What about online teaching? University of KwaZulu-Natal students' perceptions about staff readiness to take on online teaching during the Covid-19 pandemic

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This journey has been a test of endurance, intellect, and spirit. I stand here today, not just having completed this research, but as a testament to the unwavering support and boundless love I have been fortunate to receive.

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ABSTRACT

The shift to online learning during the Covid-19 pandemic dramatically changed educational landscapes worldwide (Park et al., 2020). While the immediate challenges and successes of this transition have been widely documented, it is essential to understand its long-term impact (Li, 2022). Despite some positive feedback from existing studies, there is an urgent need for further evaluation about online teaching. Concerns were raised about technological challenges, particularly in the South African context, where many universities struggled to implement online teaching and learning effectively. For instance, a study by Malatji et al. (2021) assessed perceptions of online learning and teaching at the University of Limpopo during the Covid-19 pandemic. Similarly, a 2021 study by Mbambo at the University of KwaZulu-Natal-Pietermaritzburg focused on third-year media students' perceptions of online learning in 2020. Both studies indicated that students felt their lecturers were not adequately prepared to teach online.

Moreover, disparities in digital access and literacy significantly impacted the student learning experience, affecting how students perceived and interacted with their lecturers in virtual environments. Therefore, drawing on existing studies regarding emergency online learning and teaching in South Africa and addressing the issue of the digital divide, this study investigates how well UKZN-P Humanities lecturers were equipped to teach effectively and efficiently online during Covid-19, as perceived and experienced by students. Following a qualitative approach, the research used questionnaires and focus group interviews to collect data, and thematically analysed the data to explore these perceptions. It was discovered that UKZN-P Humanities students had both positive and negative perceptions regarding their lecturers' readiness for online teaching with socio-economic factors, such as students' high school backgrounds, geographic locations, expectations, preferences, and levels of study, playing a large role in how they perceived their lecturers' ability to teach effectively online during the pandemic.

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CHAPTER ONE – INTRODUCTION

1.1 INTRODUCTION

In today's world, access to digital technology is not a luxury but a necessity. This need was emphasised during and after the outbreak of Covid-19, as the entire world was compelled to find immediate solutions to the crisis. Government organisations rapidly adopted digital transformation to ensure that businesses, educational institutions, and the general public had access to digital technologies, preventing anyone from being left behind (Mcwabeni, 2024). In a study about online learning during the Covid-19 pandemic, Makumbe (2020) explained that in developing countries, the digital divide between the haves (wealthy) and the have-nots (poor) was large and manifested in different forms. Typically, society is constructed based on multi-faceted socioeconomic levels, with a significant portion of the population lacking access to fundamental needs such as food, health, and education, among other things, making equal access to digital technology a less important concern (Tadess and Muluye, 2020). As a result, when all South African higher education institutions were required to conduct their everyday teaching and learning activities online during the Covid-19 pandemic, the digital divide became more worrisome, particularly for the underprivileged.

When I was faced with the task of completing my Honours research, which evaluated students' perceptions about the impact of online learning during lockdown in 2020, I noticed one key issue that students kept highlighting: the extent to which they were dissatisfied with the online teaching performance of their lecturers. Taking this into account and existing studies on online learning, and the issue of digital divide, this study extended on the findings of my Honours and evaluated the extent to which lecturers were equipped to teach effectively and efficiently online during Covid-19, as perceived and experienced by students. By carefully evaluating and assessing these students' perceptions and experiences, this study aimed to add onto research literature in Media and Cultural Studies, and offer some possible guidelines for future online teaching.

1.2 BACKGROUND OF THE STUDY

Mishi and Anakpo (2022) argue that the Covid-19 pandemic highlighted significant discrepancies in access to technology and internet connectivity, especially among underprivileged groups around the world. Parker et al. (2020) add that the rapid transition to online learning and teaching during this time aggravated existing educational inequities in African countries including South Africa, where there is also an extensive record of racial disparities between the poor and wealthy. To be specific, the digital divide in South Africa's educational system has been exasperated by apartheid, and access to technology infrastructure and teaching and learning materials still remain racially imbalanced generally, and thus negatively affect certain groups of students (Jantjies, 2020). Globally, the concept of the digital divide developed in the 1990s, initially concentrating on divide in access to computers, but later broadening to incorporate broader issues connected to internet access and digital technologies (Van Dijk, 2020). Mcwabeni (2024) argues that presently, the inequality extends beyond whether or not a person has access to a computer or the internet. It also considers how people can afford the internet, the quality and speed of their internet connectivity, how frequently they use the internet, their reasons for doing so, and their levels of digital literacy (Mcwabeni, 2024).

As a result, this study discusses research concepts highlighted by Mcwabeni (2024), Jantjies (2020), Van Dijk (2020) and other relevant researchers, to gain a greater understanding of the digital divide, digital literacy, artificial intelligence literacy, and the impact they have had on online learning and teaching during and after the Covid-19 pandemic. Consequently, it was critical that my dissertation was built on established foundation of literature linked to relevant digital concepts in higher education institutions, such as digital literacy and the rapidly developing concept of artificial intelligence literacy. According to List (2019), digital literacy is not a new term, and describes the ability to successfully use technology to access, assess, produce, and convey information. List (2019) adds that this term has changed greatly in recent research as a result of the emergence of the internet and mobile devices, expanding beyond traditional literacy to incorporate multiple forms of digital interaction.

In the framework for this study, it was critical to establish connections between digital literacy and education, specifically its impact and influence on online learning during the Covid-19 pandemic.

Turnbull et al. (2021) expressed that the abrupt transition to online learning during the Covid-19 pandemic demanded both students and lecturers to have access to digital technologies and internet connectivity, as well as digital literacy abilities. Correspondingly, online learning had an enormous impact on lecturers' responsibilities and underlined the significance of digital literacy in higher education, since some of them lacked the necessary digital skills, digital teaching techniques, and digital and social development to engage in online learning successfully (Ali, 2020). Sayaf et al. (2022) explained that understanding the factors that may influence students' perceptions of lecturers' digital literacy and ability to teach well online is critical for lecturers in order to improve teaching quality and evaluate how they can meet the expectations of learners in an online environment in the coming years.

Crawford (2023) emphasises that the pandemic presented new challenges for higher education learning and teaching by increasing the demands on emergency preparedness, requiring universities to adapt to shifting teaching and learning environments. This exposed many students and lecturers to pre-existing digital divide and digital literacy issues, making it difficult for them to effectively teach and learn online (Crawford, 2023). As a result, in order to improve the quality of future online teaching and learning, it is critical to examine the positive and negative aspects of online learning during the Covid-19 pandemic (Elumalai et al., 2021).

The role of artificial intelligence (AI) also needs to be considered as more and more technology users are using it to simplify administrative tasks, improve the analysis of data, and give students more personalised learning experiences. For example, AI applications have assisted lecturers in managing enormous workloads while dealing with issues such as social exclusion and motivation among students (Chen et al., 2020). Therefore, understanding how learners perceive their lecturers' expertise with AI tools might have significant effects on their engagement levels and provide vital input on AI integrated teaching approaches (Chen et al., 2020).

1.3 RESEARCH PROBLEM

The above sub-sections briefly mentioned how the Covid-19 pandemic accelerated the shift from traditional face-to-face instruction to online learning at educational institutions around the world.

Evidently, the rapid transition presented significant challenges and opportunities for both students and lecturers (Crawford, 2023). Despite some favourable feedback from existing studies, there is an urgent need to further evaluate online learning.

For starters, there were technological challenges with learning online. A considerable number of students and lecturers had severe technological challenges, such as poor internet connectivity and insufficient access to key gadgets, which impacted their learning and teaching experience (Hassan, 2021). Furthermore, the Covid-19 pandemic sparked widespread concern about the digital divide and digital literacy, particularly in developing countries, causing an extensive investigation into online teaching and learning (Litchfield et al., 2021). Litchfield et al. (2021) add that during the pandemic, students, as well as lecturers, in developing countries encountered major challenges in accessing online education due to insufficient internet connectivity and a lack of digital devices. For example, research from South Africa indicated that most universities struggled to participate in online learning, with some resorting to climbing trees for internet connection (Mpungose, 2020).

Additionally, socio-economic gaps impacted online learning, with differences depending on race, ethnicity, gender, economic background, and educational level (Rizvi et al., 2019). Correspondingly, Gillis and Krull (2020) added that individuals from low-income backgrounds, for example, were most severely impacted by the transition to online education. Another concern is that neither lecturers nor students were ready for online learning, especially the lecturers who lacked the necessary training (Dhawan, 2020). A number of lecturers found it challenging to swiftly adapt to new digital teaching platforms and tools required for online learning due to a lack of formal training in online teaching methodologies and technology prior to the pandemic (Turnbull et al., 2021). Despite numerous studies on online learning during the pandemic, as well as the impact of the digital divide and digital literacy on online learning during the Covid-19 pandemic, there are still unresolved perceptions and experiences shared by both students and lecturers, necessitating further research. In this context, the research will investigate how well lecturers at University of KwaZulu-Natal at Pietermaritzburg Campus (UKZN-P) were equipped to efficiently and effectively teach online, as perceived and experienced by students. To clarify the direction and purpose of this research project, the following sub-sections will focus on the research aims/ objectives and research questions.

1.4 RESEARCH AIMS AND OBJECTIVES

The first objective was to understand and evaluate how well lecturers at University of KwaZulu-Natal-Pietermaritzburg Campus (UKZN-P) were equipped to efficiently and effectively teach online, as perceived and experienced by students. This included assessing students' experiences of lecturers' technical abilities, their familiarity with online teaching platforms, and their overall perceived confidence in teaching online effectively. The second objective was to assess lecturers' perceived level of digital literacy, as perceived and experienced by students. This involved assessing students' experiences of their lecturers' abilities to use various digital platforms for content delivery, assessment, testing, and examination, as well as student-lecturer interaction. The third objective was to look into how UKZN-P Humanities students perceived their lecturers' proactiveness in tackling challenges caused by online learning. This entailed assessing how students experienced their lecturers' capacity to discover timely and effective solutions during the rapid transition to online learning, and how they were able to offer academic support and guidance to students. The fourth objective was to provide recommendations based on students' experiences to improve lecturers' preparedness for future online learning as digital teaching becomes more commonplace. Therefore, this study will be guided by the research questions below.

1.5 RESEARCH QUESTIONS

Overall, this research aimed to understand and evaluate how well lecturers at the UKZN-P were equipped to efficiently and effectively teach online, as experienced by UKZN-P Humanities students. Hence, the key research question of this study is: "What are UKZN-P Humanities students' perceptions about their lecturers' preparedness to access and use online learning technologies necessary for studies during Covid-19?"
In order to answer this key question, three sub-questions were developed:

- How well were UKZN-P Humanities lecturers' able to create sufficient online lecturer-student interactions?
- How did UKZN-P Humanities students perceive the extent to which their lecturers were able to offer academic guidance and support during Covid-19?

- How did UKZN-P Humanities students think lecturers could improve their online teaching in the future?

1.6 CONCLUSION

In this introductory chapter, the researcher outlined the research problem concerning online learning experiences, which included technological challenges, the digital divide, and digital literacy, particularly in developing countries, as well as an overall lack of readiness of both students and lecturers to engage with emergency online learning. The chapter also provided some context for this study by evaluating previous literature on global online teaching and learning experiences. Furthermore, the chapter emphasised the importance of this research in bridging the information gap about some unexplored opinions and experiences shared by both students and lecturers concerning online learning during the COVID-19 pandemic.

In Chapter Two, the research will focus on the literature review and theoretical framework. This chapter will initially explore the key theoretical concepts for the study by exploring theories such as the digital divide, digital literacy and artificial intelligence (AI) literacy. Secondly, the chapter investigates important topics which ground the study by consulting and studying contemporary literature on emergency online learning in South Africa. The literature will specifically review the perceived effectiveness and efficiency of lecturers' digital access and skills in online learning during the pandemic. Additionally, it will explore students' perceptions of lecturer-student interactions and the academic guidance provided by lecturers during online learning in response to Covid-19. Chapter Three, will discuss the research design and methodology by outlining the approach used for data collection, data analysis and sampling technique. Specifically, the chapter will look at interpretivism paradigm, qualitative approach, online questionnaires, focus group interviews and snowballing technique. Chapter Four focuses on data analysis and discussion, while Chapter Five focuses on results and conclusions by detailing the study findings in relation to the research objectives and drawing implications from the data obtained.

CHAPTER TWO – LITERATURE REVIEW

2.1 INTRODUCTION

In 2020, in an article for *Inside Higher Education,* Doug Lederman asked, "will the shift to remote teaching be boon or bane for online learning?" after Covid-19 paralysed all sectors, including education. In an article published during the early stages of the pandemic, Stanistreet et al. (2020) argued that for education sectors globally to prepare better for future 'pandemics', and similar disruptive occurrences, there was a need to study this historical moment in time, and reflect on what occurred, its impacts, and the underlying issues that were brought to the forefront, or even intensified as a result of Covid-19. In an attempt to document the effects of implementing online learning (specifically in areas where there was minimal internet access), Laksana (2020) expressed that one of the biggest concerns was educators' readiness to effectively and efficiently teach online.

Correspondingly, in the researcher's Honours project on perceptions about the impact of the abrupt shift to online learning, the majority of students stated that lecturers at the University of KwaZulu-Natal (one of South Africa and Africa's top universities) were not technologically or emotionally equipped to teach online during the Covid-19 pandemic (Mbambo, 2021). It appeared that lecturers' pre-pandemic experience had a significant impact on how successfully they adjusted to being required to teach online due to the pandemic (Mbambo, 2021). Chikasha (2023) presented a noteworthy debate about online teaching, and said that while some lecturers welcomed online learning, and were already using blended learning to complete online teaching prior to Covid-19, most lecturers preferred traditional face-to-face teaching methods, so saw no need to use digital teaching methods (Chikasha, 2023).

However, because of the Covid-19 pandemic, lecturers were essentially left with no alternative options but to teach students online in order to continue with the school year (Almendingen et al., 2021). Neither their opinions regarding online learning nor whether they had any prior experience with it were considered (Almendingen et al., 2021). In Laksana's study (2020), it was further highlighted that apart from relevant digital skills that lecturers needed to teach well online, they also needed to prepare, well in advance, the necessary learning materials to meet the needs of a specific course. Correspondingly, in a study on students' perceptions about Arabic online learning,

it was argued that an educator's role is key in online learning as it keeps students active and academically focused (Bahruddin and Febriani, 2020). Therefore, this chapter will focus on some of the various themes which were discovered within literature pertaining to the research topic itself. The first three sub-sections outline the guiding theoretical framework, specifically focusing on the digital divide, digital literacy, and AI literacy. The subsequent sub-sections examine contemporary studies regarding perceptions of lecturers' performance during emergency online learning in South Africa.

2.2 THE DIGITAL DIVIDE – A GLOBAL OVERVIEW

The introduction of digital technologies transformed the way people communicate and engage on a global scale (Dutton, 2004). While these technologies are found throughout society and promise a network society that can function beyond the constraints of a set time and place, there is a significant portion of the world's population that is excluded (Barney, 2004). In the early 1990s, researchers began to explore the impact of the 'digital divide,' which differentiates between those with and without access to information and communication technologies. However, in early studies, researchers referred to this gap by many terms, such as information inequality, information gap, knowledge gap, and computer and media literacy gaps (Van Dijk, 2006). Similarly, Siapera (2018: 70), explained that the early days of academic study into the internet, the digital divide was simply understood as "either having access to the internet or not having access to the internet". However, the digital divide, like most concepts, is complex and with multiple connotations rather than being straightforward (Gunkel, 2003).

For starters, the initial concept depicts a simple division between two divided groups with a significant divide between them. The second connotation is that this deep divide cannot be bridged. Thirdly, there is a sense that this deep 'difficult to bridge' divide is all about inequalities between the haves and have-nots. The last implication implies that the divide is fixed, when in fact it is always changing (Van Dijk, 2002). Regardless of the early implications and confusions surrounding this concept, comprehending early studies on the digital divide is critical for multiple reasons, as these foundational discoveries impact current conversations and policies about digital inequality. Therefore, the following sub-section will briefly look at the early definitions of the digital divide.

2.2.1 Early Studies on the Digital Divide

In a study published over 20 years ago about rethinking the digital divide, Warschauer's (2003) key argument opposed earlier definitions of the concept by highlighting that the digital divide should not be understood as a binary divide between people who either have or do not have physical access to computers and an internet connection, but should also include additional factors that allow people to use technologies well. Specifically, these included one's societal factors like education, language, literacy, community and relationships, amongst others (Warschauer, 2003). However, before diving deeper into these factors, and explaining why they should be considered as measures of the digital divide, Warschauer (2003) looked at the advent of digital technologies in society and how they rapidly became important determiners of individual's social exclusion and inclusion. Warschauer (2003) stated that before the introduction of new technologies interaction, engagement and communication in the global economy, education and social settings were limited to specific spaces and time. The creation of digital technology, especially the internet, fostered a new society in which multi-texts, images, and audio could be transmitted to a mass audience, across space and time.

Castells' three-volume series *The Information Age, Economy, Society and Culture* attempts to define this new information society. In the first volume, Castells (1996) explores how humans experience economy, society and culture with the advent of digital networks. Without disregarding other important arguments in this study, perhaps one of Castells' crucial points is his understanding of the network societies, specifically, how it allows for a new flow of capital, information and technology which can be typically defined as a 'space of flows'. This space of flows affects how people experience time because what was usually known as linear and measurable time is being challenged through constant connectivity, instantaneous communication, and the dissolution of traditional social structures (Castells, 1996). This space of flows and timeless time offers the possibility of carrying out certain activities without the constraints of proximity, as well as an asynchronous interaction in chosen time, at a distance (Castells, 1996). For example, Instagram lives are spaces where different users in different time zones and places can interact without the constraints of contiguity and time. This example should not be simplified to just saying different Instagram users have the same experience, it just means they can co-exist within the app even if they are kilometres and time apart.

Castells (2001, cited in Warschauer, 2003: 28) predicted what is happening today when he expressed that:

> "the creation of multimedia also necessitates a complex array of semiotic, technical, and design skills and understandings, and differential access to these skills and knowledge will be one important divider between the "interacting" and the "interacted" in tomorrow's economy and society".

In simpler terms, an individual's possession of digital skills, and the extent to which they interact and engage with new media technologies, will differentiate between those who become either active or passive socio-economic citizens in the vastly growing information societies (Castells, 2001, cited in Warschauer, 2003). It is because of this factor and many other factors like education, gender barriers, ethnicity, and socio-economic class that sparked Warschaeur's (2003) enthusiasm to rethink the concept of digital divide. Nielsen (2006) presents a notable argument about the digital divide. He claims that despite the fact that the introduction of digital technology will provide new opportunities to some part of the global population, other portions of the population will be excluded, putting them at a disadvantage (Nielsen, 2006). To further examine the concept, he divided it into three stages: the economic divide, the usability divide, and the empowerment divide. Each stage addresses a distinct aspect of the challenges that people have when accessing and using digital technologies (Nielsen, 2006).

The economic divide accentuates the reality that some people cannot afford to purchase digital equipment like computers and cellphones. Furthermore, some people cannot afford reliable and high-speed internet (Nielsen, 2006). The usability divide refers to the degree to which technology utilisation is difficult, preventing a part of the population from using digital technologies effectively and efficiently. Literacy skills are essential in this level. For example, older generations who are unfamiliar with modern technologies are typically on the wrong side of this divide (Nielsen, 2006). The empowerment divide refers to the fact that only a tiny percentage of users capitalise on the potential provided by technology. This is mirrored in participation inequality, which reveals that 90% of internet users are passive observers rather than contributors. According to Nielsen (2006), 9% of users participate occasionally, while only 1% contribute regularly.

Today, the precise percentage of internet usage can be challenging to determine due to changing internet behaviors, however, current research indicates that the behaviors of so-called 'passive' users (those who solely consume content without actively contributing) have evolved, and it is

likely considerably lower than the 90% Nielsen reported 19 years ago (Bu et al., 2021). This is mostly because the concept of a passive user has changed as new media platforms, such as social media, have emerged. Furthermore, determining internet user behavior across multiple platforms and devices is quite complicated. There is no single, globally accepted measurement for 'passiveness.' However, while arguably Nielsen's argument is basic by today's standards, it played an important part in determining how people view internet user behavior, paving the way for contemporary thinking on various degrees of interaction (Bu et al., 2021).

Another significant early study on the digital divide is by Van Dijk (2006). According to Van Dijk (2006), there are four levels of access namely: material, motivational, skills and usage access. Van Dijk views access to technology as a process rather than something that requires a single attribute, and according to his theory, motivation marks the beginning of this process. This particular level describes a willingness and desire to interact with technology. It includes the person's attitudes, demands, and incentives which motivate them to explore digital technologies. Without motivation, obtaining physical access becomes unlikely (Van Dijk, 2006). This is because people's decisions and efforts to gain physical access to digital technology are influenced by motivation, as people are more likely to invest in technology if they see a clear purpose or advantage in doing so. For example, some people have never used the internet and rely on traditional sources for information and communication; they use SMS and phone calls to communicate with loved ones and do not use any advanced digital technologies; thus, they do not believe they need the internet and regard it as a complicated or unnecessary expense. As a result, they will see no need to buy a smartphone, laptop, or tablet.

The succeeding level is material access. This level includes the ability to physically access technology. It takes into account things like having a good internet connection, access to devices like computers or cellphones, and where these resources are located. Physical access is necessary, but it does not ensure effective use (Van Dijk, 2006). Van Dijk (2006) contends that physical access to technology is an important step following motivation, but it does not complete the access story. For example, a person may have the interest and willingness to use technology, and as a result of this desire and willingness, they may acquire a digital gadget, moreover have an internet connection. However, this does not imply that the individual has the necessary skills to operate various digital technologies. Therefore, the third level namely, skills access, argues that once people

have physical access to technology, they need the skills to operate and use it efficiently. While the discussion over digital technology skills will be further explored later under the concept of digital literacy, it is crucial to note that, according to Van Dijk (2006), it extends beyond just understanding how to turn on a device or connect to the internet. It assesses basic operating abilities, such as a person's ability to open a laptop, use specific software, install specific apps, and so on. It also involves formal information skills, such as the ability to traverse hyperlinks and recognise various sorts of online content. It also requires strong information abilities, such as the ability to pick and evaluate information from a range of digital sources (Van Dijk, 2006).

These abilities are required in order to efficiently use digital technologies. Thus, lacking these skills or having them with certain limitations impairs a person's ability to find the information they require and protect themselves from misleading information and harmful links (Van Dijk, 2006). The fourth and final level is usage and is concerned with real technology use, which can be determined by the frequency, length, and type of online activities carried out. This level represents how people use technology in their daily lives and is impacted by their previous degrees of access (Van Dijk, 2006). Van Dijk (2006) contends that the four levels listed above are interrelated and contribute to how effectively people use digital technologies. For example, a person with higher levels of motivation is more inclined to seek out and interact with technology, even if they confront access or competence limitations. Those with poor motivation, on the other hand, may not recognise the usefulness of technology or be hesitant to learn how to use it, even if they have the required resources. Furthermore, while material access is required, it is not a sufficient requirement for using technology. A person must also have the motivation and abilities to efficiently use existing technology. Thus, Van Dijk (2006) contends that all four degrees or levels of access are intricately intertwined in defining how well people use technology.

In summary, the cited early research on the digital divide shows that the concept is multifaceted and changes with time. It looks at several forms of societal differences. Such observations, as well as many other aspects such as education, gender barriers, ethnicity, and socioeconomic class, motivated Warschaeur's (2003) desire to reevaluate the concept of the digital divide. As a result, the following subsections will briefly examine how race/ethnicity, age, level of education, gender, and economic background influence how successfully and efficiently people access and use digital technology across the world before moving onto discuss the issue in South Africa.

2.2.2 Race/Ethnicity and the Digital Divide

Hoffman and Novak (1998), who are widely considered as pioneers in exploring the digital divide, identified a significant link between race and access to technology, notably the internet. They found that race was a major predictor of internet access and use throughout the early phases of mainstream adoption. Though their research findings were centered on the American context, they concluded that initiatives that particularly address racial inequities in worldwide digital access are required to promote equitable participation in the coming digital society (Hoffman and Novak, 1998). Similarly, five years after this study, Warschauer (2003) identified a link between race/ethnicity and internet use in America.

In accordance with Huawei's (2024) global digitalization index (GDI), which compares a nation's gross domestic product (GDP) to its GDI, which measures its level of digital development. In terms of ICT maturity, digital infrastructure, and economic development, Europe, North America, and Asia rank highest. In light of these findings, the following discussion will alternately examine two North American nations, the United States of America and Canada, the European region, the United Kingdom, and two Asian nations, China and Singapore, in order to provide a broad overview of the relationship between race (as well as other socio-economic factors that will be covered later in this chapter) and the digital divide.

2.2.2.1 Race/Ethnicity and the Digital Divide in North America – The Case of the USA and Canada

For years, race and ethnicity have had a substantial impact on the digital divide in the United States, exposing ongoing gaps in internet access and technology usage across racial groups. This disparity reflects not just economic inequities, but also societal restrictions that negatively impact people of colour. However, the situation is changing, owing to factors such as rising popularity of smartphones and targeted efforts to close the gap (Tsetsi and Rains, 2017). Prior to the evolvement, Warschauer (2003) brought to the forefront the intersection of income, education and other socio-economic factors along with race and ethnicity in explaining the variation of internet access among racial groups. Black people in America, for example, are not only low-income earners (usually working blue-collar jobs), they are unlikely to have a higher education degree. In addition, they are not friends with people who are online (people who could potentially help them access the

internet), and they also live in areas where internet connectivity is poor and infrastructure is poorly maintained to facilitate access to the internet (Warschauer, 2003).

These findings are challenged in a subsequent study by Fairlie (2017) on the relationship between race and internet use in the United States of America. Fairlie (2017) found that racial inequalities in smartphone use are minimal. In the 80% of Americans who own and use telephones, 53 to 57% own smartphones, which are typically used to surf the internet, send emails, and send information through social networking sites like Facebook, Instagram, and Twitter (now known as X) (Fairlie, 2017). Of that same category, 40% of African and Latino Americans own and use cellphones. White and Asian Americans had slightly higher smartphone ownership and usage rates than African Americans and Latinos, at 45% (Fairlie, 2017). Similarly, a recent study by Kim (2024) found that African American communities appear to be on the wrong side of the digital divide, with around 40% of Black American households, as opposed to 28% of White American households, not possessing reliably fast, fixed broadband. According to Choi et al. (2022), given that the 21st century promotes internet use as one of the means of achieving both academic and economic success, it is depressing to see that there is still a racial digital divide in the USA. This study so examines the intersection of income and race/ethnicity and its impact on the digital divide in the United States of America (Choi et al., 2022).

Choi et al. (2022) contend that cost is a factor influencing the racial digital divide. Furthermore, Choi et al. (2022) contend that internet prices in USA are among the highest in the world. Therefore, due to the burden of institutional racism on African American families in American society, they earn half as much as their white counterparts. In straightforward terms, home internet is simply too expensive for the majority of working-class African American families (Choi et al., 2022). Importantly, the so-called racial digital divide in the United States cannot be attributed solely to affordability or price, as various other factors contribute to it. According to De Clercq et al. (2023), another factor is that Internet Service Providers (ISP) typically fail to invest digital infrastructures in largely African American regions, anticipating lesser profitability than wealthy places. This method results in poor digital infrastructure and poorer internet connections in disadvantaged neighborhoods, despite charging them comparable prices to those in rich areas (De Clercq et al., 2023).

