

Aluta Continua! Digital Divide Experiences of South African Township High School Learners During COVID-19 Hard Lockdown



By

Akhona Mxatule [MXTAKH001]

This Dissertation is Submitted for The Partial Satisfaction of The

Requirements of the Degree of

MPHIL DEVELOPMENT STUDIES

Department Of Sociology

University Of Cape Town

Supervisor: Jacques De Wet

2024

Mind the



Gap

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

Declaration

I know that plagiarism is wrong and that I cannot use another author's work and pretend that it is my own. This thesis is part of my own work.

I used the UCT Author-Date [Harvard] (2022) Referencing Style for in-text citations and the reference list.

This work has not previously been submitted in whole or in part for the award of any degree.

Signed by candidate

Akhona Mxatule: _____ Date: _10 February 2024_

Dedication

This thesis is dedicated to marginalized students affected by the digital divide and various socioeconomic injustices. This is a testament to their unspoken plea for equitable education. Additionally, I extend this dedication to committed agents of positive change who are tirelessly striving to narrow the digital divide and address educational inequalities that impede the youth's capabilities to fulfil their aspirations and unlock their full potential.

Acknowledgements

Doing my MPhil after five years in the corporate world has been quite challenging, and I could not have made it without God's grace that sustained me—all the glory and honour to my Lord and Saviour, Jesus Christ.

This journey was shaped by a mosaic network of support—from friends and family to professional and academic circles, affirming the profound truth of "umntu ngumntu ngabantu."

My family, especially my mother and father, is a powerful source of inspiration in my life. From my early age to young adulthood, I observed you waking up every morning, hustling for us your (seven) children, and never giving up despite your socioeconomic disadvantages. You have instilled in me that "hustling" and resilient spirit to continue breaking generational curses of poverty and illiteracy. At times, you do not understand my love for education and the career path I have chosen, but I have felt and seen your unconditional love, prayers, and support, which were my motivation throughout my journey. Ndiyabulela kwaye ndiyanithanda.

A heavenly appreciation and love to my late friend and soul sister, Salndave Bobo Skosana, my source of academic inspiration. Your dedication to completing your PhD in Molecular and Cell Biology has never ceased to inspire me. The long days and nights in the lab were a testament to your resilient character and your intentional commitment to creating positive change in your field of study. After hearing the sad news of your tragic passing, I was tempted to abort my dream of pursuing my Masters, but your last words of encouragement and stamp of approval motivated me to pursue it despite the open wound

of grief. This one is for you, my friend. You may not be physically with me, but I feel your presence spiritually. Thank you for your unconditional support.

Circling out of my home base to my life as a student, I would like to extend my appreciation and heartfelt gratitude to my supervisor Dr Jacques de Wet. Since the beginning of our journey in my Honours programme, you have been a God-sent and one of the most important people in my life. Your unwavering, high-quality support and guidance, your faith in me, and my abilities have been a constant blessing for me. There were times when life was tumultuous, and my academic work suffered, but I highly appreciated your ability to create emotionally and psychologically safe spaces for me to speak about my general life issues. Ndiyabulela Mfundisi, uThixo akusikelele.

Robin Bredeveld, Tavonga Mazhetese, and Justin Verity, whom I have known for less than two years, have become some of the most important people in my life. In different ways, you have been a blessing to me on my MPhil journey. You have supported me academically and in my personal life. Thank you, beloveds!

Dr Darlington Sibanda, my leader, my mentor. I highly appreciate you for your unwavering support and faith in me from our Khayelitsha days to my academic journey at UCT. Thank you for your leadership and being a comrade in youth development.

Lastly, I thank my former employer, Luno, especially Marnitz Van Heerden and André Wessels, for making this MPhil financially feasible. Your investments will go a long way, especially for young people from disadvantaged backgrounds. I am on a mission as an agent of positive change to make you proud.

Abstract

This research emphasises that the digital divide is a significant human development issue. During the COVID-19 pandemic, the stringent lockdown measures accentuated the challenges faced by many underserved learners in transitioning to remote education due to limited access to digital resources and reliable internet. This study investigated how the COVID-19 hard lockdown period magnified the digital divide experiences of a group of high school learners from Cape Town's Khayelitsha Township. The investigation further revealed the extent to which learners from working-class households could overcome challenges they faced in the context of their education. Understanding the structural problems and the learners' agency from their perspective provides educators and policymakers with valuable insights, which can inform future interventions to address the digital divide.

Amartya Sen's Capability Approach facilitated my people-centred examination of the digital divide. Sen's theoretical framework helped reveal that while access to Information Communication Technologies (ICTs) is a crucial step, it alone is insufficient for development. Additionally, this study demonstrates that the capacity to effectively utilise ICTs and transform information into actionable knowledge for comprehensive development is paramount. Therefore, the digital divide extends beyond mere access and literacy, representing a broader developmental challenge that deprives many under-resourced communities of essential capabilities in a world that is increasingly dominated by ICTs.

