONAVIRUS-DISEASE-2019: AN EXPLORATORY STUDY ON DEPARTMENT OF CRIMINOLOGY AND CRIMINAL JUSTICE LECTURERS' PERCEPTIONS"** by **Msisinyane Rivoningo Nyiko**. A version of the dissertation with the evidence of my editorial interventions was sent to the researcher and is available upon request, should you need it. Unless tampered with prior to your reception, I trust that you will find the editorial quality in order.

Regards

Dr Moffat Sebola

_____