Conley and Whitacre (2020), added that another key factor is geographic location. This is because cities often have better access to high-speed internet than rural areas. However, in metropolitan areas, African American households are significantly more likely than white households to lack broadband access. Digital access and adoption rates among various racial groups are significantly influenced by cultural attitudes and experiences with technology use (Conley and Whitacre, 2020). According to a recent study by Espín and Rojas (2024), the racial digital divide in the US has decreased in some areas, but persistent disparities still exist. By 2021, smartphone ownership had become virtually equal across racial groupings, with Black, Hispanic, and White Americans accounting for approximately 85% of the total. However, home broadband adoption remained uneven, with Black and Hispanic households having lower rates of home internet access than White households. Moreover, affordability remains a concern. Another significant barrier is the cost of broadband connection, which disproportionately affects low-income households, which frequently include racial and ethnic minorities, particularly Black and Hispanic communities in the United States (Wang et al., 2024).

According to Gelle-Warnick's research (2024), 84% of Asian adults and 83% of White adults have home broadband, compared to 75% of Hispanic adults and 68% of black adults. Despite the fact that the gap in accessing home broadband is less than 20% overall, and Hispanics and Blacks have both exceeded 50%, it is important to recognise that the lack of access, even if it's just for a small fraction of the Hispanic and Black communities, can cause significant disadvantages and worsen inequalities already in place, making further exploration and acknowledgement of the racial digital divide necessary to understand how different individuals can benefit from the internet differently based on their race and ethnicity (Gelle-Warnick, 2024). For example, a person with home internet may enjoy utilising social media, applying for jobs online, and contacting online health services from the comfort of their own home, whereas a person without home broadband may wish to access the same services online but be unable to do so owing to a lack of access.

Similar to the social and economic marginalisation of Black [African] people that contributes to the digital gap in the United States, the digital divide in Canada is a complicated issue influenced by a variety of factors, including race and ethnicity. According to studies, Indigenous individuals, Black Canadians, and other racialised groups have lower rates of access to high-speed internet than

white Canadians. According to Masoodi et al. (2021), the racial digital divide in Canada is an intersection between race/ethinicty, income inequality, geographic location, and institutional discrimination, rather than merely race/ethnicity. One year later, a research by Koch (2022) supports the argument by advocating that racial and ethnic minority groups, including South Asian, Chinese, Black, Filipino Arab, in Canada usually have disproportionately low incomes, which has a direct impact on their capacity to buy internet access, gadgets, and digital literacy courses. Koch (2022) adds that geographic location also plays a role, as Indigenous groups, particularly those in isolated and rural areas, face considerable barriers to getting dependable and affordable internet infrastructure (Koch, 2022).

Overall, race and ethnicity have a substantial impact on how people access and use digital technology in the United States and Canada. The inequalities in how particular racial and ethnic groups use and access digital technologies result in a digital divide. These gaps are influenced by economic inequities, educational differences, geographic disparities, and unequal allocation of infrastructure support across racial and ethnic groups. Similar to these findings, research reveals that race and ethnicity influence how people access and use digital technologies in the UK, however the patterns and contributing factors differ from those in North America. As a result, the subsequent sub-section will investigate the relationship between race/ethnicity and the digital divide in the United Kingdom.

2.2.2.2 Race/Ethnicity and the Digital Divide in Europe - The Case of The United Kingdom

Similar to the social and economic exclusion of Black [African] people in the United Kingdom (UK), the introduction of digital technology exacerbates these already-existing disparities (Platt, and Warwick, 2020). According to Platt and Warwick (2020), Africans are more likely to live in places with limited internet connectivity and less access to technology than other populations. In the United Kingdom, over 30% of African homes lack home internet connectivity, compared to 18% of white households (Platt and Warwick, 2020). According to Ragnedda and Ruiu (2021) individuals from specific Black, Asian, and minority ethnic (BAME) groups in the UK are more likely to face digital exclusion. This implies that individuals may have limited access to dependable internet, digital devices, and the requisite digital skills. Moreover, many minority ethnic groups

have lower median household incomes, which has a direct impact on their digital affordability (Ragnedda and Ruju, 2021).

Serafino (2019) adds that despite the fact that the internet penetration in the United Kingdom has increased, racial and ethnic disparities in the quality, speed, and meaningful use of digital technology remain, raising serious concerns for Indigenous peoples and low-income visible minority communities. Similar to Gelle-Warnick's (2024) findings on the intersection of race/ethnicity and age in the United States, Serafino (2019) discovered that elderly people from ethnic minority backgrounds in the United Kingdom frequently face exacerbated limitations due to language, socioeconomic status, and age-related digital challenges when compared to younger people. Similar to North American research, the racial and ethnic digital gap in the United Kingdom is determined not just by race and ethnicity, but also by socioeconomic features, geographic location, and infrastructure, which are typically mediated by people's racial and ethnic categorisation (Platt and Warwick, 2020). The following sub-section will investigate the relationship between race/ethnicity and the digital divide in the China and Singapore.

2.2.2.3 Race/Ethnicity and the Digital Divide in Asia - The Case of China and Singapore

According to Teo et al. (2021) race and ethnicity have an impact on the digital divide in both China and Singapore, but in ways that are unique to their demographic characteristics, system of government, and historical contexts. While China (and Singapore) rank among the top ten countries in terms of internet access and infrastructure, there are still significant differences in how different people access and use digital technologies (Teo et al., 2021). In the context of China, the digital divide is often related with geological differences, generational divisions, and social class rather than just race or ethnicity. This is arguably due to China's vastness and various ethnic makeup, which implies that the digital divide frequently connects with geographic location, which then overlaps with ethnicity (Wang et al., 2021). Many ethnic minority groups reside within rural and western China, where digital infrastructure is frequently less developed than in urban, eastern areas where the Han Chinese live. This results in limited access to broadband internet and digital devices. Another concern is that internet content and services are primarily in Mandarin, making it difficult for minority language speakers (who speak Uyghur, Tibetan, etc.) with poor Mandarin

competence to access them. This means that the 10% of the population that speaks, reads, and writes minority languages, as reported by Ye (2025) may have a more difficult time finding relevant content because search algorithms are optimised for Mandarin content, therefore limiting their motivation and desire to participate in digital communities (Ye, 2025).

Class is another factor that influences how various ethnic groups afford to buy and access digital devices. According to Teo et al. (2022), some ethnic minority populations have greater poverty rates, which limits their capacity to afford quality internet access and sufficient digital devices. There is also the issue of educational disparities, with schools in minority-dominated areas frequently having less technology infrastructure and fewer digital learning materials. Xiang and Stillwell (2023) add that schools in urban regions typically have much better facilities, resources, and instructor quality. This difference contributes to unequal educational opportunities and promotes urban-rural inequalities, which often harm the minority ethnic group (Xiang and Stillwell, 2023). Singapore's population is mostly constituted of Chinese, Malay, and Indian communities. This country has the best overall digital connectivity and infrastructure in the world (Erh, 2023). While there are few or no data on the relationship between race/ethnicity and the digital divide, socioeconomic and age-related factors influence how different people access and use digital technologies (Ei et al., 2021).

Overall, findings from the United States, Canada, the United Kingdom, and China all attest to a connection between race and other socioeconomic characteristics. These intersectional findings demonstrate how racial income and class divides have a direct impact on device and internet connectivity affordability. They also emphasise how level and quality of education varies by race/ethnicity and is substantially correlated with digital literacy (Choi et al., 2022). They also highlight how geographical location can influence digital access, namely how racial and ethnic minorities are frequently clustered in places with less digital infrastructure, placing them at a disadvantage when compared to those living in cities (Wang et al., 2021), (Koch, 2022), (De Clercq et al., 2023). Perhaps the two criteria that the literature overlooked were age, gender, and the digital divide. Thus, in an attempt to provide an almost comprehensive understanding of the digital divide, the following subsections will briefly discuss the relationship between the digital divide and age, education, economic class, gender, and geographic location.

2.2.3 Age and the Digital Divide

According to a study on the relationship between age and the digital divide by Lukaszewski et al. (2018), age has an impact on both the digital divide and the rate of internet usage. Furthermore, since the introduction of digital technology, there has been a steady evolution, thus it is critical to investigate how different age groups adapt to these changes at different rates. Studying this link enables researchers to better understand the unique requirements and challenges that each generation encounters in the digital domain (Kim et al., 2024). Similar to the examination on race and ethnicity, the following sub-sections will examine the relationship between age and the digital divide in North America, the United Kingdom, and Asia.

2.2.3.1 Age and the Digital Divide in North America- The Case of The USA and Canada

When Smith (2014) investigated the age-related trends that influence digital and internet use in the United States, he discovered that Americans 65 and older have consistently lower rates of internet use and device ownership than younger cohorts. However, while American adults have generally been slower to accept technology than their younger counterparts, their immersion in the digital world is deepening. Harris et al. (2022) add that elderly Americans typically adopt digital technologies more slowly than younger generations for a variety of reasons, including a lack of early exposure, physical limitations, and technology fear. In 2014, six out of ten seniors (65 and older) went online, with slightly less than half adopting broadband. According to a Faverio (2022) study, 99% of adults aged 18 to 29 indicated they used the internet, compared to 96% of those aged 50 to 64, and 75% of those aged 65 and above. The findings of Faverio (2022) support those of Smith (2014) in that American adults' access and use the internet at a slower rate than younger cohorts. Despite the fact that the gap between older and younger counterparts has narrowed in recent years (Faverio, 2022).

In an attempt to understand the connection between age and internet use, Yoon et al. (2021) explained that the upward trend arguing that the older a person is less likely to use the internet, own a digital divide, or have an internet connection, does not apply to everyone, but rather to those of a specific gender, racial/ethnic minority background, or educational level. Instead of simply

assuming that the older a person gets, the less likely they are to use the internet, other demographic factors such as race/ethnicity, class, and educational level should be carefully examined to see how these influence how certain age groups are motivated to use the internet, can afford good devices and broadband, and navigate the complex digital world (Yoon et al., 2021). Overall, age digital divide in USA has narrowed in recent years, with seniors using the internet and digital technologies in good numbers.

In Canadian context, Koch (2022) contends that as people get older, their internet access, digital knowledge, and participation in online activities decline. This creates a digital divide, with older Canadians being less likely to profit from the internet's various social, economic, and health-related benefits. He goes on to say that around 68% of Canadians aged 65 and older accessed the internet, compared to 97% of those aged 15 to 64 (Koch, 2022). Revnic (2024) adds that internet use among the senior population declines with age. For instance, people aged 65-69 are more likely to use it than those aged 75 and older. Similar to findings by Yoon et al. (2021), Revnic (2024) identifies a link between age and other socioeconomic characteristics in Canada's digital divide. He argues that lower-income seniors are less likely to have internet access and devices due to financial constraints. Furthermore, the cost of gadgets and monthly internet access can be a considerable barrier for those on fixed incomes. A further challenge is geographical location and infrastructure, as poor internet connectivity in rural and remote areas disproportionately affects the senior population (Koch, 2022).

2.2.3.2 Age and the Digital Divide in Europe- The Case of The United Kingdom

In a UK study by *The Office of National Statistics* (2020), it was reported that nearly all adults in the UK between the ages of 16 and 44 (99%) had recently used the internet, compared to 54% of adults 75 and older. While the percentage of adults aged 16 to 44 who use the internet has not changed much in recent years, the percentage of those 75 and older who use the internet recently has almost quadrupled since 2013, rising from 29% in 2013 to 54% in 2020 (*The Office of National Statistics*, 2020). In 2022 Allmann, argued that the common age-related issue in the UK is that the digital skills gap widens with increasing age, with the most pronounced differences in transactional skills and content creation. According to Allmann (2022) this is because a portion of older adults

lack the fundamental digital skills needed to navigate the internet safely and effectively. This includes basic tasks like operating devices and using online applications (Allmann, 2022). While the pandemic has increased internet adoption among previously excluded older individuals, with around 20% of previously offline seniors going online for the first-time during lockdowns, there still exist a cohort of vulnerable elderly people that continue to be digitally excluded, thereby widening the gap within the older population (Allmann, 2022).

2.2.3.3 Age and the Digital Divide in Asia- The Case of China and Singapore

According to Ma et al. (2023) when assessing the age-related digital divide in China and Singapore, it is critical to understand that, while both countries are technologically sophisticated, they face distinct obstacles. China's enormous population and geographical disparities have a big impact on the age digital divide. Simply put, elderly individuals in rural settings frequently confront more challenges than those in urban areas (Ma et al., 2023). Liu et al. (2021) add that there is a broad digital divide in China between the elderly living in cities and those living in rural areas. Urban elderly people appear to have greater access to digital tools, with higher smartphone and internet usage rates, especially in first-class cities such as Shenzhen, Beijing and Shanghai. In contrast, rural old people frequently face significant challenges, such as poor infrastructure, lower wages, and less possibilities for digital literacy training (Ye and Yang, 2020). Rhen and Zhu (2024) further add that socioeconomic differences contribute to the disparity rather than just looking at geographical location solely. According to these researchers, richer, urbanised elderly people have greater access to digital technologies than those living in rural or less affluent locations.

Thus, this disparity reflects greater differences in education and money (Rhen and Zhu, 2024). In Singapore, the disparity is considered to also be related to generations rather than just age, because younger generations, notably Generation Z and Millennials, are seen to be digitally engaged, spending more than 400 days a year on digital platforms. In comparison, Baby Boomers spend only 235 days each year online, demonstrating a significant discrepancy in digital proficiency (Tadai and Tan, 2023). Around 58% of Singaporeans aged 75 and up do not use the internet. Furthermore, about 30% of those aged 60 to 74 are unconnected. Even among seniors who use digital technology, many factors limit their usage to basic services like messaging (Perdana and

Mokhtar, 2022). In all of the nations studied, elderly adults were found to have lower rates of digital technology uptake and usage than younger people. The positive aspect is that the gap has narrowed dramatically over time. However, considerable gaps continue among older age groups as a result of socioeconomic position, education, and geographical location, as seen in China, where there is a significant digital divide between elderly individuals living in rural and urban locations.

Klimova et al.'s 2021 study on the factors influencing senior generations' internet use well captures the age digital divide. Similar to later studies by Allmann (2022), Ma et al. (2023), and Rhen and Zhu (2024), Klimova et al. (2021) emphasise that, in addition to age, older people's internet usage can be limited by factors such as a lack of education, gender differences, low income, poor cognitive and physiological capabilities, living alone/with someone, or rural/urban life. For example, elderly people have greater levels of computer anxiety, which may limit their ability to learn and accept new technology, whereas individuals with limited education may lack the necessary skills to effectively traverse modern tools (Klimova et al., 2021). As a result, the following sub-section will investigate the link between the digital divide and education.

2.2.4 Education and The Digital Divide

Apuke and Iyendo (2018) explain that educational background has a substantial impact on internet use, influencing access, frequency, and motivation. Individuals with lower educational levels would have lesser ICT access, poorer levels of ICT abilities, and commonly utilise technology, particularly the internet, in less advantageous ways (Van Deursen and Van Dijk, 2015a). Estacio et al. (2019) argue that higher educational qualifications result in a greater likelihood of internet adoption. Correspondingly, in Dawson's (2021) research, 71% of those with a college degree said the internet was necessary, compared to 45% of those with a high school diploma or less. While the relationship between education and the digital divide is complex, it can be concluded that it has an impact on individuals' digital literacy skills, access, and use. Similar to the examination on race/ethnicity and age, the following sub-sections will examine the relationship between education and the digital divide in North America, the United Kingdom, and Asia.

2.2.4.1 Education and the Digital Divide in North America – The Case of The USA and Canada

According to Raihan et al. (2024), similar to the relationship between race/ethnicity and the digital divide, the relationship between education and the digital divide in the United States stems from systemic injustices in technology, digital literacy, and institutional support that disproportionately affect marginalised communities and reinforce socioeconomic inequalities. Dawson (2021) found a correlation between educational attainment and level of access, utilisation, and motivation to use the internet and other digital technologies. Specifically, it was discovered that the 30% of Americans who feel they are not confident using computers, smartphones, or other associated electronic devices were the highest among those with a high school diploma or less, when compared to those with a college degree (Dawson, 2021). In a study by McHaney (2023), it was reported that having higher education frequently includes more digital exposure, which may result in familiarity, early introduction to newer features, and overall more time spent on the internet, which may nurture skills and motivation to adopt digital technology. McHaney (2023) adds that many good-paying occupations require a higher level of education.

As a result, educated people with higher incomes are more likely to be able to purchase internet services and gadgets than others who are less educated and may be unemployed or earning low wages. Li and Li (2021) emphasised that the education divide goes beyond access and affordability as it also includes the gap between those who have the essential abilities to effectively use digital technology and those who do not, commonly referred to as digital literacy. They added that individuals with greater levels of education often have more possibilities to develop these digital abilities through schooling, additional study, or type of employment than those with lower educational attainments (Li and Li, 2021). In summary, in USA context, the education levels of individuals, along with demographic factors such as income and geographic location, can affect their ability to access digital technologies. These factors also influence individuals' exposure and opportunities to use these technologies, which in turn affects their skill development, usage patterns, and motivation (McHaney, 2023).

In Canada, as in the USA, higher levels of educational attainment are strongly associated with better access to and more effective use of digital technologies. Although access to these

technologies may not be as pronounced as in the USA, there is a clear correlation between education level and digital proficiency (Ahmmed et al., 2022). Higher education graduates typically exhibit greater comfort with complex digital tasks, whereas individuals with lower educational attainment often possess more limited problem-solving abilities in digital contexts. Interestingly, *Survey of Adult Skills* (2023) highlights an intersection between age and education, noting that the skills gap is particularly pronounced among older Canadians with lower levels of education. Another similarity is that educational achievement is highly related to socioeconomic status and income in Canada. Higher education frequently results in improved job prospects and higher earnings, allowing people and households to invest more easily in digital gadgets, internet services, and adequate data plans (Koch, 2022). Despite Canada exhibiting somewhat narrower gaps, both the USA and Canada confront significant challenges in achieving equitable digital participation across all educational levels.

2.2.4.2 Education and the Digital Divide in Europe- The Case of The United Kingdom

In the United Kingdom, a staggering 98% of people with tertiary education reported accessing the internet on a regular basis in 2020. This proportion was 93% among those with upper secondary or post-secondary non-tertiary education (Prescott, 2021). In sharp contrast, only 36% of people with no formal educational qualifications accessed the internet, indicating a considerable disparity in access and usage compared to their more educated peers (Prescott, 2021). Data also shows a link between educational attainment and access to internet services in homes. Individuals with higher educational qualifications, such as bachelor's or master's degrees, are markedly more likely to have access to high-speed broadband connections and a selection of digital devices, including laptops and tablets (Watermeyer et al., 2021). Conversely, those with lower or no formal qualifications often experience limited access to these vital resources, which can hinder their ability to engage completely in today's digital landscape. This is because greater educational attainment usually leads to a higher salary, making home internet services more affordable. Overall, this disparity highlights the essential role that education (Watermeyer et al., 2021). Again, the connection is not just about education; it also overlaps with income levels, which are often influenced by an individual's level of education.

2.2.4.3 Education and the Digital Divide in Asia- The Case of China and Singapore

While China has made tremendous progress in digital transformation, educational attainment still influences the divide as it has a significant impact on an individual's access to and interaction with digital technology (Luo et al., 2022). According to Wang and Liu (2021), while on one hand, almost all college graduates in China have internet connection (more than 95%). On the other hand, high school graduates had lower connectedness rates, ranging between 70 and 80 percent. Those with only a primary school or less have significantly lower connectedness, ranging from 40 to 50 percent (Wang and Liu, 2021). While it is apparent that educational and economic disparities are interconnected, research in China shows that geographic location has a significant impact on the digital divide. Specifically, urban areas with higher average educational levels have much higher internet penetration rates than rural regions, where educational attainment frequently lags behind (Qiu et al., 2023). Chen et al. (2024) reported a correlation between education and digital skills by arguing that higher education offers people with the necessary skills and potential to develop their digital literacy, such as internet navigation, the use of digital tools, and the ability to distinguish trustworthy information. In China, there is a significant digital skills gap, with persons with lower educational attainment frequently lacking the abilities required for the new digital economy (Chen et al., 2024).

According to Ng et al. (2022), while access is broad in Singapore, the divide is increasingly focused on digital knowledge and skills. Similar to the US, Canada, the UK, and China, Individuals in Singapore with higher educational attainment tend to have more advanced digital abilities, allowing them to use technology for a broader range of activities such as job, study, and accessing internet resources (Ng et al., 2022). While the access divide is less pronounced, some socioeconomic differences remain. Because educational attainment frequently correlates with income, indirectly influencing the ability to fully participate in the digital environment, lower-income households with lower educational attainment in Singapore may still face difficulties in affording the latest devices or consistent high-speed internet, despite government subsidies aimed at addressing this (Ng et al., 2022). Overall, while there are both distinctive and similar features across all nations regarding how educational attainment influences the digital divide, it is visible that in as much

as these are nations where there is high internet access, penetration and skills, still educational attainment remains a powerful predictor of meaningful digital participation, though the strength of this relationship varies based on infrastructure investment, affordability of sufficient digital devices and subscriptions and overall broader socioeconomic factors.

Specifically, when gender is considered, the influence of educational attainment on the digital divide becomes much more complicated. In many areas, discrepancies in access to and completion of higher education between men and women contribute to the gender gap in digital skills. For example, evidence suggests that among those with only a primary education, the digital literacy gap between men and women is substantially higher than that of university graduates (Long et al., 2023). Therefore, the preceding sub-sections will look at the relationship between gender and the digital divide.

2.2.5 Gender and the Digital Divide

In a study by Helsper (2021) on the digital disconnect and inequalities, it was highlighted that similar to the racial, educational, and age digital divides, there are inequalities in how people of different genders access and use digital technologies, which are complicated by a variety of factors such as economic disparities, educational opportunities, social norms, and infrastructural challenges. While this divide is defined by global gender inequities, every nation endures its own divide due to socioeconomic and cultural variances (Ritzhaupt et al., 2020). Therefore, the following sub-sections will examine the relationship between age and the digital divide in North America, the United Kingdom, and Asia.

2.2.5.1 Gender and the Digital Divide in North America – The Case of The USA and Canada

According to Dixon et al. (2014), men have historically been more likely than women to take advantage of the internet, particularly in its early years. Previous studies found that the intention to using the internet varied by gender. Men were more engaged in areas such as checking news, sports scores, and downloading music. In contrast, women excelled in finding health-related material and using the internet for religious purposes (Fallows, 2005). However, by the early

2000s, the gender gap in access had narrowed significantly, with virtually equal proportions of men and women online (Dixon et al., 2014). In support of these claims, it was found that by 2023, 96% of women reported using the internet, while 93% of men did (*Pew Research Center*, 2024). While women have outperformed men in terms of internet access, they appear to be digitally disadvantaged when it comes to consumption patterns, digital abilities, and representation in the tech industry (Helsper, 2021). Rückert et al. (2020) argue that these disparities are however influenced by race/ethnicity, geographical location, and ability differences. Specifically, Black and Hispanic women face more digital barriers than white women; rural women have fewer options than urban women; older women have lower digital participation rates than younger women; and women with disabilities face additional barriers to digital inclusion.

Thus, as with prior discussions about the digital divide in the United States, gender, race, age and regional disparities overlap in the context of digital access and use. In Canadian context, while the gender gap has narrowed dramatically, as it has in the United States, the cost of internet services and devices continues to be a barrier for some individuals and households, in this case, women are typically on the receiving end of the disparity (Fuller and Qian, 2021). Additionally, women are particularly affected by urban–rural divides. It was also reported that Northern communities experience unique issues with internet infrastructure, therefore women living there are more excluded from some benefits of digital technologies (Singh and Chobotaru, 2022). So, while, both the USA and Canada, have completely closed the access digital divide between men and women, there are still disparities in how women from certain geographic location, racial/ethnical groups experience and use the internet.

2.2.5.2 Gender and the Digital Divide in Europe- The Case of The United Kingdom

According to Petrosyan (2023), 51% of internet users in the United Kingdom are women, while 49% were men. In the UK, as in the United States and Canada, a large digital divide exists in critical areas such as digital skills and representation in the technology sector. The gap is most pronounced in digital abilities (Vasilescu et al., 2020). Data suggest that there is a growing discrepancy in necessary abilities for work, with men achieving more while women's performance has remained mostly static. Men are more likely than women to claim being able to execute all

digital job activities (Vasilescu et al., 2020). According to Islam et al. (2024), in the UK there is an intersection of race/ethnicity, geographic location, age, and gender that affects the digital experience. Women who face digital barriers usually belong to specific groups: BAME (Black, Asian, and Minority Ethnic), older women aged 65 and up, and rural women living in certain districts of Scotland and Wales. These groups may face difficulties due to insufficient digital infrastructure (Islam et al., 2024). Thus, while there is widespread access regardless of gender, there are still underlying barriers that limit how specific women experience the digital world, as influenced by other socioeconomic characteristics (Vasilescu et al., 2020), (Islam et al., 2024).

2.2.5.3 Gender and the Digital Divide in Asia- The Case of China and Singapore

China has made notable strides in reducing the digital gap, particularly in addressing the gender divide in internet access, especially in urban areas (Mi et al., 2024). However, a significant drawback is that rural women, particularly those with lower education levels, are still underrepresented online. This situation underscores a continuing digital divide that is influenced more by geography and education than by gender alone (Mi et al., 2024). On the one hand, urban women are becoming more engaged and influential online, yet rural women continue to confront challenges such as poor infrastructure, affordability, and technical skills. On the other hand, older women have significantly lower rates of digital participation than older men (Zhu et al., 2022). Similarly, while most Singaporeans have access to digital technologies, Singaporean women from low-income families face challenges to device ownership and digital abilities. Furthermore, senior women participate in digital activities at far lower rates than other demographic groups. Evidently, access to and usage of digital technologies is not only influenced one factor, but is by a combination of gender and various socio-economic factors in the sampled nations. Moreover, it is important to recognise that an individual's level of access, skills, and motivation to use these technologies is affected not only by gender but also by other socio-economic elements.

This study of the digital divide thus far highlights that, while race/ethnicity, age, and gender can all pose unique hurdles to accessing and utilising digital technologies, economic class frequently serves as a fundamental layer, defining the likelihood of overcoming those other barriers. It has an impact on access to affordable devices, dependable internet, and the resources required to achieve

digital literacy. As thus, the final sub-sections in the worldwide examination of the digital divide will look at the relationship between economic class and the digital divide in the United States, Canada, the United Kingdom, China, and Singapore.

2.2.6 Economic Class and The Digital Divide

Economic class has a significant impact on the digital divide. This is because in most cases, individuals from higher-income households are far more likely to have access to broadband internet, cellphones, computers, and other digital gadgets (Hargittai, 2022). They also benefit from improved educational possibilities and are frequently located in places with high-quality internet infrastructure. Lower-income people, on the other hand, frequently struggle to afford these technologies or the continuous expenses of internet subscription, limiting their ability to fully engage in the digital world and accessing opportunities that their richer counterparts have (Hargittai, 2022). The sub-sections that follow will delve deeper into this topic by focusing on the sampled nations.