Utilizing a single case study approach, this research interrogates the digital divide as a human development issue. Data collection methods involved documentary analysis, a key informant interview, and a focus group discussion with six high school learners from a Khayelitsha township school. Miles and Huberman's thematic coding approach was used in the data analysis. The findings reveal some contextual nuances in the learners' experiences of unequal access to devices and the Internet, affordability disparities, and varying levels of ICT usage. This study underscores the vulnerabilities of marginalized learners and identifies opportunities that learners create for themselves within the digital divide. This research provides insights into the multifaceted nature of the digital divide within the educational landscape. The study further emphasizes the urgent need for collaborative and coordinated efforts from among stakeholders, including the Department of Basic Education, teachers, learners, parents, the private sector, and civil society, to implement people-centred and tailored intervention strategies informed by a nuanced understanding of the digital divide.

Key Words: Digital Divide • Capability Approach • Under-resourced Township schools • COVID-19

Glossary of Terms

Affordability: Your Dictionary (2023) defines it as the cost of the item purchased in comparison to the amount that the purchaser can pay. Digital divide scholars consider affordability as one of the major components of the digital divide and a barrier to Internet adoption in both developed and developing countries (Munga, 2022). In this thesis, affordability will be referred to as the ability of learners and their parents to pay for the costs of digital devices such as smartphones, laptops, and interconnected networks without encountering financial difficulties upon payment.

Access: Van Dijk (2017, p.2) defines access as typically the physical ability to use Information Communication Technologies (ICTs) like personal computers and interconnected networks. In contrast, this thesis's definition of access emphasizes "consistently available access" whereby learners have the capability to use consistently available, cost-effective, and reliable ICTs like the Internet and digital devices.

COVID-19: COVID-19 refers to the coronavirus that is linked to the respiratory syndrome coronavirus-2 (SARS-COV-2) (Mhlanga and Moloji, 2020). The COVID-19 pandemic has had a devastating impact on all parts of the world, especially vulnerable groups such as people living with disabilities, the elderly, learners, and the poor (Office of the High Commissioner Human Rights Report, 2021). This research study will focus on the impact of COVID-19 on high school learners.

Development Outcomes: The concept of "Development Outcomes," also referred to as "Valuable Outcomes" according to Sen (1999, p.18), pertains to an individual's accomplishment of their desired results across different areas of their lives, in line with the kind of life they consider valuable. This definition originates from Sen's (1999) idea of "development as freedom," where he argues that "having greater freedom to pursue valued activities is (1) inherently significant for one's overall freedom, and (2) crucial in facilitating the attainment of valuable outcomes." Therefore, within the scope of this thesis, Development Outcomes denote an individual's capacity to attain valuable outcomes through the accessibility, affordability, and utilisation of ICTs.

Digital divide: The concept of the “digital divide” is discussed in greater detail elsewhere. In summary, it refers to gaps or inequalities in access to and use of information technologies (Bornman, 2015). In terms of this study, the digital divide is defined as a multifaceted phenomenon that includes factors such as access, affordability, quality, and relevance (Muller and Aguiar, 2022; Thomas and Parayil, 2008). Thomas and Parayil (2008, p.410) add that the digital divide is “part of a larger developmental problem in which vast sections of the world’s population are deprived of these capabilities to use ICTs.”

Considering the aforementioned, this study will look at the following aspects of the digital divide in the education sector:

- The high school learners’ access to computers and Internet,
- Their affordability to access information,
- Their ability to use ICTs,
- And the quality of their Internet connection. This will determine whether they were able to participate in online learning during the COVID-19 hard lockdown and if they could access online learning opportunities after the lockdown.

Digital Literacy: The concept of digital literacy is multifaceted, encompassing various definitions and meanings. This thesis therefore employs the concept of "Digital Literacy" within the framework of the Capabilities Approach. As such, it embraces the definition of Digital Literacy put forth by the American Library Association's Digital Literacy Taskforce (2012), which emphasises an individual's capacity not only to access and navigate Information and Communication Technologies (ICTs), but also to utilise them to seek, evaluate, generate, and disseminate information, necessitating both cognitive and technical proficiencies.

Furthermore, as stated by the American Library Association's Digital Literacy Taskforce (2012), a digitally literate individual is someone who:

- Possesses a wide range of technical and cognitive skills necessary to locate, comprehend, assess, generate, and convey digital information in various formats.