2.2.6.1 Economic Class and the Digital Divide in North America – The Case of The USA and Canada

In USA context, while smartphone ownership and usage are common across income levels, families earning $100,000 or more per year are much more likely to own more than one smartphone than those earning less than $30,000 (98% vs. 79%) (Gelles-Watnick, 2024). This disparity illustrates a continuing digital divide, which disproportionately affects lower-income populations. Furthermore, there are significant disparities in broadband subscription rates among low- and high-income Americans. Gelles-Watnick (2024) adds that people with higher salaries are more likely to report being online than those with lower incomes. While affordability is generally the most evident aspect in the relationship between economic class and the digital divide, there is still a complex impact on digital inclusion that can persist long after cost barriers are addressed (Reddick et al., 2020). According to Kelton et al. (2022), in most circumstances, digital infrastructure development prioritises profitable (usually wealthy) places. So, even when people

from low-income communities can afford devices and subscriptions, there is often a shortage of adequate digital infrastructure.

In addition, as previously noted, economic class intersects with other demographic characteristics such as race/ethnicity, gender, age, and education in the United States (Greiman et al., 2025). While economic class is a core element impacting the digital divide, several overlapping factors shape and intensify its influence. For example, a low-income elderly woman from a racial minority group living in a rural location may face more challenges to digital inclusion than a high-income young white male in an urban setting. Similarly, while Canada has made significant progress in reducing the digital divide, lower-income households are less likely to own a diverse range of gadgets that allow for successful involvement in the digital world (Masoodi et al., 2021). Furthermore, individuals living in rural areas sometimes have fewer options for internet providers, resulting in higher fees for slower or less dependable services, which disproportionately affect lower-income residents (Masoodi et al., 2021). Additionally, despite having access, those from lower socioeconomic backgrounds may have had fewer opportunities to gain the digital literacy and skills required to use ICTs effectively (Neisary, 2024).

2.2.6.2 Economic Class and the Digital Divide in Europe- The Case of The United Kingdom

According to a United Kingdom study, people earning less than £12,000 per year use the internet substantially less than those with greater incomes. Furthermore, 55% of those offline earn less than £20,000 per year, demonstrating a substantial relationship between economic levels and internet involvement (Petrosyan, 2024). In addition, Internet users in the United Kingdom can be classified into several groups based on their level of activity. Individuals from higher socioeconomic classes are more likely to engage in a broader range of online activities, such as job searching, voting, studying, and leisure, whereas those from lower classes are more likely to fall into the 'narrow user' category, engaging in fewer types of activities, such as using social media (Petrosyan, 2024). Similar to Greiman et al.'s (2025) argument about the intersectionality of economic class and other demographic factors in shaping the digital divide in the United States, Coleman (2021) contends that the combination of economic class and other demographic characteristics significantly amplifies the digital divide in the United Kingdom, resulting in layers of disadvantage. Ethnic

minorities, particularly those in lower socioeconomic groups, may confront a digital divide for a variety of reasons, including language challenges, historical disadvantages that lead to lower income and educational attainment, and even residing in places with weaker infrastructure (Coleman, 2021).

2.2.6.3 Economic Class and the Digital Divide in Asia- The Case of China and Singapore

On one hand, lower-income households in China frequently struggle to afford internet connection, gadgets (such as cellphones and computers), and associated costs (Yao et al., 2021). While internet penetration in China has expanded dramatically, the cost remains a barrier for many in the lower socioeconomic strata. Similar to the United States, Canada, and the United Kingdom, these characteristics are amplified and influenced by their interaction with other demographic factors. Older persons, particularly those from lower socioeconomic backgrounds, confront considerable digital isolation (Yao et al., 2021). They frequently have lesser levels of education and digital literacy, which is compounded by budget issues with gadgets and internet connection. Wang et al. (2022) add that rural areas, which frequently have lower average incomes, suffer from inadequate internet infrastructure, insufficient digital literacy training, and higher service costs in some locations. As a result, additional disadvantage is created for low-income residents in these locations (Yao et al., 2021), (Wang et al., 2022).

On the other hand, in Singapore, just 69% of homes in the lowest 20th percentile have internet connection, as opposed to 87% of all income categories. Furthermore, the number of households using personal computers falls to 58% for those in the bottom 20th percentile, compared to an average of 81% for all households (Ei et al., 2021). Again, there is notable intersection between economic class and other demographic factors like age, geographic location and education as, the digital divide is detected to be particularly pronounced among seniors living in smaller Housing Development Board flats and those with less education, who often have fewer resources and less exposure to technology (Ei et al., 2021). There are ethnic and cultural components to economic class and the digital divide, since income disparities persist among Singapore's ethnic groupings, with Chinese Singaporeans earning more than Malays or Indians (Ng et al., 2023). As a result, the

rate at which different ethnic groups use and access digital technologies is correlated with ethnicity, albeit primarily as a consequence of socioeconomic variables (Ng et al., 2023).

While figures presented by Petrosyan (2025) show that North America, Europe, and Asia are among the continents with the highest worldwide internet adoption, there is no doubt that the digital divide remains a multifaceted challenge even in highly developed digital regions. The literature examined thus far has purposefully chosen the United States of America, Canada, the United Kingdom, China, and Singapore as the five countries to methodologically investigate the digital divide across North America, Europe, and Asia. Furthermore, according to Huawei's (2024) Global Digital Index, which measures countries' digital progress, these countries rank in the top 20 as front runners. Despite these encouraging numbers, they demonstrate that there remain digital inequities in how people access and use digital technologies. The evidence indicates that there are both common patterns and distinctive features among the five countries studied. A key finding is that digital access and usage are influenced by demographic factors such as race, ethnicity, age, gender, education, and economic class, with economic class serving as a fundamental basis. Specifically, across all five nations, age is a universal factor, as seniors consistently face higher rates of digital exclusion (Choi et al., 2022), (De Clercq et al., 2023).

Educational attainment is a strong predictor of the quality of digital inclusion in all contexts. Additionally, income disparities impact digital participation in all countries, although they manifest differently (McHaney, 2023), (Koch, 2022), (Prescott, 2021), (Chen et al., 2024), (Wang and Liu, 2021) and (Ng et al., 2022). Most importantly, there appears to be a rural-urban divide, influencing how individuals in rural and urban areas access and utilise digital resources. While the racial/ethnic digital gap differs per country because each has its own cultural and historical definition of race and ethnicity, there are variances in how racial/ethnic groups access and use digital technologies (Choi et al., 2022), (De Clercq et al., 2023), (Ragnedda and Ruiu, 2021), (Serafino, 2019), (Li and Lou, 2022), (Teo et al., 2022) and (Ei et al., 2021).This disparity is exacerbated by geographic location, socioeconomic status, education, and, in certain circumstances, gender. Gender is the only demographic component that appears to be lessening; nevertheless, when other factors such as geographic location and education are considered, it can be exacerbated (*Pew Research Center*, 2024), (Fuller and Qian, 2021) and (Mi et al., 2024).

Overall, it is evident that race/ethnicity, age, education, and geographic location all intersect in the context of the digital divide.

Building on the notion that socioeconomic issues are a major cause of the global digital divide, it is critical to now turn the attention to South Africa. Given the country's past, it is crucial to investigate how apartheid has shaped and influenced South Africa's digital ecosystem. As a result, the following sub-section will look at apartheid's legacy and how it affected the digital divide in South Africa.

2.3 APARTHEID'S LEGACY AND ITS IMPACT ON THE DIGITAL DIVIDE IN SOUTH AFRICA

According to *The World Bank Group* (2022) South Africa is one of the most unequal countries in the world. These imbalances are also fueling the digital divide. As already discussed, understanding the digital divide is complex, but the complexity is amplified in the context of South Africa; a country plagued by apartheid that left in place systems that geographically and socially distanced people of colour [Black Africans, Indians[1] and Coloureds[2]] from job opportunities, educational opportunities and political opportunities (Blignaut, 2009). Despite these inequalities, South Africa is still one of the most successful countries when it comes to information integration within sub-Saharan Africa due to the wide distribution of mobile phones (Bornman, 2016). It is estimated that there are 45.34 million (out of 60 million) active internet users in South Africa in January 2024. About 26 million of these users use social media, accounting for about 42.8% of the country's entire population (*Statista*, 2024).

Even though these numbers look good when compared to other African countries, they highlight that more than a quarter of the population is still without internet, and more than half do not have social media. According to Dudu Mkhwanazi, CEO of *Project Isizwe*, a non-profit created to bring

[1] The racial category 'Black African' includes individuals from various indigenous ethno-linguistic groups in South Africa, such as isiZulu, isiXhosa, isiNdebele, Tshivenda, Sepedi, Setswana, Sesotho, and SiSwati. Meanwhile, the term 'Indian' refers to South Africans who have ancestry from the Indian subcontinent (Christopher, 2022).

[2] The South African term 'Coloured' is generally used to denote individuals of mixed racial and ethnic heritage or mixed parentage. In broader contexts, this designation often corresponds to 'biracial' or 'multiracial' classifications (Adhikari, 2004).

the internet to South Africans by providing free Wi-Fi for communities of low income, 7.5 million low-income South Africans pay 80 times as much to access the internet as middle- and upper-income citizens, thus exasperating inequality (Mlaba, 2021). Three years later, Mcwabeni (2024) explains how South Africa's current digital inequities should always be examined through the lens of prejudice left by apartheid. Saka (2024) adds that apartheid's systemic discrimination, rooted in race and socioeconomic status, has profoundly affected the nation's infrastructure, education system, and economic disparities. These inequities play a critical role in perpetuating the digital divide that persists today. Specifically, despite 30 years of democracy, achieving digital equity in South Africa appears to be a distant goal if the gaps laid by racial segregation is ignored; thus, for an all-encompassing critique of the digital divide in South Africa, it is important to consider how different social groups in South Africa access and use digital resources as influenced by the legacy of apartheid (Mcwabeni, 2024). To provide a comprehensive examination of the digital divide in South Africa, as highlighted by Mcwabeni (2024) and Saka (2024), the following sub-sections will examine how apartheid's influence on individuals' socioeconomic status, geographic location, and education affects the digital divide in South Africa.

2.3.1 Socioeconomic Inequalities

Similar to the arguments presented in previous sections, where there is an obvious correlation between income and affordability of access to adequate digital technologies, Mcwabeni (2024) argues that in the South African context, the higher a person's income, the greater their access to digital technologies. This inequality indicates that, although some parts of the population can easily afford high-quality internet services, a significant portion is unable to access them due to cost (Munyoka, 2022). These disparities can be linked to the country’s political and socioeconomic conditions prior to 1994, as well as how subsequent policies have placed certain social groups, especially black South Africans, at a disadvantage in terms of digital access (Munyoka, 2022). For starters, the issue of socioeconomic inequality in South Africa is significantly influenced by high unemployment rates, with many individuals either unemployed or earning very low wages (Valodia, 2023). As mentioned earlier, access to digital technologies can be expensive; therefore, existing income disparities directly affect how specific social groups access and utilise these technologies (Dhobha and Madondo, 2024). Secondly, there is the issue of electricity affordability, where a lot of individuals, specifically those, not earning high incomes or those residing in rural areas, not being able to afford electricity, because to them electricity is expensive.

In addition, there is wide spread issue of load shedding. Load shedding refers to the intentional shutdown of parts of the electrical distribution network on a regular basis to prevent system damage and avoid the risk of a nationwide blackout (Walsh et al., 2021). This crisis means that citizens must also have alternative supply for electricity like generators, which are also not that affordable, in order to have stay connected during load shedding (Mcwabeni, 2024). Thirdly, there is a crucial aspect of sustainable connectivity that must not be overlooked. For South Africans to remain connected and effectively use digital technologies, there is a need for consistent revenue rather than one-time purchases or temporary access to digital resources. Unfortunately, in a society where the top 10% earn 65% of the income, the majority of the population are not high earners and are unlikely to have long-term connectivity or access to digital technologies (Dhobha and Madondo, 2024). Overall, socioeconomic inequalities that have historically restricted racial access to well-paying jobs, professional opportunities, business ownership, quality education, and residence in well-developed urban areas continue to significantly influence who can access, afford, and effectively utilise digital technologies in South Africa today. Another important issue explored by Mcwabeni (2024) and Dhobha and Madondo (2024) is the urban-rural-township divide, which is also a product of apartheid's policies concerning housing, and the geographic distribution of different racial groups. This divide has had a lasting impact on the country and most importantly, the existing digital inequalities.

2.3.2 Geographic Location Disparities

According to a study by Fogel (2019) apartheid's racially-motivated geographic planning forcefully relocated Black South Africans into isolated and under-served areas, an arrangement that continues to affect who benefits from the country's resources today. During apartheid, infrastructure development in Black townships and rural regions was systematically underfunded, impacting essential services such as electricity, roads, and telecommunications (Fobosi and Malima, 2025). In contrast, resources were heavily concentrated in urban areas designated for the white minority, leading to improved infrastructure in those regions. Fobosi and Malima (2025) added that even after the abolition of apartheid, the historical lack of investment in previously marginalised communities resulted in a significant infrastructure gap. This viewpoint is consistent with that of Mcwabeni (2024), who stated that digital inequities disproportionately impact rural areas. Furthermore, urban households have higher internet connectivity than their rural and

township counterparts (Mcwabeni, 2024). Even after the country's democratic transition in 1994, South Africa's black majority continues to struggle to catch up with the country's high-income earners. The existing spatial inequalities have had a substantial impact on the implementation of new digital infrastructure (Ramoroka, 2019).

Profit-driven telecommunications firms prioritise locations with higher population densities, better purchasing power, and established infrastructure, primarily urban areas that have historically benefited more (Ramoroka, 2019). In support of this observation, despite only looking at one component of the digital divide, a 2023 *Opensignal* study found that smartphone users in rural areas have a 14% slower average download speeds than those in cities. Furthermore, even with improvements over time, signal availability in South African rural areas is lower than in cities, where it is 91% (*Opensignal,* 2023). Thus, regardless of the government's efforts to bridge the divide, apartheid's infrastructural realities persist in South Africa after 30 years of democracy (Fobosi and Malima, 2025). Sadly, in addition to socioeconomic inequalities and geographic disparities, apartheid's Bantu Education system intentionally limited educational opportunities, further impacting digital literacy issues in South Africa.

2.3.3 Literacy Impact of Bantu Education

According to Khumalo (2022) the Bantu Education Act of 1953 set up a system of education which continues to influence digital inequality in South Africa today. This is because this intentionally inferior educational system discriminated Black South Africans and created fundamental barriers that directly influenced who can access and use digital technology effectively (Khumalo, 2022). Rais (2024) expresses that the inadequate Bantu Education curriculum, as well as a lack of resources and infrastructure, meant that the generation of that period had insufficient learning materials and a near-complete lack of resources such as libraries, laboratories, and, most importantly, any sort of computer or technological equipment. As a result, they were unable to find good paying jobs and could scarcely provide better possibilities for their own children even in the new democracy (Gallo, 2020). The youth of today, the children of post-apartheid parents, generally have better access to digital technologies than their parents did due to the removal of discriminatory laws. However, intergenerational poverty and low literacy skills continue to sustain a cycle of limited internet access, essentially maintaining the digital divide (Rais, 2024). In addition, schools

in rural areas of South Africa face numerous challenges that often exceed those encountered by urban schools. These challenges include unstable electricity, high dropout rates, inadequate classroom infrastructure, a shortage of qualified teachers, and a lack of teaching and learning materials (Pillay, 2021).

Consider two lecturers: one comes from a lineage that has had privileged access to quality education and resources, unaffected by apartheid's structural oppression. The other however, comes from a background influenced by the Bantu Education system, which produced educational disadvantages and was exacerbated by persistent socioeconomic inequities. The former most likely received early exposure to technology, which boosted drive and confidence in its use. In contrast, the latter had limited early access to technology, attended under-resourced schools, and is likely to be less confident in utilising digital tools. Mtshweni (2022) therefore concludes that this significant discrepancy demonstrates how apartheid's historical injustices continue to shape the digital opportunities and abilities of young South Africans today, preserving the digital divide across generations. While the legacy of apartheid has influenced socioeconomic, geographic, and educational disparities, it is vital to emphasise that the digital divide in South Africa is also shaped by other intersecting social categories such as gender and age.

2.3.4 Age and Gender Divide

According to Statista (2023), the age group with the greatest rate of internet access in South Africa is that of individuals aged 25–34, with 27.4% of this population using the internet. In comparison, only about 3.6% of South African senior individuals (aged 60 and up) utilise the internet, demonstrating a significant digital divide between age groups (Gwala and Mawela, 2024). Gwala and Mawela's (2024) study demonstrated that older persons frequently lack key computer abilities, with many failing to execute basic tasks such as filling out online forms. For example, 67.5% of elderly respondents were unable to submit online forms, which are required for accessing services such as government e-services. This is owing to the confluence of historical, economic, and social forces discussed in the preceding sections. The majority of older South African citizens had little or no formal education, and even those who did have formal education were disadvantaged as a result of apartheid policy (Gallo, 2020). Furthermore, they are not well-off and rely heavily on government social subsidies, making it less probable that they can buy suitable digital devices and

data (Buthelezi et al., 2021). Buthelezi et al. (2021) add that many live in rural or township areas with weak digital infrastructure as a result of apartheid. As a result, they are not only concerned with the cost of access, but also with the availability of connectivity resources such as network towers and electricity to keep their digital gadgets operational. (Buthelezi et al, 2021; Gallo, 2020). Thus, for a thorough examination of the age digital divide in South Africa, it is critical to acknowledge the intersectionality of age and other demographic characteristics, such as gender.

According to Shiferaw (2024), the gender digital divide in South Africa, like age, displays significant inequities that overlap with race, class, and geography, resulting in complex patterns of digital exclusion for women and girls. For starters, during apartheid, girls frequently received less technical and mathematics education than boys within the already limited Bantu education system (Rais, 2024). Secondly, rural women have the most severe digital exclusion due to their geographic isolation (Mcwabeni, 2024). The author stresses that women from rural areas are the most affected by a lack of adequate digital infrastructure, as well as the fact that while many men relocate to cities to find work, most women are left behind (Gallo, 2020). Furthermore, there is an age-gender intersection, with most older women (the apartheid generation's immediate descendants) suffering the most obstacles as a result of previous educational, geographic, and hence job-opportunity disparities (Rais, 2024).

Overall, apartheid's discriminatory policies, especially Bantu Education, left lasting educational and economic disadvantages for Black South Africans (Khumalo, 2022). This legacy directly contributes to the digital divide by limiting access to the skills, resources, and infrastructure necessary for digital literacy (Valodia, 2023), (Mcwabeni, 2024), (Dhobha and Madondo, 2023) and (Fobosi and Malima, 2025). As a result, the digital divide in South Africa is largely a reflection of historical racial and socioeconomic inequalities, which obstruct equitable participation in the digital age.

While the literature reviewed thus far has examined the digital divide in relation to physical access, it has yet to consider the skills related divide. Unfortunately, taking care of one significant issue like infrastructure in hopes that the inequalities will disappear is idealistic and only takes care of one part of the problem. Consistent with this argument, Van Dijk and Hacker (2003) argue that there is a misconception that as soon as the material access is solved, the digital divide will be solved because other factors should be regarded as temporary. Similarly, Grover (2021) expressed that

even if everyone in the world was to gain free a computer, laptop, or smartphone, and a subscription, it would not automatically make everyone technologically literate. Correspondingly, Aissaoui (2022) argued that even if every child in the world were given a computer with internet access, the privileged ones would use their social status as an advantage to excel in these new digital environments over the less privileged ones. Therefore, there will forever be a reinforcement of socioeconomic inequalities (Aissaoui, 2022)). What this argument does is further emphasise that even though the issue of material access cannot be ignored, it is imperative that the issue of abilities and skills, also known as digital literacy, should be looked at in greater detail.

2.4 DIGITAL LITERACY

While the term 'literacy' traditionally refers to reading and writing skills, when the word 'digital' is added, it incorporates much, much more. Tinmaz et al. (2022, 6) describe digital literacy as "the ability to use digital technology, communication tools, and networks to access, manage, evaluate, and create information". This involves familiarity with technology, such as computers and cellphones, as well as the capacity to use the internet safely and ethically. In earlier studies, a person who was able to search and comprehend news and weather from the internet was considered digitally literate. Interestingly*, UNESCO* (cited in Chetty et al., 2018: 6) argued that digital literacy can be understood as "a set of basic skills required from working with digital media, information processing and retrieval". According to Warschauer (2003), while literacy is generally described as the capacity to read and write, "new literacy" theorists advocate a broader definition that considers the social settings of literacy practice.

Hence, being literate in this circumstance might be regarded as "having mastery over the processes through which culturally significant information is coded" (de Castell and Luke 1986: 374). In today's world, this would include mastery over our digital environments. Eshet-Alkalai (2004) presents another early comprehensive framework for digital literacy, emphasising that digital literacy encompasses much more than the ability to use and navigate a digital device, and far more than just reading and writing skills; it also encompasses cognitive, motor, sociological, and emotional skills that users must possess in order to function effectively in digital environments. Therefore, Eshet-Alkalai (2004) suggests that digital literacy should be understood in a holistic

manner by assessing a set of five different skills namely: photo-visual literacy; reproduction literacy; branching literacy; information literacy; and socio-economical literacy.

2.4.1 Eshet-Alkalai's Early Definition of Digital Literacy

To begin, Eshet-Alkalai (2004) discusses photo-visual literacy. This literacy can be understood as one's ability to critically understand visual presentations on digital platforms. Considering the visual internet's enormous growth, it is no surprise that one's ability and skills to understand memes, GIFs and other visuals has become very important. Users are constantly required to differentiate between fake and real images, the message beyond those images, and other important information that these visuals may contain (Eshet-Alkalai, 2004).

Secondly, reproduction literacy is referred to as one's ability to innovatively re-use existing information to create a new form of information (Eshet-Alkalai, 2004). For example, during the pandemic, lecturers were tasked with exploiting existing digital information to develop cohesive learning materials to the best of their abilities. Thus, whereas a less skilled lecturer could simply share a PowerPoint presentation with only text, a lecturer with advanced reproduction literacy could create a PowerPoint presentation with not only text but also relevant photographs, short videos, links to relevant articles, and possibly even a link to a forthcoming online lecture. By creating cohesive digital learning information using PowerPoint that includes relevant pieces of digital information such as texts, online links, photographs, and even videos, lecturers can navigate different digital platforms to gather information that effectively conveys new insights or reinforce existing ones from a new perspective.

Thirdly, branching literacy refers to the capacity to navigate nonlinear literature efficiently. Non-linear writings are distinguished by their non-sequential structure, in which information is given in an inconsecutive manner rather than being put out straight and clear (Eshet-Alkalai, 2004). Branching literacy abilities are increasingly acknowledged in educational contexts as vital for efficient digital learning. For example, a research student with advanced branching literacy will be able to explore online publications, archives, and citations to conduct efficient and productive digital research on their topic. This includes skills in searching, filtering, assessing credibility, understanding bias, and distinguishing reliable from unreliable sources. It's particularly crucial in an era of information overload and misinformation.

Fourthly, Eshat-Alkalai (2004) refers to information literacy as the informative and evaluative skills needed to critically read and grasp information, assess its level of credibility, and the ability to differentiate between factual and false information. Taking into account the above definitions and examples, it is evident that the online environment is a place filled with complex information that only a savvy person can generally identify, therefore having this skill is very important (Eshet-Alkalai, 2004). In order to be able to evaluate the data and information presented online, one needs specific experience and skills. In order to learn these skills, individuals must consciously engage with digital information in a critical and analytical way.

Finally, is socio-emotional literacy. According to Eshet-Alkalai (2004), socio-emotional literacy focuses on the sociological and emotional components of internet communication. Socio-emotional literacy examines the sociological and emotional aspects of internet communication. It comprises understanding and managing one's emotions when communicating with others in the digital world, which is crucial given the unique challenges presented by digital interactions. This form of literacy is critical because conversing via the internet necessitates the understanding of emotional expression (Eshet-Alkalai, 2004). For example, in normal educational settings, lecturers can discern how students are feeling based on their instant facial expressions, mannerisms, and, on occasion, verbal tone. However, this may be extremely difficult in online educational contexts. As a result, understanding tone in text, as well as the use of emojis and expressions, is critical for comprehending emotional meanings and discourses in the digital learning environments. Socio-emotional literacy enables individuals to form and maintain polite digital (or internet-based) connections.

In summary, Eshet-Alkalai's digital literacy theory provides a comprehensive framework for understanding the various skills needed to effectively navigate, comprehend, and create in the digital age. It emphasises the importance of both intellectual abilities and technical skills for successful participation in the digital environment. While Eshet-Alkalai's work serves as a foundational framework for grasping digital competencies, new frameworks have emerged that better reflect the evolving nature of digital environments and our understanding of digital competencies. These newer approaches include critical digital literacy and artificial intelligence literacy.

2.4.2 Critical Digital Literacy

Critical digital literacy refers to the ability to engage with digital technologies and information in a thoughtful and skillful way. It extends beyond just knowing how to operate digital devices and software. Instead, it involves gaining a deeper understanding of the digital landscape, including its social, cultural, economic, and political implications (Polizzi, 2020). In the past, most digital tools were often seen simply as screen time. However, according to Bacalja et al. (2021) modern digital technologies now provide interactive, communal, and structured online spaces for creativity, collaboration, and action. Therefore, understanding and critiquing the digital world we live in requires us to examine how that world is constructed and how language and power are influenced by various technologies, which often obscure the true nature of these systems (Becalja et al., 2021). In simpler terms, to be considered a critically literate individual in the digital age, one must first understand the underlying intentions of digital technologies. This includes exploring why they were created, who developed them, the reasons behind their creation, who has greater access to information, and how all of these factors impact technology usage. The transition from a machine-focused IT perspective to a more critical approach led Hinrichsen and Coombs (2013) to develop a five-resource framework for understanding critical digital literacy. They identify five key resources: decoding, meaning-making, using, analysing, and persona (Hinrischen and Coombs, 2013).

Decoding involves understanding the technical and operational aspects of digital technology. It requires comprehending how digital texts function, navigating various interfaces, and recognising different forms of communication, such as text, images, video, and audio. Additionally, it includes familiarity with the conventions and structures of various digital platforms, such as applications, websites, and social media. Furthermore, it is essential to understand basic digital safety and security measures (Hinrischen and Coombs, 2013). For instance, during online learning, both students and lecturers needed to know how to use various applications, such as Zoom and Teams. To navigate these apps effectively, they had to understand the layout of different features, including joining buttons, mute and unmute icons, text fields for chats to use when muted, record buttons, and more.

Meaning-making emphasises the role of the user in creating meaning from digital texts. Moreover, it involves reading content, understanding the purpose and style of digital communication, and integrating new digital information with prior knowledge. This concept also recognises that meaning is actively constructed by the individual rather than being inherent in the text itself (Hinrischen and Coombs, 2013). For example, during online learning, the effectiveness of pre-recorded or live video lectures depends on more than just the lecturer's delivery. For students, meaning-making involves not only listening to the words but also understanding the concepts presented, identifying key arguments, and taking notes in a way that is meaningful to them. While a lecturer can be viewed online, how the content is perceived and interpreted relies on the individual interpretation of the digitally delivered material.

Using, puts emphasis on the actual deployment of digital technologies and resources to meet specific objectives. This also includes the ability to recognise, evaluate, apply, solve issues, and create using digital technology. Moreover, it is about effectively and artistically utilising digital tools for a variety of reasons (Hinrischen and Coombs, 2013). For example, lecturers used a variety of online assessment methods, including online quizzes, tests with diverse question types (multiple choice, true/false, fill-in-the-blanks), and online submission portals for essays and projects. Understanding how these tools functioned and successfully navigating them allowed them to develop, mark, and provide comments on assessments, tests, and exams.

Analysing entails critically evaluating the content, purpose, and any biases of digital writing. Additionally, it entails dissecting digital resources to comprehend their constituent parts, challenging the origins and authenticity of the sources, and assessing the aesthetic, ethical, and ideological implications of digital media. Moreover, this method entails asking questions about who generated the information, why it was created, and for whom it is meant (Hinrischen and Coombs, 2013). For example, lecturers were challenged to critically evaluate a variety of online tools, including video conferencing platforms (Zoom, Google Meet, Teams) and learning management systems (Moodle). Their literacy analysis was expected to focus on simplicity of use, accessibility, security, integration, cost-effectiveness, and educational benefits for both them and the students.

Persona emphasises the value of understanding and controlling one's digital identity and online presence. Moreover, it entails being sensitive to reputation issues, constructing identities in digital

environments, and participating responsibly in online networks. Overall, it is about understanding how you present yourself online and how your activities might affect your reputation and connections (Hinrischen and Coombs, 2013). For example, lecturers were compelled to recognise that their online interactions with students have an impact on their professional reputation, even when they had to sometimes connect with students on less formal platforms such as WhatsApp. Furthermore, they were tasked with managing these interactions in a respectful and ethical manner to promote a positive learning environment by responding quickly to enquiries, moderating discussions appropriately, and being mindful of their digital footprint, despite the fact that it was a stressful time when the deadly Corona Virus affected everyone.

Overall, in the contemporary society, digital literacy comprises more than simply fundamental computer abilities, it also includes the capacity to explore the internet critically and ethically, analyse information and content, interact successfully digitally, and adapt to changing technology (Tinman et al., 2023). However, the digital landscape is constantly evolving, with a significant new force shaping human interaction with information and technology, artificial intelligence (AI) (Kumar et al., 2024). Today, AI technology is emerging as a vital skill necessary for essential tasks across various fields and sectors. Moreover, AI has the potential to become one of the most important technological skills of the twenty-first century (Lucci et al., 2022). Consequently, combining AI with literacy means acquiring the key competencies individuals need to thrive in our digital world, utilising AI-driven devices (Ng et al., 2021). Therefore, the following sub-section will examine AI literacy.

2.4.3 Artificial Intelligence (AI) Literacy

Artificial intelligence (AI) has become a vital part of daily life in ways that many people are unaware. AI is present in everything from personalised suggestions on streaming platforms to voice-activated virtual assistants that assist individuals coordinate their schedules (Ng et al., 2021). As AI accelerates, new types of digital literacy are required. This is because today, AI is more than a technological tool; it represents a key societal force. Thus, understanding AI extends beyond computer scientists and data analysts (Ng et al., 2021). On one hand, Long and Margeko (2020) define AI literacy as a collection of competences that allow users to critically evaluate AI technology, interact and collaborate efficiently with AI, and apply AI as a tool online within their

homes, and at work. On the other hand, Wang et al. (2022) define AI literacy as the capacity to appropriately recognise, utilise, and assess technology-related products based on ethical norms. AI literacy, like the commonly used definition of digital literacy, does not call for individuals to become professionals in the underlying theory and advancements of AI. Instead, a person would be considered AI literate if they can use AI products efficiently and appropriately (Wang et al., 2022).

According to this concept, Wang et al. (2022) provide four constructs that can be characterised as AI literacy: awareness, usage, evaluation, and ethics. Awareness is the fundamental level of understanding artificial intelligence (AI). It involves comprehending what AI is, recognising when AI systems are in use, and having a basic grasp of how these technologies operate. This also includes identifying AI applications in everyday life as well as understanding basic concepts related to machine learning and automated systems (Wang et al., 2022). According to Crompton and Burke (2023), in the context of higher education, it is essential for students, professors, and administrators to acknowledge the pervasive presence of AI in educational technologies. This became particularly evident during the COVID-19 pandemic when institutions adopted learning management systems with AI-powered features and implemented plagiarism detection tools to filter content (Crompton and Burke, 2023). For example, for Zoom prerecord or live, there are a few AI features available to enhance the learning and teaching experience. One example is real-time transcription, which can provide a written account of the lecture. The utilisation of this feature can provide accessibility and flexibility in the delivery of content online by providing information in both auditory and text formats all in one go. Therefore, high awareness of this AI feature can help lecturers provide alternative content delivery for students while using Zoom.

Secondly, usage concentrates on practical proficiency, which includes the ability to effectively connect with AI tools, create suitable prompts, navigate AI interfaces, and use AI systems to complete specified tasks. This aspect emphasises practical abilities and procedural expertise while working with AI technologies (Wang et al., 2022). In terms of teaching and learning, this would entail understanding how to leverage AI for teaching, how to use AI-powered online platforms, and how to use AI tools effectively for learning and teaching (Crompton and Burke, 2023). For example, knowing about real-time transcribing is one thing; actually, applying it is another. To achieve the best results when using this AI feature, it is important to minimise background noise,

which can sometimes be challenging to control. However, informing students beforehand that attending the lecture in a quiet location can lead to a more accurate transcript is helpful. Additionally, when sharing the recording, the lecturer has the option to allow or disallow viewers from accessing the transcript. Thus, a lecturer who is highly proficient in using this AI feature will be able to optimise its effectiveness more than a lecturer who is less experienced.

Thirdly, evaluation entails critical assessment capabilities, such as the capacity to determine the quality, accuracy, and appropriateness of AI outputs, as well as comprehend constraints and potential faults and make informed decisions about whether to trust or challenge AI-generated outcomes. This demonstrates higher-order thinking skills applied to AI interactions (Wang et al., 2022). In academia, AI evaluation is likely the most important ability for academic integrity and learning quality. This relates to academics' capacity to appropriately assess the legitimacy of AI-generated content, identify when AI recommendations or automated feedback may be faulty, and sustain critical thinking in the face of algorithmic mediation (Crompton and Burke, 2023). For example, while the AI transcript is a faster approach to generate notes from Zoom, the ability to judge between when AI assistance is useful, whether it has provided accurate transcription and when human engagement is required is a valuable skill to have.

Lastly, understanding the broader implications of AI use involves recognising bias, addressing privacy concerns, considering social consequences, and making decisions based on responsible AI deployment and usage. These arise from two main areas: first, the ethical issues stemming from AI developers and the associated biases, and second, the ethical concerns regarding the application of AI (Wang et al., 2022). In the context of higher education teaching and learning, the ethical use of AI focuses on identifying biases in automated systems, safeguarding student privacy in AI-enhanced platforms, and upholding academic integrity while utilizing AI assistance (Crompton and Burke, 2023). For instance, during online learning throughout the Covid pandemic, AI proved helpful in various instances. However, it was crucial for educators to distinguish between using AI as a tool for administrative tasks and relying on it to create teaching materials. Effective lecturing extends beyond merely delivering content, it also includes mentoring students, facilitating discussions, and providing guidance, roles that a computer cannot fulfill (Hontarenko and Kovalenko, 2024). Therefore, ethical AI use means understanding and respecting academic integrity and recognising the invaluable contribution of human educators in the learning process.

These competencies are critical for the efficient and appropriate use of AI and are not just a theoretical concern for the distant future (Markauskaite et al., 2023). Specifically, in higher education, competencies for AI literacy are essential for improving the learning and teaching experience. They go beyond simply providing access to AI technologies, focusing instead on the successful and ethical integration of AI into learning, research, pedagogy, and institutional innovation (Southworth et al., 2023). Kitsara (2022) argues that it is also critical to understand how AI can widen the digital divide. There are already large skill and access gaps, which are driven by personal and demographic characteristics. As a result, it is important to evaluate how students and faculty who struggle with fundamental computer skills will understand AI principles and effectively use AI tools (Shah, 2023). Therefore, Edeni et al. (2024) highlight that there should be a focus on ensuring equal access to advanced AI tools.

In the context of higher education in South Africa, Khoalenyane and Ajani (2024) argue that while AI has the potential to transform learning and administrative processes, it is crucial to address existing infrastructure limitations. According to their findings, successful integration of AI requires tackling significant barriers, such as internet connectivity and access to appropriate devices (Khoalenyane and Ajani, 2024). These challenges are particularly pronounced in South Africa due to the legacy of resource distribution and accessibility issues stemming from apartheid. Additionally, the authors identify the digital divide as a significant barrier to the adoption of AI technologies. They specifically argue that socioeconomic gaps and limited infrastructure have a direct impact on AI access and effectiveness, particularly in rural universities (Khoalenyane and Ajani, 2024).

Overall, understanding the digital divide, digital literacy, critical digital literacy, and AI literacy, particularly in the South African context, is essential for grasping the complexities of digital learning and teaching for students and lecturers (Rzyankina, 2024). Interestingly, the unexpected crisis of the COVID-19 pandemic highlighted the vulnerabilities arising from inadequate digital preparedness (Ndulu et al., 2022). The experiences of South African students and lecturers during this period of mandatory online learning clearly demonstrated that existing gaps in digital access, digital literacy, and emerging AI literacy significantly hindered their ability to adapt and succeed in virtual educational environments (Mhlanga et al., 2022). Therefore, to get closer to the research

objectives, this literature review will now focus on South African online learning experiences in a Covid-19 pandemic setting.

2.5 SOUTH AFRICAN STUDENTS' PERCEPTIONS ABOUT EMERGENCY ONLINE LEARNING DURING COVID-19

South African students, like their peers around the world, held complex and diverse views on online learning during the COVID-19 pandemic (Du Plessis et al., 2022). Khoalenyane and Ajani (2024) added that these perspectives were significantly shaped by the country's digital divide and socioeconomic inequalities. While emergency online learning offered unprecedented flexibility for some students, it also reinforced the advantages that those with better access already had (Mpungose, 2020). In contrast, many students from disadvantaged backgrounds felt that the pandemic highlighted the harsh realities of the digital divide, worsening existing socioeconomic challenges and causing considerable stress, frustration, and a sense of being left behind while those with access continued to progress (Marongwe and Garidzirai, 2021).

In a study conducted by Malatji et al. (2021) on the perceptions of University of Limpopo students about learning and teaching during emergency online learning, some students highlighted advantages of the new system, such as the ability to record lectures for revision purposes. However, several concerns were raised, particularly about lecturers being unprepared for online teaching. Similarly, a research by Mbambo (2021) at the University of KwaZulu-Natal-Pietermaritzburg, focusing on third-year media students' perceptions of online learning in 2020, revealed that the majority of students felt their lecturers were not adequately prepared to teach in an online environment. To better comprehend previous research on the topic of this study, the following sub-sections will focus on students' experiences and perceptions of communication and interaction, preparedness and levels of guidance by lecturers, and recommendations for future online learning.

2.5.1 Communication and Interaction

In a study conducted by Legg-Jack and Ndebele (2022), which focused on lecturers from the University of Walter Sisulu and their experiences with emergency online teaching, several challenges regarding communication and interaction were identified. One major issue was that many students lacked reliable internet connectivity and sometimes did not have sufficient data,

which hindered their participation and affected the interaction between students and lecturers (Legg-Jack and Ndebele, 2022). Additionally, some lecturers felt that the online tools available were inadequate for conducting practical evaluations. To address these challenges, they suggested incorporating blended learning to enhance social contact between students and lecturers. One lecturer noted that for practical modules, such as science, social interactions and engagement are crucial; thus, facilitating such interactions online is nearly impossible (Legg-Jack and Ndebele, 2022). Mahlaba and Mentz's (2023) study on the University of North West lecturers' perceptions of teaching during the pandemic found that while lecturers experienced both positives and negatives, one of their main concerns and challenges was access to good digital equipment and internet access for both themselves and their students. Similar to the observations made by Legg-Jack and Ndebele (2022), Mahlaba and Mentz (2023) argued that issues with connectivity and electricity significantly disrupted interaction among lecturers and students. One lecturer expressed that most of their students resided in remote areas, making them particularly vulnerable to load shedding and internet connectivity problems.

While lecturers in these studies pointed to issues primarily related to students, Xulu's (2023) study on the experiences and perspectives of the University of KwaZulu-Natal (UKZN), Howard campus students regarding online learning revealed a diverse landscape in terms of communication and engagement. Xulu indicated that the majority of her demographic consisted of Black students, including first-year, second-year, third-year, and postgraduate participants. In the study many students felt that online instruction severely diminished interaction with their lecturers. As a result, some lecturers merely posted notes without making any real effort to communicate or engage with students. One student noted that their lecturers simply uploaded materials and expected them to complete the assignments independently and when issues arose, students often depended on class representatives or resorted to sending emails to the lecturers, but effective communication remained limited (Xulu, 2023). A similar experience was observed in a study by Akinlabi (2023) at the University of KwaZulu-Natal's Pietermaritzburg campus, focusing on Humanities students' online learning experiences. Akinlabi's participants included second-year students, third-year students (who made up the majority), and Honours students, many of whom were residing in rural areas.

While the participants expressed both positive and negative aspects of their online learning experiences, they identified one significant challenge, the difficulty in establishing strong communication and connection with their lecturers and fellow students. They felt that the lack of face-to-face interactions severely hindered or completely eliminated opportunities for engagement (Akinlabi, 2023). In contrast, some students valued online learning because they felt that the virtual environment offered them a more comfortable space for engaging in academic discussions. They appreciated the ability to ask questions freely without the fear of being judged or facing uncomfortable interactions (Akinlabi, 2023). Xulu (2023) and Akinlabi (2023) found that demographic factors, such as poor financial status and living in rural areas with inadequate digital infrastructure, significantly influenced students' overall experiences in online learning, impacting their interaction and engagement.

Mcwabeni (2024) and Fobosi and Malima (2025) also highlighted these issues as key contributors to the digital divide in South Africa. The commonality among all studies, despite being conducted at different universities and from the perspectives of both lecturers and students, is the interconnection of demographic factors such as geographic location, financial background, ethnic group, access to adequate digital infrastructure, and consequently, the experience with online learning. All studies argued that socioeconomic status, a topic that is not new in the South African context, significantly impacted students' access to, usage of, and experiences with online learning. Xulu (2023) and Akinlabi (2023) found that demographic factors, such as poor financial status and living in rural areas with inadequate digital infrastructure, significantly influenced students' overall experiences in online learning, impacting their interaction and engagement. Mcwabeni (2024) and Fobosi and Malima (2025) also highlighted these issues as key contributors to the digital divide in South Africa.

2.5.2 Preparedness and Levels of Guidance Offered by Lecturers

Legg-Jack and Ndebele (2022) highlighted that lecturers felt unprepared for emergency online learning during the Covid-19 pandemic. The abrupt transition to online teaching was necessary to continue the academic calendar, but it highlighted the significant differences between online and face-to-face instruction. To them online teaching requires advance preparation, and unfortunately, there was little time for this during the pandemic (Legg-Jack and Ndebele, 2022). Similarly, a

study by Bekker and Carrim (2021), which examined lecturers from the Faculty of Education at two unnamed South African universities, found that most participants believed the rapid shift to online learning compromised their teaching. They felt like the transition was not simply a matter of moving content online, it also involved adapting to new methods of delivering content, providing guidance, and fostering engagement, which had originally been designed for in-person interactions but were now required to be conducted online with minimal preparation (Bekker and Carrim, 2021). While issues about support and guidance in studies conducted by Legg-Jack and Ndebele (2022) and Bekker and Carrim (2021) were not specifically addressed, Xulu's study highlights students' perceptions regarding the support they received from their lecturers. Most students reported that they received adequate assistance, particularly in accommodating those who faced significant internet connectivity issues and fell behind in their studies. One student noted that their lecturer consistently uploaded recordings after live lectures and encouraged students with difficulties to seek academic counseling. Another student mentioned that before online learning officially began, their lecturer conducted an orientation session to help them understand the upcoming online learning format. Additionally, the student expressed that the support provided, along with the monthly data allowance from the university, was more than sufficient for their needs (Xulu, 2023).

Moonasamy and Naidoo's (2022) study on perceptions of online learning at The University of Zululand (UNIZULU) during the Covid-19 pandemic found that participants believed that improved digital infrastructure was essential for enhancing online learning. Most students, who mostly reside in rural areas, felt that free or low-cost internet access will improve online learning. Furthermore, they believed that literacy training for both students and lecturers would greatly enhance the online learning experience (Moonasamy and Naidoo, 2022). Correspondingly, Legg-Jack and Ndebele (2022) also noted that most lecturers believed that effective online learning necessitated better digital infrastructure and additional training for lecturers. Lecturers believed that they needed technical, social, and moral support from management to teach effectively online. They felt that training should focus on more than just the use of digital platforms for teaching. Such comprehensive training is likely to significantly influence lecturers' attitudes toward online teaching (Legg-Jack and Ndebele, 2022).

According to Xulu (2023), institutions should not only improve the provision of digital resources but also reevaluate their uniform approach to teaching and learning. This is important because students have varying learning styles and, crucially, different levels of access to digital resources and digital literacy. Therefore, digital teaching pedagogies should address the diverse needs of students, considering their access to these resources (Xulu, 2023). In Akinlabi's study (2023), some students expressed the belief that receiving timely responses from their lecturers would help improve their virtual learning experience. Therefore, they suggested that lectures should respond quickly to student inquiries, offer prompt feedback on assignments, and provide additional support during online learning (Akinlabi, 2023).

2.6 CONCLUSION

While there was some usage of digital technologies in education prior to the Covid-19 pandemic, the crisis unquestionably catapulted online learning into the mainstream, making it a global necessity (Bozkurt et al., 2020). This hurried transition frequently lacked meaningful instructional design, but the experiences during this time allow us to reflect on the specific problems and benefits of emergency online learning (Ferri et al., 2020). Furthermore, they assist us in determining what not to do and highlighting which components, even under pressure, demonstrated promise. The pandemic revealed and exacerbated existing global digital gaps, particularly in South Africa (Mcwabeni, 2024). The most pressing worries were about appropriate access to digital gadgets and internet connectivity (Xulu, 2023). While the former was important, how lecturers understood and responded to students' different access levels also had a major impact on both their capacity to study and their overall perception of their lecturers (Mbambo, 2021). Therefore, these experiences and perceptions are crucial even in the post-pandemic era. This is because identifying the merits and demerits from students' perspectives allows us to contribute to the body of knowledge by providing elements of effective future online pedagogies that center on students rather than being only from the lecturers and managements' point of view (Curelaru et al., 2022).

As UKZN gradually transitioned back to in-person learning, resuming physical classes and examinations following the lift of restrictions, some aspects of online learning continue to remain in place, such as certain classes and tutorials being conducted online. Thus, it is important to

explore students' perceptions and experiences about online learning. Although the findings from this study cannot be generalised to represent the experiences of all UKZN students during the pandemic, they aim to provide a student-centered perspective on lecturers' preparedness for online learning during this time. Additionally, the insights gathered may help students recommend ways for their lecturers to enhance their effectiveness and thrive in future online learning environments.

CHAPTER 3: METHODOLOGY

3.1. INTRODUCTION

This study aims to understand and evaluate how students felt about the preparedness of lecturers at the University of KwaZulu-Natal in Pietermaritzburg campus (UKZN-P) in the College of Humanities to take on online learning during the Covid-19 pandemic. In the previous chapter, where relevant literature was reviewed, a great number of studies highlighted access barriers, literacy issues, and social stratifications as some of the key influences that impacted the level of online teaching provided during the pandemic. In this chapter, the research methodology used to collect and analyse information will be explained. As Tan (2022) argue, researchers need to carefully study and choose their preferred research methodologies for their specific research problems because different research techniques and methods cater for different research problems.

According to Patten and Newhart (2018), by understanding numerous ways in which data can be collected and analysed in a research study, one is able to generate knowledge that bests suits the phenomena they are to trying to understand. Irrespective of the chosen research method, the aim is to have conclusions that are the best interpretation of reality (Patten and Newhart, 2018). A good researcher is also judged on the advantages of the research methodology used to collect and analyse data. Therefore, as guided by the aims of this research, which is to understand UKZN-P College of Humanities' lecturers' preparedness to effectively and efficiently teach online during the Covid-19 as perceived and experienced by their students, the research methodology will be qualitative, adopting an interpretivist methodological paradigm. This chapter provides a synopsis of the methods used for data collection, the target population, sampling, sampling techniques, data analysis, reliability and validity, and ethical considerations.

3.2. RESEARCH APPROACH

This research utilised a qualitative approach. While quantitative research is effective for collecting and analysing numerical data to identify patterns, make predictions, evaluate causal relationships, and extrapolate findings to larger populations (Ahmad et al., 2019), it has limitations in

understanding the complex "why" behind phenomena, the lived experiences of individuals, and the subjective meanings people attach to their actions and beliefs (Taherdoost, 2022). As a result, although quantifying effects, prioritising issues, and assessing the quality of evidence (Jamieson et al., 2023) are important, they may have hindered a more comprehensive understanding of the key objectives of this study. In contrast to quantitative research, qualitative research employs various inquiry methods (Denzin, 2008) to explore the experiences and circumstances of different individuals (Renjith, 2021). One effective approach is to analyse people's interpretations, which are shaped by their perspectives, to understand a phenomenon. In other words, qualitative research not only seeks to gather data by examining why and how things happen (Khoa et al., 2023), but it also enables researchers to gain in-depth insights into people's ideas, attitudes, experiences, and interactions (Lim, 2025). To gather information, a qualitative researcher employs open-ended and in-depth approaches including interviews, surveys, and questionnaires to address the major research issue (Lim, 2025).

These data collection methods lead to accurate understanding and can capture aspects of the world using clarifying language and descriptions (Allan, 2020). This is because this approach enables participants to explain how, why, or what they were thinking, feeling, and experiencing at a certain time or during an event of interest (Creswell and Creswell, 2017). Therefore, this study used a qualitative approach, with the research's main focus on understanding and evaluating how well lecturers at UKZN-P were equipped to efficiently and effectively teach online, as perceived and experienced by UKZN-P Humanities students. Adopting a qualitative approach was advantageous to the researcher because it allowed for the collection of rich, thorough data, which enabled the discovery of the complexities around students' experiences in relation to their lecturer preparedness during online learning (Tracy, 2024). This is important in knowing how students viewed their lecturers' preparedness because it provides insights into individual struggles and accomplishments that quantitative methods may overlook. Furthermore, qualitative techniques are particularly valuable for ethnographic researchers because they facilitate in-depth qualitative analysis (Nassaji, 2020). In the context of this research, such analysis is crucial for identifying recurring themes and patterns in student feedback, which will help this and future studies in better understanding both the common obstacles and positive features of online learning.

The preferred paradigm for this research is interpretivism. Unlike positivism, which assumes an objective, external reality that can be measured and studied scientifically, interpretivism posits that reality is subjective, multiple, and socially constructed (Denscombe, 1998). Interpretivism holds that reality is socially produced and subjective, influenced by personal experiences and social settings (Pervin and Mokhtar, 2022). The primary purpose of this paradigm is to comprehend the meanings that people attribute to their experiences, activities, and the social world around them (Irshaidat, 2022). It does this by emphasising how and why people act in unique situations, rather than aiming to discover universal principles or cause-and-effect links, as in the positivist approach (Junjie and Yingxin, 2022). Thus, utilising a positivist approach that holds that there is a just one, objective reality that can be defined and determined by empirical observation and investigation (Park et al., 2020), would have failed to serve this study. Positivist researchers focus on data collection and objective analysis, while interpretivist researchers actively engage with their subjects, asserting that reality is subjective and that individuals may have different perceptions of the world.

This research specifically aimed to understand the perceptions and experiences of UKZN-P Humanities students in relation to their lecturers' readiness to take on online learning during the Covid-19 pandemic. However, it does not aim to assume that the discovered perceptions can fully represent every student's experience during this period. The way students perceive their lecturer's readiness is not an objective fact that can be quantified like student satisfaction on a scale of 1 to 10 (Park et al., 2020). While student satisfaction can indeed be measured numerically, this approach alone will not offer researchers insights into the reasons behind those ratings, nor will it capture the factors that influence students' overall satisfaction. Adopting an interpretivist approach allowed the researcher to explore and understand the perceptions of UKZN-P Humanities students regarding their lecturers' readiness to embrace online learning during the Covid-19 pandemic. This included examining variables such as student-lecturer communication and interaction, the guidance and support received from lecturers, and the students' overall recommendations.

3.3 SAMPLING TECHNIQUES

According to Willie (2024) target population holds significance in research because it specifies the exact group of people or things that a study intends to evaluate. Therefore, acknowledging the significance of target populations is important for guaranteeing the accuracy and implementation of study findings (Willie, 2024). Another essential strategy for guaranteeing an appropriate selection of participants is to fully clarify what the study seeks to research. This helps to find an accurate selection of participants who will help answer the research questions (Stratton, 2021). Stratton (2021) adds that this might be characterised by population demographics, experiences, or other relevant qualities. This study aimed to understand and explore the perceptions of a specific group, Humanities students at UKZN-P who experienced at least one year of online learning during the Covid-19 pandemic. To achieve this, it employed non-probability, convenience, purposive, exponential discriminative snowball sampling. Unlike probability sampling, which uses random selection methods to ensure that each member of the population has a chance of being chosen for the study, non-probability sampling relies on subjective criteria to select participants based on the research's objectives rather than through random selection (Stratton, 2023).

Since this research specifically targets UKZN-P Humanities students with at least one year of online learning experience and does not aim to randomly select any UKZN student, non-probability sampling was the most suitable method. The study specifically aimed to sample students who were registered during the 2020-2022 academic years. These particular years were chosen because, unlike other South African universities that returned to in-person learning sooner, UKZN resumed full contact learning only in 2023.

According to Dube (2020), KwaZulu-Natal has a large number of rural primary and secondary schools in South Africa that lacks the usage of digital technology. Thus, the introduction of online learning had the potential to provide several obstacles to students and teachers who were used to contact learning (Dube, 2020). According to UKZN's enrolment data for 2020, most Humanities students at UKZN are sourced from quintile 1-3 schools (Bodrick, 2020). These are mostly rural and peri-urban schools. In addition, schools classified as quintile 1-3 are designated as no-fee schools. This classification is based on the high levels of poverty in their surrounding communities (Dass and Rinquest, 2017). Thus, considering the digital divide is influenced by geographic

location, education and socio-economic status in South Africa (Mcwabeni, 2024; Fobosi and Malima, 2025), as well as its documented impact on students' online learning experiences during the Covid-19 pandemic, as reported by Moonasamy and Naidoo (2022), Xulu (2023), and Akinlabi (2023), this study specifically sampled Humanities students from the University of KwaZulu-Natal in Pietermaritzburg.

To get closer to the specific research participants, two methods were used that fall within non-probability techniques: convenience, purposive sampling and the exponential discriminative snowballing technique. On one hand, convenience sampling is when a researcher selects participants based on convenience, which can be influenced by criteria such as the researcher's ease of access to participants, geographic proximity to individuals, and previous interaction with the selected participants (Golzar et al., 2022). On the other hand, purposive sampling is a technique in which a researcher actively selects specific participants for a study, motivated by the notion that they can provide valuable information owing to their knowledge or experience (Campbell et al., 2020). The goal of purposive sampling is to collect rich, comprehensive, and insightful information from individuals or groups who have specific features, knowledge, experiences, or viewpoints that are important to the study (Campbell et al., 2020). This also entails deciding on the type of data to collect and, as a result, actively selecting who to include in the sample based on their capacity to help achieve the research's purpose (Nyimbili and Nyimbili, 2024). Snowball sampling is employed when the population a researcher wishes to examine is difficult to reach, or there is not a present database or other sampling framework to help them identify them (Parker et al., 2019). To perform a snowball sample, researchers begin by locating one person who is willing to engage in their research, they then ask them to introduce you to other people who fit the required criteria (Parker et al., 2019).

The researcher employed a combination of convenience, purposive, and exponential snowball sampling techniques to target the most suitable participants. The Humanities students at UKZN-P were particularly accessible to the researcher, who is also a student within the faculty and has established connections with peers through previous interactions. Additionally, the researcher had engaged with students from the Media and Cultural Studies discipline during her Honours research. Some of these students had expressed interest in participating in future studies conducted by the researcher. Additionally, these students recommended other students who were chosen for

this study. Therefore, given her familiarity with the Humanities Faculty and the existing database of students from this field, convenience sampling was the most effective method for selecting participants. The researcher specifically aimed to sample students from the UKZN-P Humanities who had at least one year of online learning experience during the pandemic, rather than including all UKZN-P Humanities students. This focus is important because the research objectives are to understand the perceptions of UKZN-P students regarding their lecturers' readiness to conduct online learning during the Covid-19 pandemic. Thus, students without online learning experience during this time were not included. This decision was guided by purposive sampling.

Purposive sampling was employed to select participants for the follow-up focus group interviews. These participants were re-recruited from the initial questionnaire respondents. The selected students expressed interest in participating in the follow-up interviews and identified as being from quintile 1-3 schools. To ensure diversity, the recruiter specifically included both undergraduate and postgraduate students, as well as those who were studying at home and those who were on-campus residents during Covid-19. This is because the purpose of the focus group interviews was to better understand the initial perceptions of the students by exploring specific points they raised and delving deeper into their earlier responses. Additionally, including students from different educational levels and living situations, whether at home or on campus, helped achieve a more comprehensive understanding. Lastly, the researcher employed an exponential discriminative sampling technique. While the exponential discriminative sampling technique may take longer than exponential non-discriminative approaches due to the additional selection step, it can lead to more valuable conclusions and reduce data noise from irrelevant participants (Yadav et al., 2019). In this study, it was crucial to screen referred participants to ensure that they had at least one year of experience with online learning during the Covid-19 pandemic. Furthermore, for selecting participants for the follow-up focus group interviews, it was again important to screen them to ensure they met the aforementioned criteria.

For this study, 34 students from UKZN-P Humanities were sampled. Of these, 10 were former classmates of the researcher who had participated in the researcher’s Honours research and had expressed interest in being part of future studies. The entire population included undergraduates, Honours students, and those who, during the COVID-19 pandemic, transitioned from being final-year students to Honours students. As previously mentioned, the additional participants were

referred by the first group. The researcher screened the 24 students to ensure they had at least one year of online learning experience during the pandemic. To ensure this, the students were asked if they had registered as UKZN-P Humanities students during the COVID-19 pandemic for at least one year between 2020 and 2022 before being included in the study. For the follow-up focus group interviews, two sessions were conducted, one with seven participants and another with six participants. The groups included students from quintile 1-3 schools and comprised both undergraduate and postgraduate (Honours) students during the Covid-19 pandemic. To ensure a diverse focus group, the researcher purposefully selected participants who expressed interest in joining the follow-up interviews and met the specified criteria. Additionally, the composition of each group was intentionally designed to promote diversity within the discussions. This was done by ensuring that each focus-group consisted of both undergraduate and postgraduate students.

It is important to note that when conducting research that requires in-depth analysis of qualitative data, it is advisable to use a smaller sample size. Fewer respondents allow for a more thorough examination and understanding of participants' experiences, which enhances the quality of the analysis (Johnson, 2019). A large number of participants can produce vast amounts of data, making it challenging to manage and interpret (Johnson, 2019). Therefore, to identify key patterns and themes in the collected data, the researcher chose to use a smaller sample size of 34 participants, along with two intimate focus groups consisting of fewer than 10 participants each. The researcher initially contacted participants through WhatsApp and phone calls.

3.4 DATA COLLECTION METHODS

To serve the purpose of this research, online questionnaires and focus group interviews were used to collect the information. A questionnaire is a research tool consisting of a set of questions designed to gather valuable data from participants. These tools are typically formatted in an interview style and include both written and spoken questions. Questionnaires can be qualitative or quantitative and may be conducted online, on paper, or face-to-face (Dalati and Marx Gómez, 2018). Importantly, when designing a questionnaire, researchers must choose an appropriate method of administration, develop credible questions that address the research objectives, and arrange those questions in a logical order (Brace, 2018). One advantage of questionnaires, particularly compared to observations where researchers must directly witness participants'

behaviors and interactions, is that they do not require the researcher's presence for data collection. Additionally, online questionnaires, which were utilised in this study, offer researchers the ability to distribute them across multiple platforms such as email and WhatsApp, facilitating faster response collection (Dewaele, 2018). This approach allows participants the autonomy to complete the questionnaires at their convenience, free from constraints related to geographic location and time. Online questionnaires provided responses that could be preserved in an online drive for effortless analysis. This allowed the researcher to focus on analysing results rather than having to worry about losing paper copies (Zhang et al., 2017).

The questionnaire included both closed and open-ended questions. Closed-ended questions offered insights into the overall rates of specific topics, while the open-ended questions allowed participants to elaborate on their initial ratings as well as share their overall experiences and perceptions. The questionnaire was divided into five sections, Section A, Section B, Section C, Section D and Section E. Section A focused on students' demographic factors, asking about the School they fall under within the Humanities, their level of study, their location during online learning, and the type of high school they attended. Section B included questions about the digital learning platforms used by lecturer and their perceived usefulness. Section C focused on how students perceive interaction and engagement in the learning process. Section D looked at students' views on the performance of lecturers, specifically regarding their facilitation of digital examinations and the level of academic support provided online. Section E focused on recommendations from participants for improving future online learning experiences.

For the follow-up focus group interviews, the main objective was to explore the reasons behind the patterns observed in the questionnaires. This aimed to capture the rich context that influenced participants' perceptions of their lecturers during the pandemic. The group setting of focus group interviews allows individuals to discuss and build on each other's views, resulting in a more comprehensive understanding of collective perceptions (Edley and Litosseliti, 2018). Additionally, these discussions provide real-time feedback, as participants could respond to one another's ideas, leading to instant interaction and deeper insights into their experiences. In other words, the interactive nature of focus groups often encourages more enthusiastic and passionate participation compared to traditional survey methods (Kruger, 2019). Given the focus of this research on an event that occurred some time ago, it was particularly important to create an

interactive environment for participants, especially those who had already left university. This setting allowed them the opportunity to jog their memories about their experiences during the Covid-19 pandemic in 2020. This was also a key reason for not opting for one-on-one interviews, the researcher wanted participants to help each other recall what it was like to learn during that time.

Unlike the questionnaires, the focus group interviews consisted of five standard open-ended questions for both groups. These questions aimed to initiate a conversation, allowing students to clarify their understanding of the type of interaction and support they expect from lecturers. The discussions connected their perceptions to their high school background, their current level of study, and their ideas for solutions and recommendations to better prepare for future interactions with lecturers.

3.5 DATA ANALYSIS

To interpret the data collected from the questionnaires, percentages were used to analyse the responses from the closed-ended questions, while the answers to the open-ended questions were analysed using thematic analysis. Close-ended questions inherently provide structured, predefined response options (Sreejesh et al., 2014). As a result, percentages offer a straightforward method for quantifying these responses, converting opinions or behaviors into numerical data (*articles.outlier.org*, 2023). By employing this strategy, the researcher was able to identify the percentage of students who were at home during online learning, including those who had previously attended high schools in rural areas and townships. This approach helped accurately represent the distribution of responses within each category, making it easier to identify dominant ideas and responses that showed significant division (*articles.outlier.org*, 2023). To analyse the data collected from the close-ended questions, thematic analysis was employed. This method focuses on identifying, analysing, and interpreting patterns or themes within qualitative data (Clarke and Braun, 2017).

Thematic analysis is particularly useful for examining people's perceptions, experiences, and opinions, drawing from various sources of data such as interviews, focus groups, or written materials (Clarke and Braun, 2017). Additionally, thematic analysis can be conducted inductively, where themes emerge directly from the data, or deductively, where researchers start with pre-

existing themes based on theoretical frameworks or prior knowledge (Clarke and Braun, 2017). Unlike discourse analysis, which seeks to understand how language is used in texts and how meanings are conveyed (Johnstone and Andrus, 2024), thematic analysis was the most suitable approach for examining the qualitative data in this study. This is because the primary goal is not to analyse discourse but to interpret students' perceptions regarding their lecturers' preparedness for online learning, the nature of lecturer-student interactions, the level of academic support and guidance provided, and recommendations for enhancing the online teaching environment.

To analyse the data collected from the focus group interviews, the researcher applied thematic analysis. The primary purpose of the follow-up interviews was to gain a deeper understanding of the students' lived experiences and perspectives, an area in which thematic analysis is particularly effective. In contrast, discourse analysis goes beyond merely what is said, it examines how language is used to construct meaning, reflect social realities, and influence actions. While analysing students' language responses about lecturers during the focus group interviews can provide insight into their perceptions of online experiences, it is less central to the research's main objective. As previously mentioned, the primary aim of the focus group interviews is to identify the specific actions or omissions that led to the themes initially discovered. This will also consider students' type of high school attend, the students' levels of study, and their location during online learning. By doing so, the researcher will deductively trace both contradictory and similar themes in comparison to existing research and theories concerning the digital divide within the South African higher education context.

3.6 ETHICAL CONSIDERATIONS

To uphold ethical standards, participants in this study were informed that their participation was voluntary and that they might withdraw at any time without damage. Participants signed informed permission forms outlining the study's goals, methodology, and the risks and benefits associated with participation. To protect anonymity in this study, participants are referred to as participants or respondents rather than by name. Furthermore, the acquired data will be erased after five years so that it cannot be recovered in the future. To maintain privacy and confidentiality in this study, all acquired data was saved on a password-protected USB drive known only to the researcher and supervisor. This information was also communicated to the participants to increase their comfort

and confidence. For this study, participants were instructed that if they ever felt uncomfortable, they could contact the researcher or the supervisor at any moment. This study was granted approval by the UKZN Humanities and Social Sciences Research Ethics Committee.

3.7 CONCLUSION

As outlined in the introduction, this chapter provided a synopsis of the methods used for data collection, the target population, sampling, sampling techniques, data analysis, and ethical considerations. There are numerous tools of data collection, sampling and data analysis, therefore, it is imperative that the researcher carefully studies all available tools, compare and contrast in order to choose the best suitable methods for their study.

The following chapter discusses the study's findings in great depth.

CHAPTER FOUR: DATA ANALYSIS

4.1 INTRODUCTION

The previous chapter provided an overview of this study's research methodology. This chapter will analyse and examine UKZN-P Humanities students' perceptions of their lecturers' readiness to take on online learning during the pandemic using data collected from questionnaires and focus group interviews. The University of KwaZulu-Natal (UKZN) is comprised of four main colleges: The College of Agriculture, Engineering and Science, the College of Health Sciences, the College of Humanities, and the College of Law and Management Studies (*UKZN Website*, n.d.). Among these, the College of Humanities is the largest. "The College of Humanities at UKZN consists of six diverse yet complementary schools located across three of its five campuses: Edgewood (near Pinetown), Howard College (in Durban), and Pietermaritzburg. The schools include the School of Arts, School of Social Sciences, School of Applied Human Sciences, School of Education, School of Built Environment and Development Studies, and the School of Religion, Philosophy, and Classics" (*UKZN Website*, n.d.). As mentioned earlier, the research focused on Humanities students at UKZN-P, which means the students come from a wide range of disciplines. Strategically, the data analysis will be separated into two sections.

The first half will analyse questionnaire data thematically, drawing on themes that arose from the results. The data was carefully examined to ensure that all pertinent information was entered for analysis. The section begins by examining the demographic characteristics of the participants. Thereafter, major themes which emerged from the findings will be discussed. The second section will thematically analyse the discussions from the focus group interviews. As mentioned in the previous chapter, the primary goal of these interviews was to gain a deeper and clearer understanding of the participants' responses to the themes identified in the questionnaires. Additionally, the focus groups aimed to examine how factors such as educational background, level of study, and location during online learning influenced these responses. In other words, while the questionnaires sought to address the 'what?' question, the focus group interviews aimed to explore the 'why' question. Consequently, this chapter will analyse the identified themes from both the questionnaires and focus group interviews, relating them to the literature and theories

discussed earlier. This approach aims to provide further insights into the main questions of the research.

4.2 DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

Figures 1 to 6 as shown in Appendix A present participants' demographic factors including factors like the school they fall under, their level of study during the 2020-2022 academic years, and the type of high school they attended.

This study involved a diverse group of participants, as illustrated in Figures 1 to 6 (in Appendix A). Figure 1 (Appendix A) shows that 38% of participants were from the School of Arts, 29% from the School of Social Sciences, 21% from the School of Education, and 12% from the School of Applied Human Sciences. Notably, there were no participants from the School of Religion, Philosophy, and Classics, or from the School of Built Environment and Development Studies. The use of a snowball sampling technique contributed to the predominance of participants from the School of Arts, as the initial participants were a group of Media and Cultural Studies students selected by the researcher.

Among the participants, 53% were undergraduates, while 21% were Honours students. Additionally, 26% had completed portions of both their undergraduate and postgraduate studies during the 2020-2022 academic years. Geographically, most participants, 59%, were residing at home, while 26% lived on campus residents, and 15% shared time between campus and home. The majority of respondents during the 2020-2022 period lived in rural areas (59%), with 12% in townships and 29% in urban areas. As illustrated in Figure 5 (Appendix A), the data indicates that 35% of students attended high schools in rural areas, followed by 26% who attended high schools in townships. Additionally, 21% attended government-run city high schools, and 18% attended private schools.

To prevent generalisations regarding quintile rankings, the researcher verified the school rankings provided by participants using *UniApplyForMe*. It was found that 62% of participants were from quintile 1-3 schools, while 20% were from quintile 4, and 18% from 5. Overall, while all participants shared a common experience of online learning during the pandemic as UKZN-P humanities, they also exhibited a range of demographic factors that likely influenced their

experiences. This demographic diversity allows the research to provide a robust and generalisable understanding of themes across different segments of the sampled students.

4.3 PERCEPTIONS ABOUT LECTURERS' ONLINE TEACHING PERFORMANCE DURING THE PANDEMIC

This section will present the findings from the participants' questionnaires' responses regarding their lecturers' online teaching performance during online learning. The first series of questions aimed to identify the online tools used by lecturers and students' perceptions of their lecturers' ability to effectively use these tools. Additionally, participants provided their insights on why their lecturers were or were not successful in utilising the specified online tools for teaching.

The first part of this section will use percentages to analyse the students' ratings, while the second part will explore recurring themes related to students' evaluations of their lecturers' online teaching abilities during online learning.

As illustrated in Figures 7 to 10 in Appendix B, students had differing perceptions of their lecturers' online teaching performance during remote learning. The students surveyed indicated that the primary online tool their lecturers used was UKZN Learn (Moodle), an internal learning platform at UKZN. This was followed by Zoom as the second most utilised tool, with WhatsApp, Microsoft Teams, and YouTube ranking next. Consequently, 57% of participants believed that UKZN Learn (Moodle) was the most effectively used online teaching tool by their lecturers, while 23% favoured WhatsApp. Zoom was recognised by 14% of the students as one of the best-used tools, and Microsoft Teams received endorsement from 6% of participants. Interestingly, while Zoom was noted by some students as the third best-used teaching tool, it was also cited as the least effective by others. In fact, 29% of participants identified UKZN Learn (Moodle) as the worst-used tool, followed by Microsoft Teams at 23%, and YouTube at 8%. When asked about their perceptions of how well their lecturers delivered the curriculum on these digital platforms, 65% of participants rated their lecturers as good. Additionally, 20% chose average, 12% rated their performance as poor, and 3% rated it as excellent, as shown in Figure 10 (Appendix B).

When asked to elaborate on their ratings of the best and worst tools used during online learning, as well as their assessment of their lecturers' ability to effectively deliver the curriculum online, the following themes emerged: familiarity, competence, and discomfort.

4.3.1 Familiarity

The responses indicated that perceived familiarity with online tools influenced students' ratings of their lecturers' ability to teach effectively in an online environment. Several students noted that UKZN Learn (Moodle) was the preferred tool because most lecturers were already familiar with it, while this was not the case for other platforms. While familiarity with UKZN Learn (Moodle) was seen as an advantage, it also created a disadvantage for other online tools since the lack of familiarity affected how effectively lecturers could teach. One student who rated their lecturers' ability to deliver content online as good explained that most content was provided through UKZN Learn (Moodle), which led to a positive assessment of their lecturers' performance. The student stated, "The majority of my lecturers were able to deliver the content well online because they relied on what they knew, which was Moodle. They also used other platforms occasionally, but since they primarily used Moodle, they did a good job, in my opinion." Another student, who also rated their lecturers' online teaching ability positively, mentioned that their lecturers utilised WhatsApp to deliver content.

The student appreciated this method, saying, "My lecturers were already using WhatsApp to deliver notes, which worked in everyone's favour during the pandemic because we were all already using it in our daily lives. It was easy to adopt it as an official form of learning." However, not all students shared positive experiences regarding familiarity with online tools. Some students reported that many of their lecturers were not fully accustomed to relying on online platforms for teaching, which affected their performance. One student noted, "Some of my lecturers struggled with using Zoom for live lectures and would often complain about the difficulties. One or two of them candidly told us that it was their first time using Zoom to teach, and it showed, although they improved over time." Another student echoed this sentiment, indicating that Microsoft Teams posed challenges for several lecturers. The student commented, "It was difficult for most of my lecturers to use Microsoft Teams, it was obviously unfamiliar to them, just as it was for us."

Another interesting discovery related to familiarity was that some students, particularly most postgraduates, mentioned that lecturers faced challenges because they were not accustomed to relying solely on one teaching method. One student remarked, “I think most lecturers struggled with the transition to using only one method, online teaching, since, in the past, they were accustomed to physical classes and they could alternate with online platforms.” Another student shared similar sentiments, stating, “I think they did their best with what they could, but without any training, resources, or options other than online teaching, it was difficult for them.”

4.3.2 Competence

Many students argued that one of their key issues was directly linked to their lecturers' ability to effectively use online tools for teaching. Some students specifically mentioned the lack of digital skills among lecturers as a significant factor in how they rated their performances. One student noted that most of their lecturers lacked the relevant skills to utilise new online tools effectively, which hindered their ability to deliver the curriculum. The student commented, “My lecturers were visibly unable to use Teams to the best of their ability, we therefore spent most of our time in class not only battling internet issues but also figuring out which functions to use.” In contrast, another student expressed that most lecturers were able to use online tools successfully and demonstrated strong teaching skills. “Most of the lecturers did very well, and I could tell they had experience or some form of training. However, there was one lecturer who struggled a lot and seemed inexperienced. Overall, I was satisfied with their performance,” the student added.

While some students focused on lecturers' competence in using online tools, others discussed the importance of integrating new methods for better online learning experiences. One student expressed frustration, stating that lecturers often failed to recognise that methods that worked offline needed to be adjusted for online learning. “Most lecturers wanted to simply move everything online without considering the consequences. For example, I had lecturers who expected us to take online tests simultaneously, without understanding the connectivity issues we were facing,” the student remarked. Similarly, another student argued that lecturers did not devise new strategies to accommodate all students online, they simply assumed a one-size-fits-all approach would suffice. “I don’t think my lecturers understood the difficulties we were facing.

They expected us to adhere to one submission date like before Covid-19, forgetting that circumstances have changed drastically," the student added.

Overall, the ability of lecturers to effectively use online tools and develop new strategies that cater to all students was a significant factor influencing how students rated their lecturers' performance during online learning.

4.3.3 Discomfort

The most recurring theme expressed by students was that online learning during Covid-19 created an uncomfortable situation, negatively impacting lecturers' performance. Some students noted that many lecturers struggled with online teaching due to a lack of proper training, while others felt that Covid-19 itself contributed to this discomfort. One student commented that some of their lecturers seemed uneasy about teaching online. They stated, "While I commend them for doing a good job in helping us learn during a difficult time, it was clear to me that they were not comfortable with having to suddenly switch to online learning. I may not know the exact reasons, but I can imagine it was a challenging experience having to implement a last-minute plan, especially in 2020 when everything was still new and overwhelming."

Another student echoed this sentiment, saying that many lecturers appeared out of place, which affected their teaching. This student remarked, "My lecturers were great during in-person classes. I expected them to perform even better during online learning, however, they seemed very uncomfortable with everything they were doing, especially in my undergraduate year in 2020. They improved in 2021, but gaps still existed, and I think they dropped the ball in my opinion." Some students felt that Covid-19 itself contributed to the discomfort experienced by their lecturers. Most expressed sympathy, explaining that they understood the struggles faced by their lecturers, as everyone was affected by the pandemic. One student shared, "I cannot forget how scary it was for everyone involved. Given that they were dealing with Covid-19 while trying to deliver quality education, I understand why they felt overwhelmed."

Similarly, another student stated that their lecturers were dealing with anxiety, which explains why they may not have performed as well as before the pandemic. "They were stressed and depressed like everyone else during that time. I'm not surprised they couldn't deliver at the same level they

did pre-Covid-19," the student added. However, a few students felt that some lecturers failed to acknowledge the significant academic impact of Covid-19 on students. One pointed out, "They could have done more but sometimes seemed to forget that what they were experiencing, we were experiencing twofold. They didn't have to write tests or assignments, we did, and I think they could have considered our feelings more." Another student supported this view, stating, "Most of my lecturers seemed more focused on pleasing management at our expense. We were unhappy, and not once were we asked if the new methods were working for us. That will always be my issue with my lecturers during online learning."

Overall, while most of the sampled students rated their lecturers' performance as good, their reasons for these ratings varied. Some students cited issues of familiarity, competence, and discomfort as factors influencing their lecturers' ability to teach effectively online. A common theme in the feedback was that all students felt that there was some level of discomfort in the new learning environment, which they felt affected lecturers' performance, regardless of how they rated them. It is important to note that all undergraduate students mentioned discomfort in their responses, while most postgraduate students identified competence as a key factor in evaluating their lecturers' performance. Familiarity with the online tools also played a significant role, as many students indicated that UKZN Learn (Moodle) was most effective because lecturers were familiar with it, unlike other online tools due to a lack of prior experience. This suggests that while most students rated their lecturers' teaching positively, the reasoning behind these ratings varied among different groups. However, a shared experience of discomfort was noted among undergraduates.

4.4 LECTURER-STUDENT DIGITAL INTERACTION AND ENGAGEMENT

This research aimed to understand how effectively lecturers were able to facilitate online interactions with students, as perceived by the students. To gather this information, questions were asked about the students' experiences regarding their lecturers' ability to create sufficient digital interactions during online learning. The first section will present data on participants' ratings of their lecturers' interactions with students both during and after lectures. Following that, the research will discuss recurring themes identified in students' explanations for their ratings.

As illustrated in Figures 11 and 12 in Appendix C, most students expressed dissatisfaction with the digital interaction facilitated by lecturers, both during and after lectures. Specifically, 50% of students rated the interaction during lectures as poor, 41% rated it as average, and only 9% rated it as good. Notably, no postgraduate students rated the interaction as poor, in fact, the 9% who rated it as good were all postgraduates. In contrast, a majority of undergraduate students rated the interaction as poor, with 99% giving it a poor rating. Similarly, when students were asked to evaluate their lecturers' availability for consultations after lectures, all postgraduate students rated it as either good or excellent, whereas all undergraduate students rated it as poor. It was particularly interesting to note that students who had experience in both undergraduate and postgraduate studies reported that their interaction improved due to changes in their learning needs as they progressed to postgraduate education. This finding, along with others, will be discussed further below under the recurring themes of disconnectivity, flexibility, and approachability.

4.4.1 Disconnectivity

One of the key issues raised by students regarding their ratings of digital interactions during lectures is the problem of disconnectivity. Many students referred to disconnectivity in terms of internet connection issues and the impact of load shedding on their overall experience. Some students also pointed out the disconnectivity in how lecturers interacted with the content and with students during the lectures. One student mentioned that, due to load shedding, they rarely had a stable internet connection, and when they did connect, their lecturers often faced similar problems. "I solely blame the internet connectivity on both ends," the student explained. Another student added that there were always internet connection issues during live lectures, which hindered how well lecturers could facilitate interactions. "It was very hard to get through a class without glitches and disconnections, therefore, I think my lecturers focused solely on completing the lesson," the student remarked.

Additionally, another student noted that lecturer-student interactions were severely disrupted by poor internet connectivity from either the lecturer's or the student's side. "It really became pointless to ask questions after classes because the internet was too unreliable, or we ran out of time due to glitches that prolonged interactions that would take a maximum of five minutes in physical

classes," the student added. Some students felt that their lecturers did not prioritise engagement and interaction during lectures. One student remarked, "Most of my lecturers completely stopped encouraging interactions and questions during class, and instead told us to send them emails afterward. This really affected me because the Q and A sessions were usually very helpful, and I was too shy to reach out to my lecturers directly." Another student mentioned that they were not accustomed to interacting directly with their lecturers and depended on class interactions. They added, "I preferred the group interactions in class, and I was very hesitant to ask for one-on-one consultations after class. This lack of connection was a significant disadvantage for me."

Regarding lecturers' availability for consultations after lectures, many students pointed out issues with connectivity. They felt there was a lack of coherence in how lecturers conducted digital consultations. Most students complained that their lecturers were either slow to respond to emails or offered limited time for consultations. One student mentioned that, for many of their modules, there were no consultations available before examination period. Lecturers tended to make themselves available only during assignment and test periods. The student stated, "I needed to consult before assessments and tests, but most lecturers only made themselves available during the assessment period, making it difficult to find suitable time slots, especially since nearly everyone needed a consultation." Another student noted that their experience with consultations before Covid-19 was better because there were dedicated times and slots available. They felt their lecturers' consultation schedules did not accommodate their needs. This student added, "My lecturers were not considerate of how important consultations after classes were, especially since most students struggled to connect to live lectures and needed one-on-one help after missing classes."

4.4.2 Flexibility

Many students who rated their interactions with lecturers during online classes as average or good cited flexibility as a significant advantage of digital environments. One student noted that they could write questions in the Zoom chat box during lectures for the lecturers to address afterward, calling it a helpful new feature. They expressed, "I was able to leave comments while my lecturer was conducting a class, something I was always hesitant to do during physical classes. This really

allowed me to engage more during lessons." Another student shared that the small, intimate class sizes made them feel comfortable interacting with lecturers online. They added, "Our lecturers encouraged us to ask questions without needing to turn on our cameras, which alleviated my shyness. I also appreciated that we could ask questions via the chat box, sometimes, tutors would respond to our queries, and afterwards, lecturers would elaborate on the answers."

Some students noted that flexibility was a significant advantage of lecturers' availability for online consultations. One student who rated this interaction positively shared that online consultations were more accessible for them, as they did not have to deal with geographical barriers or fixed office hours. They said, "As a postgraduate student with a lot on my plate in 2020, I found online consultations very convenient. There was no need for me to be physically on campus, making it easier to schedule meetings with my supervisor." Another student mentioned that they typically felt hesitant to arrange consultations during in-person classes, but found it less intimidating online because they could turn off their camera. They commented, "I think online consultations were perfect for someone shy like me. I felt much more confident consulting online without my lecturer having to see my face."

4.4.3 Approachability

Another theme identified was the approachability of lecturers during one-on-one consultations. Most students who experienced both undergraduate and postgraduate studies expressed that, due to their changing learning needs, lecturers became more approachable. One student from the cohort who evaluated the interaction as satisfactory mentioned that their one-on-one consultations were poor throughout their undergraduate years but improved significantly during their postgraduate year. The student stated, "In 2020, I was not satisfied with how most of my lecturers conducted one-on-one consultations, however, in my Honours year, I believe they were good because they were more personalized and interactive." The student believed this improvement was due to their greater independence as a postgraduate student compared to when they were an undergraduate. Another student shared similar sentiments, arguing that the lines of communication in their postgraduate studies were much more open compared to their undergraduate experience. They added, "During my final year, I was hesitant to seek consultations because I thought my lecturers

were too overwhelmed, but in my Honours year I even had my lecturers' phone numbers and could contact them via WhatsApp to set up consultations."

Overall, while many students, particularly undergraduates, felt that the digital interactions facilitated by their lecturers were insufficient due to connectivity issues and a lack of cohesive one-on-one consultations, there were some who appreciated the flexibility and approachability of these online interactions. These students found the digital engagement during lectures and post- lecture consultations beneficial. Interestingly, more postgraduate students reported that their independence in learning made online consultations easier for them. They valued the flexibility that digital interactions offered. In contrast, some undergraduate students expressed that the lack of availability for one-on-one consultations significantly impacted their performance, as they relied on these personalised sessions for support.

4.5 DIGITAL FACILITATION OF ASSESSMENTS, TESTS AND EXAMINATIONS

One of the objectives of this research was to investigate how students perceived their lecturers' ability to conduct assessments, tests, and examinations online. To achieve this objective, students were asked to rate how effectively they believed their lecturers managed digital assessments, tests, and examinations during the Covid-19 pandemic. As shown in Figure 13 in Appendix C, most students rated their lecturers' ability to conduct assessments, tests, and examinations as good. Only 29% rated it as average, while 27% rated it as poor. When analyzing the reasons behind these ratings, two key themes emerged, inclusivity and stress.

4.5.1 Inclusivity

Some students praised most of their lecturers for making sure that tests, assessments, and examinations were accessible to all students. However, other students expressed concern that some lecturers overlooked those who were excluded because of limited resources and a lack of skills in using online technology for examinations.

Students who had positive views on inclusivity indicated that their lecturers made efforts to

accommodate them when they faced difficulties with submitting assessments or participating in online exams. One student shared an experience where they were unable to take an online quiz due to internet connectivity issues and load shedding. Their lecturer provided an alternative option to submit an assessment instead. The student remarked, “I felt like my lecturers did everything they could to ensure I was able to be assessed, just like the other students who faced fewer technical issues.” Similarly, another student noted that most of their lecturers successfully ensured that all students were given the opportunity to be examined. “Because of load shedding and internet connectivity issues, lecturers extended deadline dates to make sure every student was able to submit their work eventually. I think that’s what mattered most to me,” the student added.

While some students sang endless praises about their lecturers’ ability to ensure no one was left behind, a few expressed experiences that were quite the opposite. One student shared feelings of exclusion regarding online writing tests, stating they received no training from their lecturers. The student remarked, "We were expected to know how to write exams online without any background knowledge. Unfortunately, I wasn't as skilled as my classmates, and I felt left behind." Another student raised concerns about their skill levels, arguing that lecturers should have provided training before the online tests and exams. They stated, "I heard from a friend that they received a brief training session before taking tests online, while we did not. I wish we had also been trained, it would have made a huge difference." Overall, students expressed mixed perceptions regarding lecturers' ability to ensure inclusivity during online assessments, tests, and examinations.

4.5.2 Stress

Several students reported significant anxiety and stress relating to how their lecturers assessed and examined them during online learning. They noted that issues such as internet connectivity problems and load shedding exacerbated their stress, which impacted their performance even when they were given a second chance. One student shared, “I was overwhelmed by internet connectivity issues, and even though I managed to complete most of my assessments, they were rarely submitted on time.” Another student mentioned that they felt some lecturers were also overwhelmed and stressed by the digital examination process. “I think some of my lecturers were just as stressed as we were, which sometimes made me question how fairly they would grade our assignments.”

Additionally, one student expressed anxiety and stress stemming from a lecturer's refusal to grant deadline extensions. This student commented, “One lecturer denied my request for an extension, arguing that they also had a marking deadline to meet. I found that very inconsiderate, especially considering the known internet connectivity issues we were facing.” Interestingly, another student indicated that a significant source of their stress and anxiety was the lack of clarity regarding the types of proctoring that would be implemented during online examinations. They stated, “The unclear communication about how some of my tests and exams would be monitored to prevent cheating caused me major anxiety, as I was uncertain about whether my actions might lead to trouble.”

Overall, while most students rated their lecturers' facilitation of digital assessments, tests, and examinations as good or average, some students reported negative experiences. Moreover, there were mixed perceptions regarding lecturers' ability to promote inclusivity in online exams. A significant negative aspect highlighted by students was the stress and anxiety they experienced due to how digital exams were conducted by lecturers, which contributed to an overall negative experience.

4.6 LECTURERS’ SUPPORT AND GUIDANCE IN DIGITAL ENVIRONMENTS

To better understand students' perceptions of their lecturers' academic support during online learning, this research explored how effectively students felt their lecturers provided assistance and timely solutions in the online learning environment.

As illustrated in Figure 14 in Appendix C, more than half of the students rated their lecturers’ level of academic support as poor. Specifically, 53% of the students who rated this experience negatively were primarily undergraduates, while those who rated it as good, excellent, or average were mostly postgraduates, along with a few students who had experience in both undergraduate and postgraduate studies.

Similarly, as shown in Figure 15 in Appendix C, the majority of students felt that their lecturers did not provide timely solutions during online learning. The students who rated this experience as

average were primarily postgraduates, with just one student who had experience in both undergraduate and postgraduate studies. When asked to elaborate on the reasons behind these ratings, three themes emerged: passivity, negligence and urgency.

4.6.1 Passivity

In discussions about academic support during online learning, several students expressed concerns that many of their lecturers were not proactive and tended to be passive in providing effective guidance, particularly during challenging times. One student noted that some lecturers appeared overwhelmed by their workloads, leading to a neglect of the necessary academic support. The student remarked, "Due to work overload, some lecturers focused solely on teaching, grading, and posting marks, forgetting that some students need assistance beyond just content delivery." Another student echoed these sentiments, stating that lecturers seemed distant and disengaged during online learning. "Before online learning, many lecturers cared about students' progress and academic improvement, but during this period, it feels like they forgot that important aspect," the student added.

An interesting observation related to lecturers' passivity was that some students believed it stemmed from the lecturers' proficiency with digital technologies. One postgraduate student specifically argued that the lack of technological skills hindered proactive academic support. "I feel like if my lecturers knew how to use online tools effectively, they would have been more proactive in offering us support," the student commented. Additionally, another student, who had experience as an undergraduate and a postgraduate, explained that the lack of engagement from lecturers was partly a result of the physical distance created by online learning. "The nature of online learning itself diminishes the human connection, which makes lecturers seem distant, perhaps unconsciously," the student added.

In relation to lecturers' ability to provide timely solutions, several students noted that while common problems like internet connectivity issues were prevalent, lecturers often did not have solutions prepared in advance. Instead, they tended to react to issues as they arose, or sometimes not at all. One student shared their frustration, stating, "Despite experiencing internet issues

frequently, my lecturers never seemed to have solutions ready, especially when it came to writing exams. I expected them to inform me in advance about how they would assist, but instead, I always had to encounter the problem first and then figure out a solution, which became very frustrating and redundant." Another student argued that lecturers should have recognised sooner that recorded lectures would be beneficial, as many students were struggling with internet connectivity. "It took my lecturers months to realise that we needed both live and recorded lectures, and it was only implemented after we suggested it," the student added.

In summary, although students shared the common experience of lecturers not being proactive in offering academic support and timely solutions, they perceived this passivity in different ways. Some students felt that their lecturers were distant, disengaged, or adopted a 'wait and see' approach to various situations.

4.6.2 Negligence

When discussing their experiences with academic support, several students conveyed feelings of neglect from their lecturers. One student mentioned feeling particularly vulnerable during online learning, stating that the lack of support from lecturers made them feel abandoned. They remarked, "Lecturers only prioritised the students who were doing well online and neglected those who were lagging behind." Another student echoed this sentiment, stating, "I felt neglected by some of my lecturers and very helpless. I wish they would take more initiative in understanding why students' academic performances were dropping." Similarly, another student highlighted that their lecturers focused solely on delivering content and overlooked the need for additional assistance. "There was little to no effort from lecturers to offer personalised academic support. If 80% of the class was performing well, they neglected the 20% who were struggling," the student explained. Notably, most of the students who expressed feelings of neglect were undergraduates.

4.6.3 Urgency

In examining students' perceptions of lecturers' academic support during online learning, it was found that some students assessed the effectiveness of that support based on the urgency with

which it was provided. The feedback from students revealed both positive and negative views regarding lecturers' responsiveness in offering academic assistance during online learning.

Some students expressed that their lecturers were quick to respond to questions, provide clarification, and offer support during online learning. One student commented, "I experienced that lecturers gave prompt responses via email, and they were also quick to schedule one-on-one sessions for numerous students who were struggling to meet deadlines." Another student explained that, unlike before online learning, they felt lecturers understood the importance of urgency in assisting students. "In my experience, most lecturers were quick to respond to students' queries and provide prompt, attentive feedback," the student remarked. Similarly, another student noted that their lecturers did not hesitate to help and, when preoccupied, would refer them to tutors. The student stated, "As overwhelming as the workload was, my lecturers were able to promptly address my queries, and they ensured that tutors stepped in quickly when they could not assist at that moment."

Although many students appreciated their lecturers' sense of urgency in providing academic support during online learning, some expressed negative perceptions regarding this aspect. One student noted that most lecturers took too long to respond to questions and arrange consultations. "I would write to lecturers and only receive feedback five days later, sometimes even after tests and exams," the student commented. Another student echoed this sentiment, stating that delayed responses from lecturers were quite frustrating, especially during such a challenging time when online communication was their only option.

When it came to lecturers' ability to provide timely solutions, most students felt that there was often a lack of urgency, resulting in delays. Many students expressed a desire for immediate responses, particularly regarding common issues such as internet connectivity. One student mentioned that while they did not expect lecturers to always respond instantly, they believed it was essential for them to prioritise problems related to internet disruptions that hindered students from taking tests and exams. "The inability to write exams is the most pressing issue in my opinion. Therefore, I was not pleased that some lecturers were not prioritising finding sustainable solutions to these problems," the student commented. Similarly, another student noted that lecturers were

slow to assist students in overcoming internet connectivity issues and load shedding. “They seem to be taking the challenges of load shedding and internet connectivity lightly, forgetting how these problems are affecting students’ academic performance,” the student added. Overall, while most students were not particularly satisfied with the level of academic support provided by their lecturers and their ability to offer timely solutions, there were some students who had positive perceptions. These students argued that their lecturers were prompt in offering support and solutions. This view contrasted with those who felt that the lecturers were lacking in proactivity and urgency when it came to providing effective academic assistance.

4.7 RECOMMENDATIONS FOR FUTURE ONLINE LEARNING

In an effort to understand students' perceptions regarding recommendations for online learning, the research first asked students to identify which aforementioned area between, lecturer-student interaction, academic support, or timely solutions, do they believe their lecturers need to improve upon and to explain why.

As shown in Figure 16 (in Appendix C), over half of the students (53%) believe that their lecturers need to improve in several areas. Specifically, they highlighted the need for better facilitation of lecturer-student interactions, improved methods for conducting assessments, tests, and examinations, increased academic support, and the provision of timely solutions. However, 15% of students suggested that lecturers should only enhance the level of academic support they provide, while 14% only recommended improvements in the management of digital assessments, tests, and examinations. Furthermore, 9% of students only called for enhancements in how lecturers facilitate interactions with students during and after lectures, and another 9% only emphasised the need for more effective and timely solutions from lecturers. The interesting note about this finding is that most undergraduates indicated their lecturers needed improvement in all the mentioned areas, while postgraduates and those with experience as both undergraduates and postgraduates identified one specific area.

When asked to elaborate on why they selected the areas, three themes emerged: variety, availability, and innovation.

4.7.1 Variety

Most students felt that there was a lack of variety in how lectures are conducted during online learning, particularly regarding examinations and student interactions. Several students have expressed a desire for lecturers to consider the diverse needs of students when administering exams to ensure that no one is left behind. One student noted, “While online tests may work for students who do not struggle with internet connectivity issues, submitting assignments may be more manageable for those who do.” Another student suggested that lecturers should offer different test dates for different students. “Instead of setting just one date for conducting an online test, more lecturers should consider providing various dates and times. This approach would allow students to choose a suitable time that works best for them," the student added. Additionally, another student pointed out the challenges of taking tests during peak internet usage times, especially for those facing connectivity issues. They remarked, “We as students are aware of peak and low network times, so it would be helpful if lecturers allowed us to select times that align with our network availability.”

Some students expressed a desire for lecturers to create a variety of interactive sessions. They suggested having both communal and personalised options to cater to different preferences for interaction. One student mentioned that they would have appreciated intimate group consultations, similar to tutorials but with lecturers present, as they felt hesitant to approach lecturers directly. The student stated, “I would have appreciated it if lecturers hosted intimate sessions where we could ask questions and discuss certain topics as a group. I find it easier to speak up in communal settings.” In contrast, another student expressed a preference for personalised consultations, stating that their lecturers only offered communal consultations through tutorial groups. This student remarked, “I perform better when I can consult individually, I sometimes feel too embarrassed to ask for clarification on topics that my classmates seem to understand well.”

4.7.2 Availability

Students expressed that they did not feel the presence of lecturers during online learning and felt that some lecturers excessively relied on computers and possibly AI to fulfill their responsibilities instead of engaging in the actual teaching work. One student commented, “My lecturers used to set up many online quizzes but assigned very few assignments. I think they were lazy to mark them, so they let the machine do it. They also didn’t make themselves available to provide comprehensive feedback after the marks were released.” Another student echoed these sentiments, stating that lecturers were sometimes unavailable to offer clarity and additional feedback after releasing mark. “It was useful to receive detailed feedback, and the lack of it led me to believe that some lecturers did not want to go the extra mile, they just let the computer do all the work with little or no effort to engage with our work,” the student added.

Some students expressed that most lecturers were unavailable for consultations after classes. They felt that, due to internet connection issues and disrupted classes, there was a need for more intensive consultations and one-on-one sessions, but the lecturers seemed to be unavailable in that regard. One student noted that they wished more lecturers would use social media apps to be accessible to students. The student said, “If lecturers used more WhatsApp to communicate, I would have felt like they were genuinely trying to connect, especially since they knew students struggled with email. They could have at least attempted to meet us halfway, particularly during Covid.” Another student remarked that, due to internet connectivity problems, lecturers could have chosen alternative communication methods that did not demand high internet speeds. This student pointed out, “It was a time for lecturers to truly be available for students. Expecting us to use specific online tools was unfair to those who couldn’t connect, as it felt like lecturers were only making themselves available to those with reliable internet access.”

4.7.3 Innovation

Some students applauded their lecturers for implementing innovative strategies during online learning. One student mentioned that certain lecturers made a genuine effort to ensure that no student felt excluded. They recalled a specific instance, “In one class, I couldn’t do a presentation

because my Zoom mic and camera wasn't working, so my lecturer suggested that I record my presentation and post it on YouTube. Then, I could share the link with the class so they could leave comments underneath." Another student shared that some lecturers were creative in conducting online consultations. "I wanted to have a session with my lecturer one time, but I struggled with Zoom, so she suggested we switch to a WhatsApp video call instead, and that worked much better," the student added.

While some students praised their lecturers for being innovative, others felt that they lacked creativity in structuring their online courses. One student pointed out that many lecturers did not take advantage of the visual elements available in online environments. The student remarked, "Although a few lecturers used graphics to present content, many conducted long, boring lectures filled with lengthy notes and no visuals. They could have made learning more colorful and enjoyable." Another student shared similar thoughts, stating that some lecturers did not attempt to be innovative and instead tried to replicate the traditional classroom experience in an online format. This student commented, "Lecturers had the opportunity to make changes, such as being more engaging and accessible, since online learning has fewer time constraints. Yet, they mostly chose to maintain the same approach as before."

In addition to this, most students recommended that lecturers should receive training on how to use digital tools for teaching, as digital technologies are constantly evolving. Interestingly, a few postgraduate students mentioned artificial intelligence (AI). One student suggested that UKZN should provide lecturers with proper training on how to integrate AI to enhance the experience for both lecturers and students. The student remarked, "I know there are AI tools and functions that lecturers can use to assist themselves and their students however, for this to work, UKZN must train the lecturers." Similarly, another postgraduate student emphasised that lecturers should consider how AI can help reduce their workload in the future. "Most lecturers are overwhelmed, and I believe that with more knowledge about AI, they would be able to effectively lessen their workload and offer better service to students."

Students have varying perceptions about how lecturers can enhance online learning in the future. These perceptions are closely linked to several key factors like the importance of variety in

teaching methods, providing students with options for how they learn, and utilising multiple online tools. Additionally, students emphasised the need for lecturers to be more available and engaging, as well as the importance of innovation through proper training, especially given the continual evolution of digital technologies and the rise of AI.

4.8 SUMMARY OF SURVEYS

In summary, the analysis of surveys provided several insights into how students experienced their lecturers' abilities to foster effective online interactions, facilitate exams and tests, offer academic support, and provide timely solutions during online learning. The analysis presented three main findings. On one hand, students expressed positive perceptions regarding their lecturers' familiarity with UKZN Learn (Moodle). On the other hand, negative perceptions arose due to challenges related to competence, discomfort, connectivity issues, stress, passivity, and negligence. Additionally, themes such as lecturers' flexibility, approachability, commitment to inclusivity, urgency, variety, availability, and innovativeness received mixed reviews from students. These themes did not elicit uniform reactions, as experiences varied among different students.

An interesting pattern in these perceptions is that postgraduate students frequently praised the accessibility of their instructors and the interactive opportunities available to them. This indicated a strong sense of connection and academic support. In contrast, undergraduate students expressed concerns about feeling disconnected from their lecturers. They felt left behind and desired more availability from their lecturers in future online learning. Students who had experience as both undergraduates and postgraduates tended to have a neutral perspective. They acknowledged a noticeable difference and improvement in the lecturers' engagement. Therefore, these perceptions directly informed the structure of the focus-group interviews, which aimed to explore these emerging themes further by seeking to understand the reasons behind students' initial perceptions. Before conducting the thematic analysis of the follow-up focus groups, it appeared that postgraduates were more independent compared to undergraduates, and therefore, their expectations for lecturers during online learning were not as demanding as those of the undergraduate cohort. It is also crucial to note that all students, regardless of their level of study,

raised concerns about lecturers' competence, internet connectivity issues, load shedding, and the need for innovation. Consequently, the following analysis aimed to further investigate these initial findings by examining how students' demographic factors influenced their perceptions of lecturers.

4.9 DEMOGRAPHIC CHARACTERISTICS OF FOCUS GROUPS

Group 1 included a total of seven participants, comprising of four undergraduate students and three postgraduate students. In contrast, Group 2 consisted of six participants, with three undergraduates and three postgraduates. It is important to note that all participants came from high schools ranked in quintiles 1-3.

4.10 SOCIO-DEMOGRAPHIC FACTORS AND ONLINE LEARNING PERCEPTIONS

To gain a deeper understanding of students' perceptions, the research explored several factors that influenced their engagement with the questionnaires. This included questions about their high school backgrounds, the social transition from high school to university, and their academic levels. Additionally, students were given the opportunity to discuss the factors that shaped their perceptions. This section will examine recurring themes from the students' discussions, highlighting the key factors that contributed to how they formed their perceptions.

4.10.1 High School Background

During focus group discussions, students shared their experiences from high school, where classes were conducted face-to-face, and they did not rely on platforms like email or WhatsApp for communication. They noted that the interaction style used by their high school teachers was different from that of their lecturers during online learning. This prior experience significantly influenced how students engaged with online learning during the pandemic. Importantly, many students mentioned that there were no computer labs in their high schools. In cases where there were a few computer labs, students indicated that these facilities were either non-functional or only

available for science students. Therefore, their high school experiences, including teachers' interaction and teaching styles, as well as access to digital resources, significantly influenced how they experienced online teaching during the pandemic.

4.10.1.1 Interaction Style

Students expressed a preference for the close interactions they had with their teachers in high school and expected a similar experience in online learning. They were accustomed to the intimate dynamics of being in a physical classroom every day of the week, where they could easily access their teachers and ask questions in real time. Additionally, students felt a strong connection to their teachers, who actively took steps to foster a sense of community. This included constantly reminding them about deadlines, extending deadlines when necessary, scheduling parent meetings, and offering personalised interaction. According to the students, their high school teachers developed personal relationships with each learner, allowing them to understand individual learning needs better. The following responses illustrate this insight.

> *"Most of our academic activities took place within the school premises. Teachers would provide us with memorandums and assist us with assignments in person. There was never a time when I was at home struggling with homework and had to send an email asking for clarification, everything happened during class. Maybe I expected the same experience in university." (Participant 1, Group 1)*

> *"I agree, I had a similar experience. Even if we could send emails or communicate with our teachers via social media, I wouldn't have done it because no one at home had a smartphone or laptop. Moreover, data is expensive." (Participant 4, Group 1)*

> *"True, our teachers were very involved, they practically babysat us in a way. We were reminded about deadlines, and in most cases, you would never receive*

a zero. Teachers always ensured that you submitted your work, even on the last day." (Participant 3, Group1)

"I think this was also because the teachers developed close relationships with us. They knew about our struggles and families and formed bonds with us, which made it easier for us to rely on them for support." (Participant 2, Group 1)

"Oh yes, I remember that between terms, teachers would hold parent meetings. During these meetings, they would inform our parents about our progress, and our parents could help us after school. We really had a bond." (Participant 3, group 1)

"They knew our names, faces, and performances, which is why they could see when we needed them the most." (Participant 6, Group 1)

4.10.1.2 Teaching Style

Students expressed that in high school, learning was primarily teacher-centered and followed a top-down approach, with teachers leading the instruction. Their high school teachers were proactive and hands-on, often initiating contact and communication. As a result, students felt that the different teaching styles in high school and university left them unprepared to develop the self-discipline needed for the new learning environment. This transition made them feel somewhat isolated from their teachers. Overall, students were accustomed to taking a lead in their learning while relying on teachers for guidance, which made the abrupt shift to university and predominantly online learning during the pandemic feel overwhelming. The following conversation illustrate this notion:

"I think we need to remember how things worked in high school, and I would assume this applies to every high school. I could be wrong, but everything was very teacher-centered back then. You couldn't even initiate things on your own without consulting the teachers. I

know I was quite dependent on them, and they played that role very well." (Participant 4, Group 2)

"Hmm, I wasn't entirely dependent because I studied better when I was alone than when I was with others, but I would say I am now more independent compared to my high school days." (Participant 1, Group 2)

"What changed, if I may ask?" (Interviewer)

"Everything changed, in my opinion. First, I was away from home and physically on my own. Second, lecturers are nothing like teachers; they lecture you, not teach you," (laughs) (Participant 1, Group 2).

"Oh wow! That's true. I think they have a different teaching style overall, which is expected because we are now adults. It shouldn't be the same, you know? We are also here to learn independence more than anything. I just feel like the pace is too fast for some of us." (Participant 2, Group 2)

"What do you mean by 'some of us'?" (Interviewer)

"I mean us from rural schools. The gap is too wide. Imagine moving from a school where you had no computers and a teacher who simply gave you information to a whole new environment where you have to use computers, and the so-called teacher isn't as present as you anticipated." (Participant 2, Group 2)

"That's very true. You're expected to learn something in weeks that takes years to master." (Participant 1, Group 2)

"What is that something, if you were to be specific?" (Interviewer)

"Self-discipline and independence." (Participant 1, Group 2)

Moreover, students noted that in high school, it was their teachers who took the initiative to arrange one-on-one sessions with learners, unlike in university where the responsibility often fell on the students. The following discussion summarises these points:

> *"Teachers were the initiators of our communication. They would be the ones to tell you that you needed to see them after school. At least, that's how it was for me in high school." (Participant 7, Group 1)*
>
> *"Yes, at university, you are expected to initiate communication. If you don't reach out, your lecturers won't approach you or tell you to see them after class." (Participant 3, Group 1)*
>
> *"There was actually a time when my English lecturer was concerned about my progress. They sent me an email asking to schedule a consultation." (Participant 2, Group 1)*
>
> *"Did that make a difference?" (Interviewer)*
>
> *"It helped a lot. I was afraid to seek help, and their offer made me feel more comfortable asking for it." (Participant 2, Group 1)*

4.10.1.3 Digital Resources

One notable finding is that most students from both groups reported that their high schools did not have computer labs. Only three students from Group 2 mentioned the existence of computer labs, and they clarified that these labs were primarily used by students in science classes. Additionally, they noted that the computers in the labs were often stolen or not functioning properly, and there were very few instructors available at the schools, which meant that only a limited number of students could receive training. This lack of digital resources in high school resulted in some participants having little or no prior experience with online learning tools and collaborative platforms. Consequently, they lacked a contextual understanding of what effective online teaching looks like. Furthermore, due to this lack of experience, students lacked digital fluency and required

more assistance from their lecturers during online learning. The following responses summarises these points:

> *"There were no computer labs in my high school, and even our local library did not have computers. The only time I used a computer was when my sister visited during the holidays." (Participant 4, Group 2)*
>
> *"I guess we were somewhat lucky because our school had two computer labs, but they were very small and were only used by the science learners who were taking computer studies. I was studying History, so…" (Participant 1, Group 2)*
>
> *"Well, same here. Unfortunately, my school was located in a very dangerous area. There were break-ins on weekends where computers were stolen. This happened so frequently that the school decided not to replace the computers anymore." (Participant 3, Group 2)*
>
> *"Did you ever get a chance to use the computer lab when it was still functional?" (Interviewer)*
>
> *"Nope! It was only for the science students, and I was not interested anyway." (Participant 3, Group 2)*
>
> *"Why were you not interested?" (Interviewer)*
>
> *"At that time, I did not think life would lead me to a place where I would really need to use a computer. I guess it was ignorance." (Participant 3, Group 2)*

Overall, students' high school backgrounds, which often included limited exposure to digital platforms and a teacher-centered learning style, significantly influenced their expectations. This, in turn, affected how they evaluated their lecturers' performance in online settings. Many students were accustomed to more personal forms of learning, and the shift to online education during the

pandemic contributed to feelings of discomfort, stress, perceived neglect, and concerns about lecturers' availability.

4.10.2 Social and Cultural Transition

A discussion in Group 2 highlighted an intriguing notion about the social environment of universities and schools, and how students perceive the impact these settings have on the teaching methods employed by lecturers and teachers. According to the students, in high schools, particularly those in quintiles 1 to 3, the student body is relatively homogeneous. Although students may perform differently, they generally share the same cultural background, making it easier for teachers to provide personalised attention. In contrast, universities like UKZN accept students from diverse backgrounds. Those coming from higher-ranked schools often have advantages, such as early exposure to aspects of university life, access to computers, and lessons in independence. As a result, students believe that lecturers sometimes struggle to engage effectively with a diverse group of students, which can leave students from disadvantaged school at a disadvantage.

4.10.2.1 Student Diversity

For many participants, understanding the diversity of the student body in high school compared to university is both significant and challenging. They believe that it is much easier for teachers to address diverse learning needs in high school, where most students share similar social backgrounds and belong to the same community. In contrast, university brings together students from various walks of life, which can make it difficult for lecturers to recognize the different social contexts of their students. As a result, some teaching strategies may inadvertently leave certain students behind. The following discussion help illustrate this finding:

“Upon reflection, I believe that high school and university differ in many ways. However, the biggest distinction is that in high school, everyone typically comes from the same area, while university introduces you to people from all walks of life.” (Participant 5, Group 2)

“That’s interesting, I think this also influences how teachers teach compared to how lecturers deliver their lectures.” (Participant 3, Group 2)

“Could you please elaborate on your point?” (Interviewer)

“Think of it this way, in high school, teachers mainly deal with students who come from either wealthy or low-income backgrounds. Yes, their performance may vary because not every student is the same, but teachers can generally predict students' access to certain resources. In contrast, university students come from diverse backgrounds, so for lecturers to be effective, they need to use teaching methods that accommodate everyone.” (Participant 3, Group 2)

“Oh yes, so in online learning, lecturers needed to take these factors into consideration.” (Participant 2, Group 2)

“Do you think lecturers actually considered these factors?” (Interviewer)

“To some extent, the management did take it into account. We received monthly data; however, lecturers didn't change their teaching styles sufficiently.” (Participant 1, Group 2)

“This situation favored students from private schools, as they had some prior experience. Unfortunately, we did not.” (Participant 3, Group 2)

“Is that so?” (Interviewer)

"We were unfortunately left behind." (Participant 3, Group 2)

Overall, students believed that the transition from a disadvantaged high school to a university significantly impacts how they interact with lecturers during online learning. For some of the students surveyed, it was important for lecturers to consider their diverse social backgrounds when developing teaching strategies for online classes. When lecturers failed to do this, students reported feeling excluded.

4.10.3 Academic Level

Students' level of study influenced their perceptions of their lecturers' performance in online learning. Specifically, undergraduates expressed that they still require some support and engagement from their lecturers. They noted that, due to their limited experience with self-directed study, they were still learning to navigate university life. Additionally, undergraduates mentioned that it was easier to seek assistance from fellow students before online learning. However, the distance in the online format meant they had to rely more heavily on their lecturers, which increased their need for support and guidance.

4.10.3.1 Dependence

Many undergraduate students reported struggling with the increased autonomy that comes with online learning. They felt somewhat academically underprepared and relied on their lecturers for assistance in improving their academic performance. The following responses summarise this insight:

> *"As I mentioned earlier, I have become more independent compared to my high school days. However, I still require some guidance and support from my lecturers. Additionally, I find one-on-one consultations to be very beneficial, which I felt I missed out on during online learning." (Participant 1, Group 2)*

> *"I share the same feelings. Due to internet connectivity issues, I was unable to join live lectures most of the time. Furthermore, it was difficult to download or watch pre-recorded*

lectures without interruptions. As a result, I needed my lecturers to be proactive and accessible for support." (Participant 2, Group 2)

"I agree, we really needed special attention. Remember, I was at home, and I struggled in many ways." (Participant 3, Group 2)

4.10.3.2 Experience

Postgraduates, on the other hand, expressed that even with their exposure to intimate learning environments in high school, they feel more accustomed to the teaching style of their lecturers due to the years spent at university. Additionally, they noted that in postgraduate studies, much of the learning is self-driven, and they no longer seek as much attention from lecturers:

"I am not going to lie, I was a needy undergraduate as well, but over time I just got used to it." (Participant 1, Group 1)

"Please elaborate." (Interviewer)

"Well, I have adapted to the lecturers' teaching styles. Moreover, I have tutoring experience, so I think I understand that sometimes lecturers cannot do much because certain issues are management-driven."

"I also have tutoring experience, and I believe this helps me understand some of the challenges lecturers face."

"Can you provide any examples?" (Interviewer)

"There are many things, but some issues are just hard to change." (Participant 3, Group 1)

Overall, the level of study significantly influenced students' learning needs. Undergraduates indicated a greater need for support, while postgraduates demonstrated the self-discipline and independence that typically accompany their status. Additionally, some postgraduates noted that

their experience with tutoring, which brings them closer to their lecturers, helps them understand the procedures and processes that lecturers must follow, fostering a greater sense of understanding.

4.10.4 Geographic Location

Students indicated that being away from campus facilities affected their experience. They noted that they come from areas prone to load shedding and lack sufficient digital infrastructure. Therefore, they sometimes felt vulnerable during online learning.

4.10.4.1 Digital Infrastructure

Students expressed that while studying from home, they faced poor infrastructure and experienced frequent disconnections, which hindered their ability to complete tests on time. They reported general frustration with the technical feasibility of online learning. Specifically, students highlighted their annoyance with load shedding, stating that not only did low network coverage contribute to their struggles, but the constant loss of electricity also caused significant disruptions and discomfort during their online classes. As a result, they felt that lecturers could have been more accommodating to students dealing with inadequate internet infrastructure by implementing alternative strategies:

> *"I was home for the entire 2020, and things were really bad. We had constant electricity outages, my network connection was always poor, and I could not write tests on time. I felt a bit neglected as I saw my classmates progressing while I felt stuck." (Participant 1, Group 2)*

> *"I was at home for a few months before being allowed back on campus. I must say, the experience of studying from home was horrible. Although being back on campus helped me a lot, I was still not entirely satisfied." (Participant 3, Group 2)*

> *"Load shedding was the worst. Furthermore, the coverage in my area was very poor."*

> *"How do you think your lecturers could have intervened?" (Interviewers)*

“In my case, I would have appreciated being assigned written assignments instead of taking tests online, the experience was terrible. I was stressed due to the disconnections and the questions. It was unbearable.” (Participant 3, Group 2)

“I agree, alternative methods would have made a huge difference, especially for those of us prone to internet connectivity issues. Our lecturers could have met us halfway.” (Participant 1, Group 2)

4.10.4.2 Campus Facilities

Some students shared that the early days of the pandemic were particularly challenging. However, as restrictions eased, they found their experiences improved. Many noted that returning to the university allowed them to access resources and communicate more effectively with their lecturers. For these students, especially since they lacked adequate digital infrastructure at home, campus facilities such as LAN, libraries, unlimited Wi-Fi, and generators to manage load shedding became essential lifelines:

"Being away from home and reintegrating back into campus helped me a lot. The campus has generators, so even though we experienced load shedding, there was a backup plan in place. Additionally, there is unlimited Wi-Fi available." (Participant 4, Group 1)

"That's true, sometimes the data we received was insufficient. I really noticed the improvement when I returned to campus." (Participant 2, Group 1)

"Furthermore, being back on campus allowed us to interact with other peers, which greatly assisted me." (Participant 6, Group 1)

Overall, students reported that they were greatly impacted by being away from campus. At home, they faced challenges such as load shedding without a generator, unstable internet connections, and limited data.

4.11 SUMMARY OF FOCUS GROUPS

Students' perceptions of lecturers' performance during online learning are significantly influenced by several factors, including their high school backgrounds, their current level of study, the locations they were in during online learning, and the differences in teaching styles they experienced between high school and university. These themes provide a comprehensive understanding of how students' backgrounds and socio-demographic factors interact with the realities of online learning, ultimately shaping their perceptions and levels of satisfaction.

4.12 DISCUSSION OF FINDINGS

So far, this chapter has presented the data collected by this study to provide answers to the research questions. The researcher also examined the factors that shaped the students' initial perceptions, delving deeper into the influences on UKZN-P Humanities students' views regarding their lecturers' readiness to engage in online learning during Covid-19. The identified perceptions and the factors influencing them offer valuable insights into online learning and demonstrate the relevance of the theories and literature discussed in Chapter Two.

Firstly, this study aimed to investigate how well lecturers at the University of KwaZulu-Natal, Pietermaritzburg Campus (UKZN-P), were prepared to teach online, as perceived and experienced by their students. As discussed in Chapter Two, South African students, like their peers worldwide, had complex and diverse opinions on online learning during the COVID-19 pandemic (Du Plessis et al., 2022). This perspective is reflected in the findings, as many UKZN-P Humanities students shared varied experiences regarding their lecturers' performance in online learning. While most students agreed that their lecturers effectively utilised their familiarity with UKZN's Learn (Moodle), an internal online learning tool, they also expressed concerns about the use of external platforms like Zoom and Microsoft Teams. Additionally, students highlighted lecturers' lack of competence and discomfort with online teaching tools, which led to feelings of stress and being left behind. This finding aligns with the research by Marongwe and Garidzirai (2021), which reported that students from disadvantaged backgrounds felt that online learning during the pandemic exacerbated existing digital divides, making them feel even more isolated.

Concerns regarding lecturers' competence mirror those raised by Eshet-Alkalai (2004) and Hinrischen and Coombs (2013) about the various components that define digital literacy. Several students reported that their lecturers struggled with features on platforms like Zoom and Microsoft Teams, indicating a need for training. Hinrischen and Coombs (2013) emphasized the importance of "decoding," which involves the ability to navigate different digital technology interfaces. Consequently, students expressed dissatisfaction with how their lecturers navigated these platforms. Additionally, some students noted that lecturers did not effectively utilise the new features available in online teaching. For instance, rather than relying solely on text, lecturers could have incorporated both notes and graphics to support students who learn better with visual aids. This concern aligns with Eshet-Alkalai's (2004) definition of reproduction literacy, as some students felt that their lecturers were unable to innovatively adapt their existing pedagogical practices.

Instead of solely using traditional notes, lecturers could have enhanced their presentations by integrating graphics to create a more effective online learning experience. Moreover, students expressed concerns about their lecturers' lack of engagement with artificial intelligence (AI). Some believed that AI could help reduce lecturers' workloads and improve the online learning experience. This concept is supported by Ng et al. (2021), who argued that AI is increasingly becoming part of everyday life, necessitating a new set of digital literacy skills. In this study, it is evident that some students felt that their lecturers' failure to use AI during online learning hindered their performance.

The perceptions regarding lecturers' ability to facilitate sufficient online interactions between themselves and students revealed that many undergraduates were dissatisfied with how well their lecturers created interactive environments during online learning. In contrast, postgraduate students, as well as those who had experience in both undergraduate and postgraduate studies, expressed satisfaction with their lecturers' performance in this area. A deeper investigation into these differing perceptions showed that many students came from quintile 1-3 high schools, where they experienced close interactions with teachers and lesser exposure to digital learning. However, due to their varying levels of study, students now faced different learning needs. Specifically, some postgraduate students have developed independence and self-discipline over time, while many

undergraduates still require personalised feedback and engagement with their lecturers. Moreover, students indicated that their experiences with load shedding and poor internet connections significantly affected their ability to interact with their lecturers during online classes. Similar to findings from the studies of Xulu (2023) and Akinlabi (2023), students in this study also reported issues such as unreliable network coverage and power outages.

What is particularly interesting about these findings is the intersectionality of various socio-economic factors influencing students' perceptions. Focusing solely on students' high school backgrounds and concluding that this alone shaped their perceptions overlooks the broader context. A more comprehensive understanding emerges when considering how factors such as level of study, diverse learning needs, expectations, access to reliable internet connections, and infrastructural support intersect with students' high school backgrounds.

This study also acknowledges the existence of the digital divide as discussed by Mcwabeni (2024) and Fobosi and Malima (2025). As highlighted in these studies, students from rural and township settings faced internet connectivity issues while at home. However, when they returned to campus, located in a suburban area, they experienced reliable internet coverage. This finding reflects the conclusions of Mcwabeni (2024) and Fobosi and Malima (2025), which indicate that despite the abolition of apartheid, digital inequities continue to disproportionately affect marginalised communities.

When the research examined lecturers' ability to provide academic support and timely solutions during online learning, it was found that students had varying perceptions. Most undergraduates felt that some lecturers were passive, negligent, and lacked a sense of urgency. In contrast, postgraduates expressed satisfaction with their lecturers' efforts. Some undergraduates indicated that their feelings stemmed from a desire for closer interaction with lecturers and an expectation for them to be more available in addressing challenges, such as how to keep up with coursework in light of internet connectivity issues. Postgraduates, on the other hand, noted that they are less dependent on lecturers and appreciate the flexibility that online learning offers. Again, we see the intersection of academic level and students’ needs and expectations.

Students were very appreciative of the data provided, which aligned with the findings of Xulu (2023). However, they also expressed that despite this appreciation, poor internet coverage at their homes hindered their experience. They reported a much better experience when restrictions were eased and they had access to university facilities. This desire for quality access to digital technologies highlights Van Dijk's (2006) concern about material access. Despite having data bundles, students experienced poor internet speeds due to their geographical locations, which affected their ability to connect with live lecturers, watch pre-recorded lectures, communicate with instructors, and complete online tests and examinations. Many students voiced their frustration over how their internet connection hindered their ability to meet submission deadlines.

Students recommended that lecturers incorporate greater diversity in their teaching approaches by creating both intimate, interactive environments for those who need more support and engagement, as well as providing sufficient distance for students who prefer to learn independently and only require occasional consultations. Additionally, they suggested that lecturers undergo digital and AI training to effectively utilise external online tools like Zoom and Teams, enhancing the online learning experience. Most importantly, students emphasised the need for lecturers to develop innovative digital teaching pedagogies that address the needs of online students. This means prioritising not just curriculum delivery but also catering to the diverse backgrounds of students. They advocated for varied assessment processes to support those who might be excluded due to internet connectivity issues. Furthermore, the use of social media platforms like WhatsApp for online consultations was recommended for students who may feel uncomfortable using Zoom or Microsoft Teams.

4.13 CONCLUSION

This chapter offers a comprehensive overview of the data collected, shedding light on UKZN-P Humanities students' perceptions of their lecturers' readiness for online learning during the Covid-19 pandemic. A detailed analysis of the themes identified in the students' responses revealed a range of perceptions and experiences regarding their lecturers' preparedness to engage in online instruction during this period. When compared to the literature discussed in Chapter Two, the findings of this study provide valuable insights into students' experiences during Covid-19,

particularly within the South African context. Based on the information gathered, it can be concluded that UKZN-P Humanities students had varying expectations, experiences, and perceptions of their lecturers' readiness for online learning. These variations were influenced by the intersection of several socio-economic demographic factors, including the high schools attended, geographic location, level of study, and prior experiences.

CHAPTER FIVE- FINDINGS AND CONCLUSION

5.1 INTRODUCTION

The foundation of this study was to understand the perceptions of UKZN-P Humanities students regarding their lecturers' readiness to transition to online teaching during the Covid-19 pandemic. According to a 2020 study by Mpungose, some lecturers at a South African university struggled to adapt their teaching methods to an online format because many were unprepared for the sudden shift and lacked skills in online pedagogy, which ultimately affected the quality of instruction provided. Therefore, the purpose of this study was to evaluate these findings in relation to the experiences of UKZN-P Humanities students. To achieve this objective, the research explored students' perceptions of their lecturers' readiness to utilise online learning technologies essential for teaching during the pandemic. Additionally, it investigated whether lecturers facilitated effective online interactions with students, provided academic guidance and support during Covid-19, and how in the future lecturers could enhance online teaching practices.

This chapter will describe how the research was carried out and provide the findings. After summarising the themes that emerged, the chapter will reflect on the implications of the findings, as well as present conclusions that answer the research questions. Thereafter, the chapter will end with recommendations for areas that could prove fruitful to future research, and discuss the limitations that the study faced.

5.2 SUMMARY

Existing literature identifies numerous crucial issues that indicate a need for additional study in online learning during the Covid-19 pandemic, particularly in developing countries. The issues that needed to be examined included the efficiency of online learning, the obstacles experienced by both students and lecturers, the digital divide, and digital literacy, particularly in relation to the quick transformation demanded by the Covid-19 pandemic. As highlighted in research by Parker et al. (2020) and Jantjies (2020), the emergence of online learning during the Covid-19 pandemic exacerbated existing educational imbalances in African countries. Furthermore, global concern about the digital divide and digital literacy, particularly in poor nations, has a significant impact

on how online learning is experienced in these countries. According to the studies of Mpungose (2020) and Litchfield et al. (2021), both students and lecturers faced significant barriers to accessing online education due to limited internet connectivity and a lack of digital devices. Taking the existing literature into consideration, this research aimed to evaluate the extent to which lecturers were equipped to teach effectively and efficiently online during Covid-19, as perceived and experienced by students.

Taking a qualitative approach, a total of 34 Humanities students from UKZN-P were sent questionnaires, and their responses were thematically analysed to identify their perceptions. Following this, follow-up interviews were conducted to explore the factors that influenced these perceptions in greater detail. Two focus group interviews were held, one with seven students and the other with six, resulting in a total of thirteen participants. The factors gathered from these interviews were also thematically analysed.

The first research question aimed to explore how students perceived their lecturers' ability to foster sufficient online interaction. The study investigated how lecturers created interactive environments during and after lectures. While most undergraduate students expressed dissatisfaction with their lecturers' performance in this area, postgraduate students and those with overlapping experiences gave more positive feedback. Students highlighted that lecturers' flexibility, approachability, and commitment to inclusivity led to varied experiences. Those who provided positive reviews mentioned that the absence of geographical and time barriers, facilitated by online tools, meant that lecturers were readily available for consultations. Conversely, students who had negative experiences reported that due to internet connectivity issues, they felt lecturers did not adequately

develop strategies for inclusive interaction. These students felt left behind, as those who could connect were able to interact with lecturers while they could not. Additionally, a majority of undergraduate students indicated that they did not perceive their lecturers as approachable during online learning, whereas postgraduate students found lecturers to be approachable. Further investigation into these perceptions revealed that although both undergraduate and postgraduate students shared a common high school experience characterised by teacher-centered learning, their reactions to distant interactions in online learning differed. Postgraduate students, unlike undergraduates, did not require as much intimate interaction with lecturers and were satisfied with the independence provided by online interactions.

The research aimed to explore how students perceived their lecturers' ability to offer academic support during online learning. The findings revealed that while most students were not particularly satisfied with the level of academic support provided by their lecturers and their ability to offer timely solutions, some students held positive views. These students noted that their lecturers were prompt in delivering support and solutions. This perspective contrasted with those who felt that the lecturers lacked proactivity and urgency when it came to providing effective academic assistance. Undergraduate students, in particular, expressed concerns about their lecturers' passive approach to the challenges they were facing. They indicated that lecturers seemed focused solely on delivering the curriculum, neglecting to address issues that impacted students' online performance. In contrast, some students expressed gratitude for the lecturers' ability to promptly provide solutions to the challenges they encountered. Additionally, a notable difference emerged between academic levels and learning preferences. Most postgraduate students felt that their lecturers did a satisfactory job in providing supervision, while undergraduate students felt that lecturers failed to offer the intimate engagement and personalised support they needed.

The research also aimed to explore students' experiences with online assessments, tests, and examinations. There were mixed perceptions regarding lecturers' ability to promote inclusivity in online exams. Many students expressed concerns about lecturers’ capacity to accommodate those who faced internet connectivity issues and load shedding. While they acknowledged that these challenges were beyond the lecturers' control, they suggested that lecturers could have developed strategies to assist students encountering such difficulties. One suggestion was to offer students with connectivity issues the option to submit assignments instead of requiring them to complete

online tests. Students argued that being required to take online tests under tight deadlines, while dealing with connectivity problems, caused them stress and anxiety about their academic performance. They would have appreciated it if lecturers provided as many alternatives as possible to ensure inclusivity.

The last research question sought to understand how Humanities students at UKZN-P believe lecturers can improve online teaching in the future. The responses indicated a range of suggestions for enhancing online learning. Central to these recommendations was the idea that lecturers should receive training to be better prepared. Students also emphasised the importance of employing diverse teaching methods, offering various learning options, and utilising multiple online tools. Specifically, students suggested that lecturers should develop strategies that accommodate a diverse student body rather than relying on uniform approaches that may fail to support disadvantaged students. This entails creating lecturer-centered strategies that also cater to the needs of independent learners. Furthermore, students stressed the necessity for lecturers to be more available and engaging. Interestingly, they highlighted the importance of innovation through proper digital training, particularly in light of the ongoing evolution of digital technologies and the increasing presence of AI.

5.3 IMPLICATIONS OF FINDINGS

The findings of this research indicate that UKZN-P Humanities students had both positive and negative perceptions regarding their lecturers' readiness for online learning. It was found that socio-economic factors, such as students' high school backgrounds, geographic locations, expectations, preferences, and levels of study, singularly influenced how they perceived their lecturers' ability to teach effectively online. By adopting a more intersectional approach that examines these factors collectively, the research highlighted the diversity of experiences and preferences within the UKZN-P Humanities cohort. This approach provides a clearer understanding of the digital divide and illustrates how lecturers' performance was differentially perceived by various segments of UKZN-P Humanities students.

The study has provided recommendations on how UKZN-P Humanities lecturers can enhance future online interactions, improve the facilitation of examinations, increase the level of academic support, and offer timely solutions online, as perceived by students. This research deliberately

sought feedback from students rather than lecturers because students are the primary consumers of education and spend the most time observing their instructors in action. Therefore, their insights into the strengths and weaknesses of lecturers' online teaching performance during the pandemic will provide invaluable information about which teaching strategies are effective and which ones fall short from a student's perspective. Understanding these perceptions is essential for creating truly effective, engaging, and supportive educational environments that lead to improved student outcomes in future online learning settings.

5.4 RECOMMENDATIONS

This study provided valuable insights into the perceptions of UKZN-P Humanities students regarding their lecturers' readiness to engage in online learning during the pandemic. However, these findings may not be directly applicable to other UKZN Colleges due to variations in student demographics, resources, academic programs, and regional contexts. Therefore, it would be worthwhile to explore these findings in other Colleges and campuses to identify commonalities and differences across various disciplines. Another significant discovery in this research was that the level of study influenced students' perceptions of the pedagogies employed by lecturers during online learning. Consequently, future research should aim to identify the specific online pedagogies that would be most effective for each academic level within UKZN-P Humanities. Additionally, some students suggested that lecturers should innovatively incorporate AI into their teaching to enhance the learning experience. Therefore, it would be interesting to investigate the perceptions of UKZN-P Humanities lecturers regarding the use of AI in teaching, and how (if at all) it is being used. Furthermore, students residing in rural areas and townships experienced a digital disconnect. As there are numerous initiatives aimed at bridging the digital divide in South African higher education institutions, future research could evaluate the effectiveness of these initiatives from the students' perspectives.

5.5 LIMITATIONS

The first limitation of this study is the sample size. Although sampling 34 UKZN-P Humanities students allowed the researcher to effectively analyse the data and provide insights about the

participants, this number is too small to generalize the findings to the entire UKZN-P Humanities cohort. Therefore, future research that seeks to investigate students' perceptions within a specific college should consider increasing the sample size to enable broader conclusions.

Another limitation of this study is that participants were asked to recall past experiences, which may have led to inaccuracies due to the limitations of memory. Some participants expressed difficulty in remembering their experiences clearly. The study encountered delays stemming from the ethical clearance process and the scheduling of focus group interviews, as many participants had conflicting schedules. Therefore, future researchers are encouraged to initiate the ethical clearance process as early as possible. To facilitate a more cohesive arrangement of focus groups, researchers should consider providing a wide range of options for meeting times and dates (e.g., early mornings, lunch breaks, or weekends) over several days, rather than restricting it to just one or two time slots.

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APPENDIX A – Demographic Details

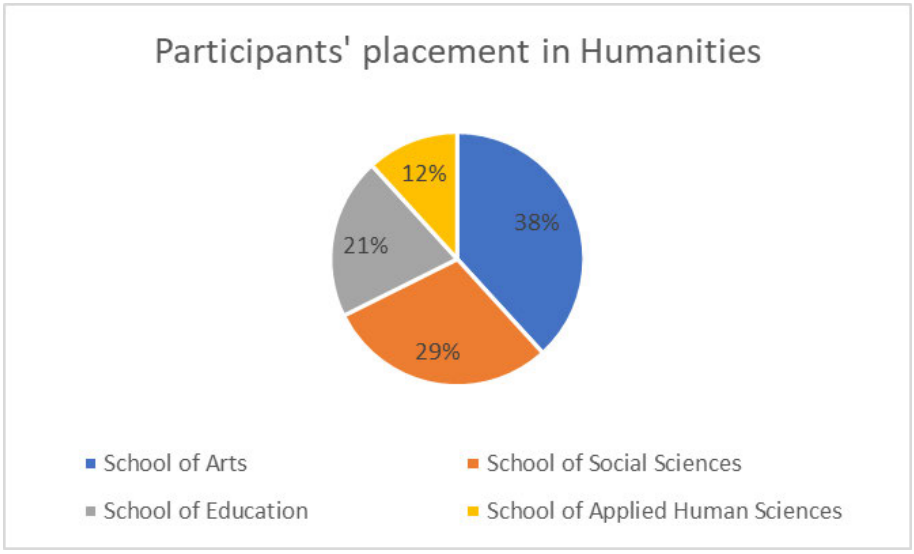


Figure 1

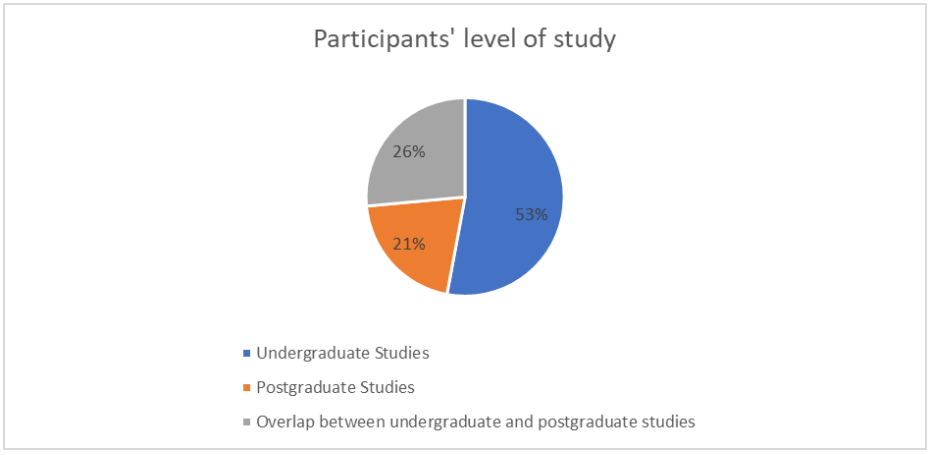


Figure 2

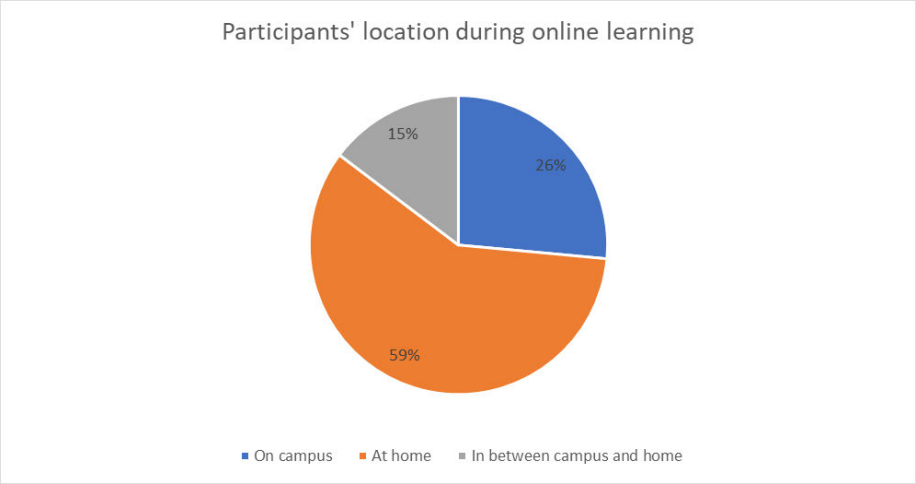
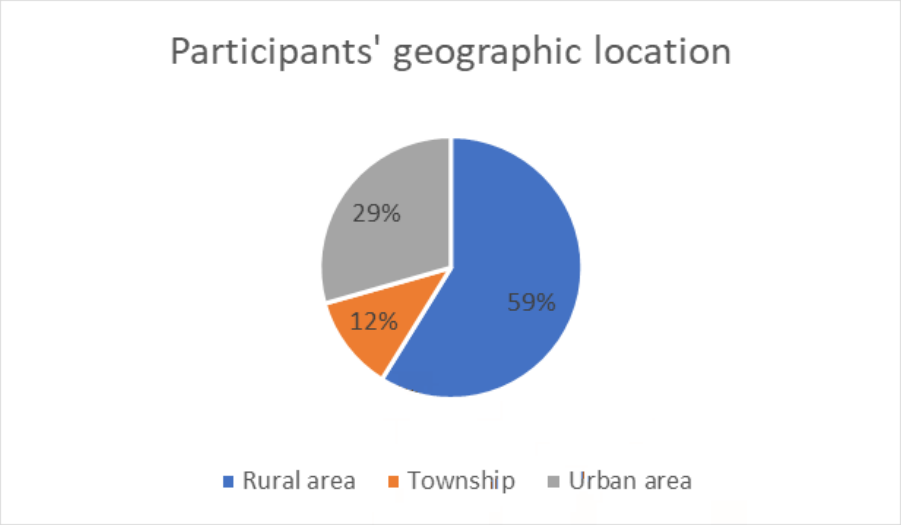


Figure 3



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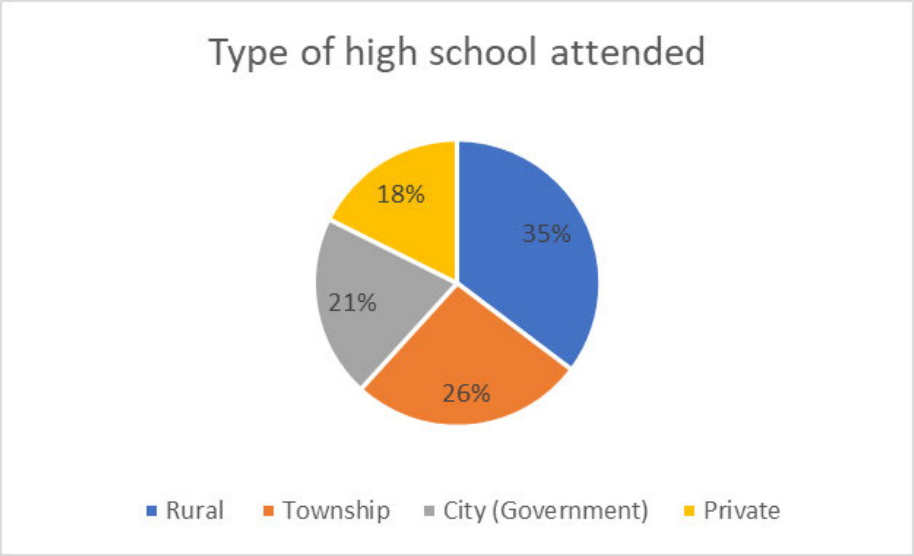

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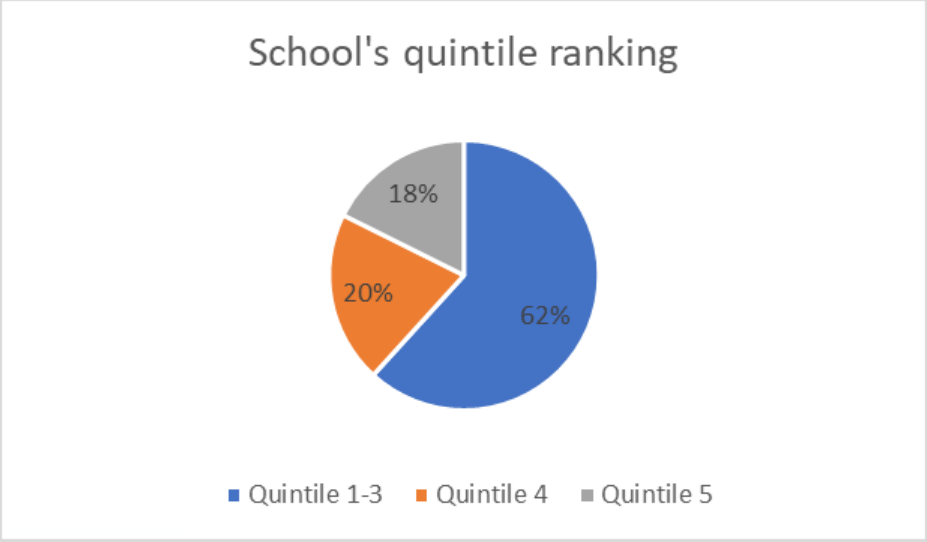
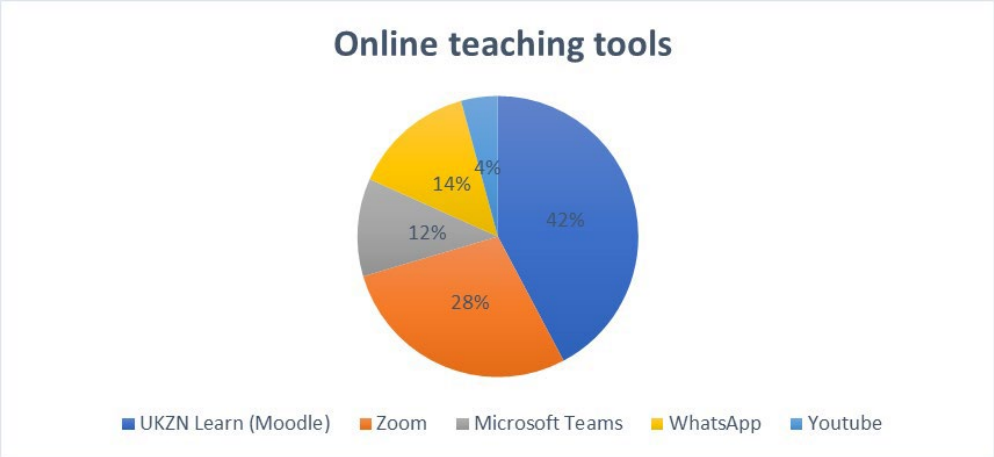


Figure 6

APPENDIX B – Online Tools



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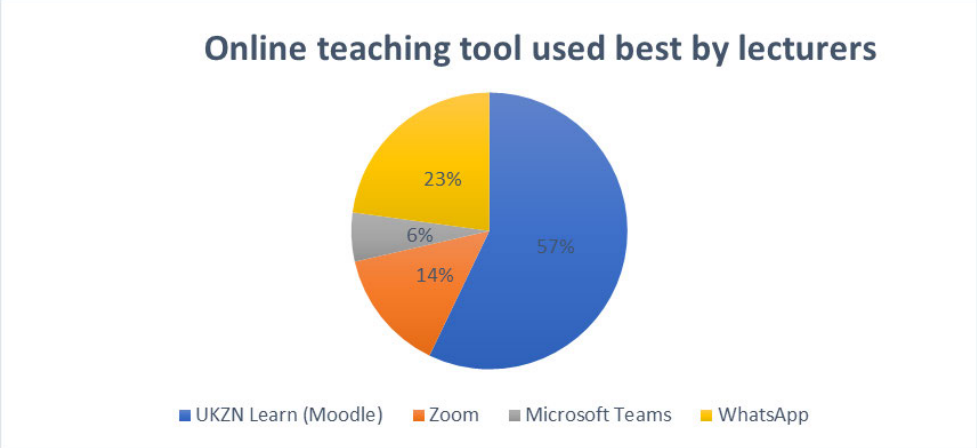

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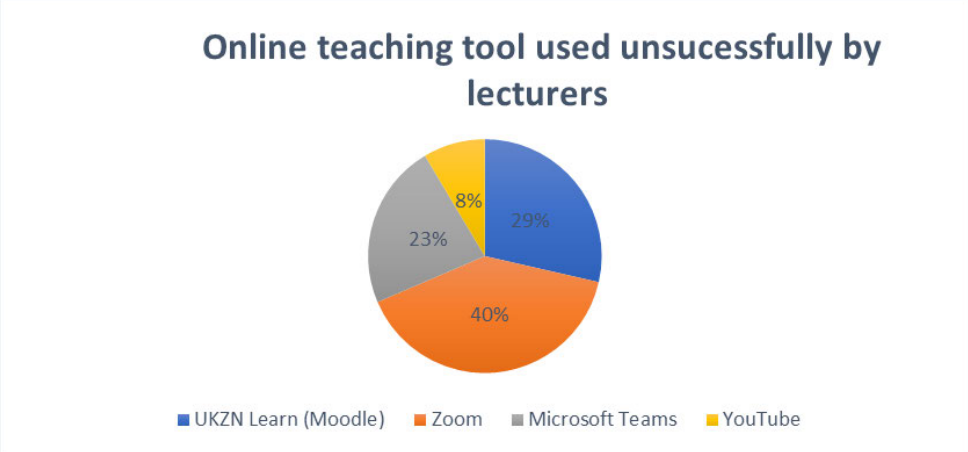

Figure 9

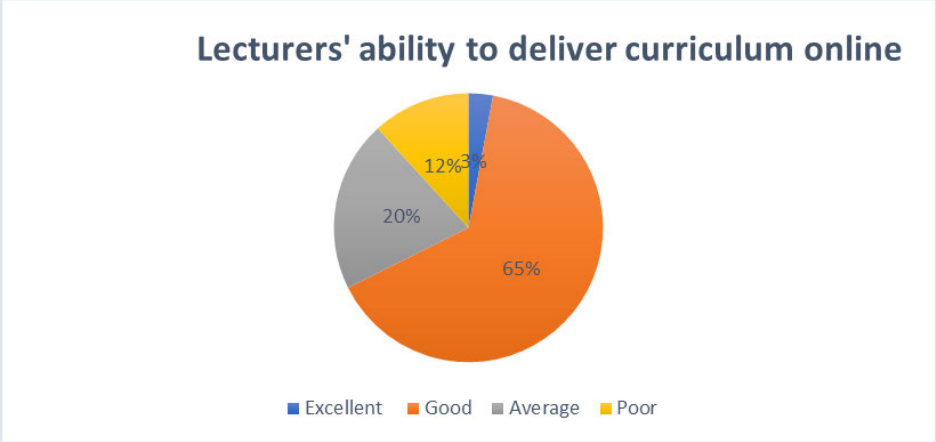

Figure 10

APPENDIX C – Lecturer Performance

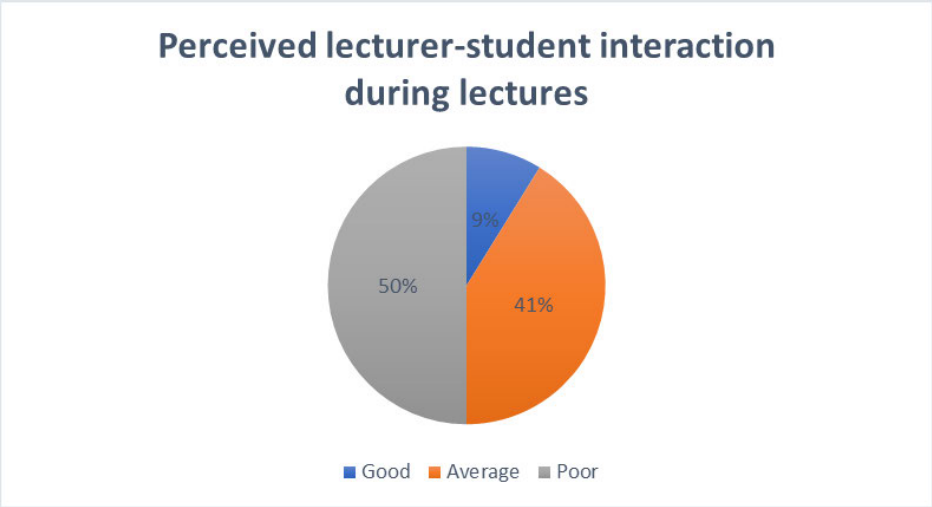

Figure 11

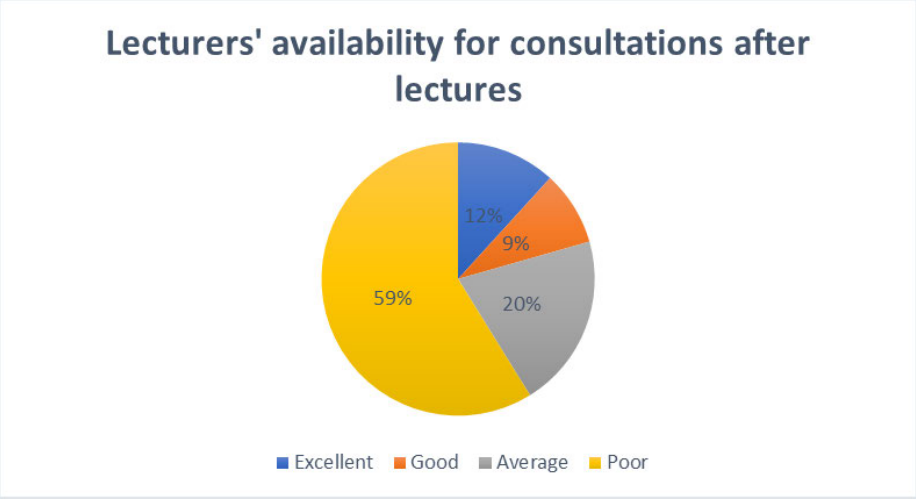

Figure 12

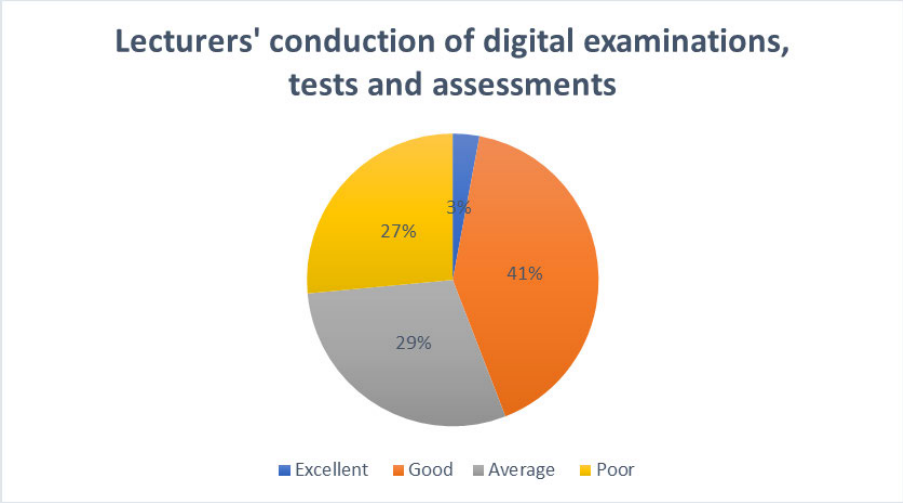

Figure 13

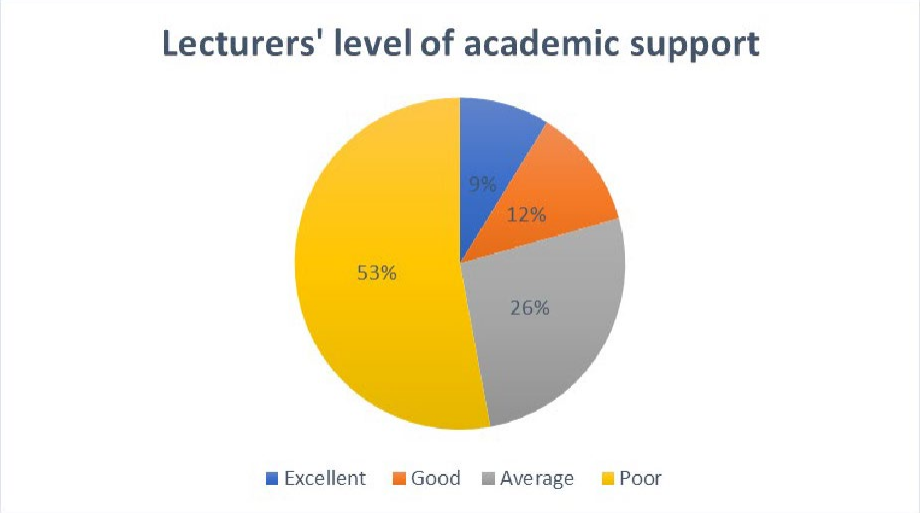

Figure 14

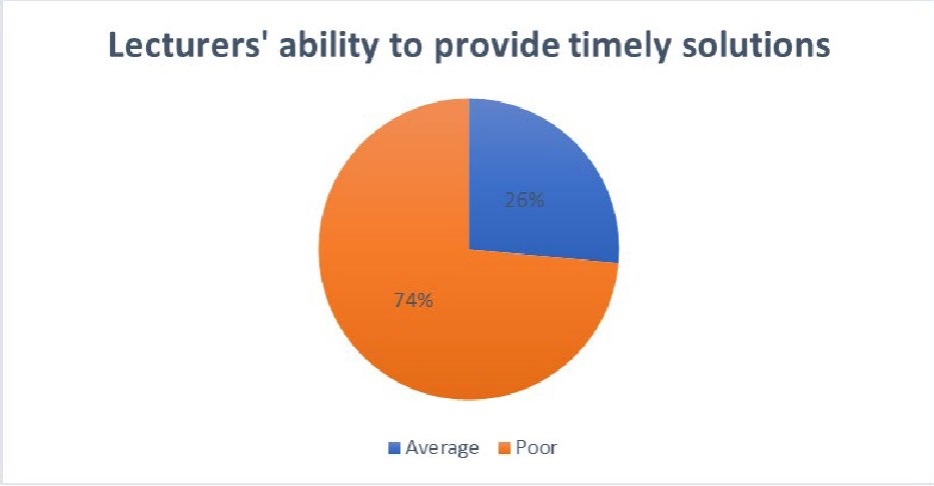

Figure 15

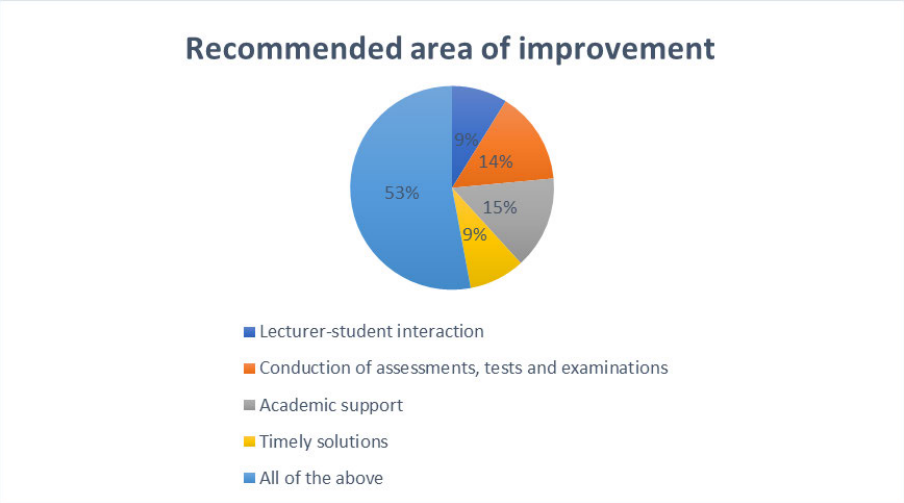

Figure 16

Appendix D – Informed Consent

UNIVERSITY OF
KWAZULU-NATAL

School of Arts
Private Bag X01, Scottsville Pietermaritzburg 3209
Phone: _____
Email: _____

Date:

Dear Student

My name is Sqedile I Mbambo from the Media and Cultural Studies Department on the Pietermaritzburg campus of the University of KwaZulu-Natal

You are being invited to consider participating in a study for my Masters. The aim and purpose of this research is to understand how Humanities students in Pietermaritzburg perceived their lecturers' performance and preparedness for online learning. The study is expected to enroll 34 students across the Humanities to take part in surveys and focus groups. The duration of your participation if you choose to enroll and remain in the study is expected to be no longer than two months.

I will not force you to engage in anything that you are uncomfortable with and I offer you the option of withdrawing from the project at any time with a full promise of confidentiality regarding whatever information you have contributed. You will not be forced to answer any questions against your will.

Every effort will be made to ensure your confidentiality is protected and no identifying information will be used in the final project without your express prior consent. Once the research is complete, all notes and transcripts will be destroyed. You will be given full access to the final project to assess the final outcomes of the research.

We hope that the study will provide a future benefit for the students and the institution, and provide insight into how students' online learning experience can be improved moving forward.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number_____).

In the event of any problems or concerns/questions you may contact the researcher as per the details in the letterhead of this document, their supervisor, Dr Sandra Pitcher

(pitcher@ukzn.ac.za) or the UKZN Humanities and Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES and SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557- Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

CONSENT (Edit as required)

I _____ have been informed about the study entitled _____.

I understand the purpose and procedures of the study.

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

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

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

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

HUMANITIES and SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000

KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557 - Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Additional consent, where applicable

I hereby provide consent to:

Audio-record my interview / focus group discussion YES / NO
Video-record my interview / focus group discussion YES / NO

_____ _____

Signature of Participant **Date**

Appendix E – Survey Questions

Section A – General Information

Please tick the box which applies to you:

1. Which UKZN-P Humanities school did you fall under between 2020-2022 academic years?

   □ School of Arts

   □ School of Social Sciences

   □ School of Applied Human Applied Sciences

   □ School of Education

   □ School of Religion, Philosophy and Classics

   □ School of Built Environment and Development Studies

2. What was your level of study during the aforementioned academic years?
   □ Undergraduate

   □ Postgraduate

   □ Overlap between undergraduate and postgraduate

3. Where were you based during the aforementioned academic years?
   □ On campus

   □ At home

   □ In between campus and home

4. If you did not select campus in Q3 please name your area of residence, city, and province.
   _____

5. Type of high school attended:
   □ Rural □ Township □ City (Government) □ Private □ Homeschool

6. Please provide the name of your high school

Section B – Lecturers' usage of digital tools

On a rating scale of 1-5, where 1 is poor and 5 is excellent, please rate how useful you found the following services offered by UKZN for online learning.

7. Which online tools did your lecturers make most use of to teach online? Select all that apply
   □ UKZN Learn (Moodle)

   □ Microsoft Teams

   □ Zoom

   □ Email

   □ Social media

   □ Other (please specify): _____

8. Which online tool, do you think, was used best by your lecturers?
   □ UKZN Learn (Moodle)

   □ Microsoft Teams

   □ Zoom

   □ Email

   □ Social media

   □ Other (please specify): _____

   2.1 Please explain your answer in Q8 above.

9. Which online tool, do you think, was used worst by your lecturers?

□ UKZN Learn (Moodle)

□ Microsoft Teams

□ Zoom

□ Email

□ Social media

□ Other (please specify): _____

3.1 Please explain your answer in Q9 above.

_____
_____
_____

10. On a rating scale of 1-5, where 1 is very poor and 5 is excellent, how would you rate the majority of your lecturers' ability to successfully deliver their curriculum online?

1. Very Poor 2. Poor 3. Average 4. Good 5. Excellent

4.1 please explain your answer in Q10 above.

_____
_____
_____

Section C – Lecturer-student interaction and engagement

11. On a rating scale of 1-5, where 1 is very poor and 5 is excellent, how would you rate the majority of your lecturers' interaction with students during online lectures.

1. Very Poor 2. Poor 3. Average 4. Good 5. Excellent

a. Please explain your answer in Q11 above.

_____
_____
_____

12. On a rating scale of 1-5, where 1 is very poor and 5 is excellent, how would you rate the majority of your lecturers' availability for consultation outside of lectures.

1. Very Poor 2. Poor 3. Average 4. Good 5. Excellent

6.1 Please explain your answer in Q12 above.

_____
_____
_____

Section D – Digital examinations and support

13. On a rating scale of 1-5, where 1 is very poor and 5 is excellent, how would you rate your lecturers' ability to effectively and efficiently were conduct assessments, tests and examination online?

1. Very Poor 2. Poor 3. Average 4. Good 5. Excellent

7.1 Please explain your answer in Q13 above.

_____
_____
_____

14. On a rating scale of 1-5, where 1 is very poor and 5 is excellent, how would you rate your lecturers' ability to offer you academic guidance and support during online learning?

1. Very Poor 2. Poor 3. Average 4. Good 5. Excellent

8.1 Please explain your answer in Q14 above.

_____
_____
_____

15. On a rating scale of 1-5, where 1 is very poor and 5 is excellent, how would you rate your lecturers' ability to find timely and effective solutions during online learning?

1. Very Poor 2. Poor 3. Average 4. Good 5. Excellent

9.1 Please explain your answer in Q15 above.

_____
_____
_____

Section E – Recommendations

16. In future, which area do you think lecturers could improve when it comes to online teaching your lecturers to improve the most in?

A. Facilitation of lecturer-student interaction
B. Conduction of assessments, tests and examinations
C. Academic support offered
D. Ability to offer timely solutions
E. All of the above

10.1 Please explain your answer in Q16 above.

_____
_____
_____
_____

17. What are your recommendations for future online learning?

_____
_____
_____
_____

Appendix F – Focus Group Questions

UNIVERSITY OF
KWAZULU-NATAL

Standard focus-group questions

1. How would you describe the differences between your high school experience and your online learning experience in university?

2. Did your high school have any computer labs? How do you think having prior experience with computers in high school impacted your overall experience with online learning?

3. What were your expectations of your lecturers during online learning?

4. Do you think your geographic location influenced your online learning experience? If so, why?

5. Based on your perceptions of your lecturers' performance during COVID-19, what do you think they could improve for the future?

Appendix G – Ethical Clearance

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

01 November 2024

Sqedile Imperitive Mbambo (218020100)
School of Arts
Pietermaritzburg Campus

Dear SI Mbambo,

Protocol reference number: HSSREC/00005259/2023
Project title: What about online learning? University of KwaZulu- Natal students' perceptions about staff readiness to take on online learning during corona virus pandemic

Approval Notification – Recertification Application

Your request for Recertification dated 29 October 2024 was received.

This letter confirms that you have been granted Recertification Approval for a period of one year from the date of this letter. This approval is based strictly on the research protocol submitted and approved in 2023.

Any alteration s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study must be reviewed and approved through the amendment /modification prior to its implementation. Please quote the above reference number for all queries relating to this study.

PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years

Incidents of adverse events and serious adverse events (AEs and SAEs) should be reported in writing to HSSREC, the study sponsors, and any regulatory authority (where appropriate), within 7 working days of the occurrence for local sites and 14 days for all other South African sites.

This approval is valid for one year: 01 November 2025.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

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

Yours sincerely,

Professor Dipane Hlalele (Chair) /nng