- Can adeptly utilise different technologies to access information, analyse findings, and assess the credibility of said information.
- Recognises the correlation between technology, lifelong learning, personal privacy, and responsible management of information.
- Utilises these skills and appropriate technology to communicate and collaborate with peers, colleagues, family, and occasionally the public.
- Actively engages in civic society and contributes to a well-informed, engaged community using these skills.

Essential workers: During the COVID-19 period, all essential workers were employees who were deemed vital for the core functioning of the economy and the rest of society (Blee and Taylor, 2002; Meyerhofer and Koebe, 2022). These workers included medical staff such as doctors and nurses, and retail workers in the food industry including cashiers, general supermarkets, and fast-food workers.

Hard lockdown: To contain the spread of the coronavirus, governments implemented strategies such as isolating, social distancing, testing, and quarantining (Staunton et al., 2020, p. 3). Within this context the term “COVID-19 hard lockdown” emerged. This was the period during which only essential services were open to the public, and citizens’ social activities outside their homes were restricted according to levels of severity (Kabiraj *et al.*, 2020, p1). President Ramaphosa declared a national state of disaster in South Africa on 16 March 2020. The government implemented regulatory measures to contain the spread of COVID-19. Various alert levels determined the level of restriction and were applied during the national state of disaster. Below are the different alert levels used by the South African government and their meanings:

- a) “Alert Level 1” indicates a low COVID-19 spread with a high health system readiness;
- b) “Alert Level 2” indicates a moderate COVID-19 spread with a high health system readiness;
- c) “Alert Level 3” indicates a moderate COVID-19 spread with a moderate health system readiness.

- d) “Alert Level 4” indicates a moderate to high COVID-19 spread with a low to moderate health system readiness;
- e) “Alert Level 5” indicates a high COVID-19 spread with a low health system readiness.

“Hard lockdown” periods were associated with alert levels 4-5 and the Department of Basic Education having to close schools.

Levels of usage: This is a concept used in this thesis to determine how learners use digital devices and the Internet for educational purposes and the development of capabilities. Inversely, the levels of usage reveal what is called the second level of the digital divide, namely, the “usage gap,” a concept coined by Van Dijk (2020). According to Van Dijk (2020, p.98), the usage gap is;

“a systematic use of the Internet [and digital devices] for particular goals by people of higher social class (education, income, and property) and status (social position and cultural resources) as compared to those of lower social class and status. The goals are advanced information, communication and education, work, business and capital-enhancing or career activities (higher social class) as opposed to simple information and communication (chatting or messaging), shopping and entertainment (lower social class)”

This definition is consistent with the goals of this study, which sought to investigate the issue of digital devices and the Internet beyond the simple issues of access, by also looking at usage and affordability. In Van Dijk's definition, I added "and digital devices" to indicate that the levels of usage in this study go beyond just "Internet" usage and include the systematic use of digital devices for higher educational advancement, as opposed to simply scrolling through social media, chatting on WhatsApp, or playing games on a smartphone.

Underdevelopment: The notion of "underdevelopment" as the opposite of "development" has been extensively researched and discussed. Scott and Marshall (2009) have associated this term with dependency theory, using it to depict a state of poverty and economic stagnation prevalent in many Third World Societies. Furthermore,

Scott and Marshall (2009) contend that these societies are not merely lacking in development, but they have failed to achieve the expected levels of development due to exploitation by advanced capitalist states.

In the context of this thesis, underdevelopment simply denotes learners not being adequately equipped with the access, affordability, and necessary knowledge and skills to use ICTs for their overall development, especially in their education.

Under-resourced township school is often associated with the apartheid government's spatial segregation and geopolitical racism. In post-apartheid South Africa, the quality of schools within the public school system continues to be highly stratified according to race, socioeconomic status, and geographic location (Coetzee 2014, p.2). According to Coetzee (2014, p.2), the heterogeneity and stratification of school quality are attributed to two historical policies;

- The policy of geographic segregation of population groups legally imposed by apartheid legislation caused the spatial distribution of households within the country to be racially determined, limiting the economic opportunities available to black adults.
- The policy of institutional segregation under apartheid translated into racially segregated educational departments administering schools.

In this study, the term “township school” is used to refer to schools located in township residential areas among poor communities. Most township schools in working-class communities are public schools that depend primarily on government funding (Papas, 2022). Most township schools are under-resourced and characterized by poor infrastructure, overcrowding, limited access to resources, and insufficient education and resources, such as digital literacy and IT teachers (Vassar, 2016).

List of Abbreviations and Acronyms

| | |
|-----------------|---|
| AUP | Acceptable Use Policy |
| CAQDAS | Computer Assisted Qualitative data analysis software. |
| CAT | Computer Applications Technology |
| COVID-19 | Coronavirus disease 2019 |
| CRQ | Central Research Question |
| DBE | Department of Basic Education |
| DD | Digital Devices |
| EdTech | Educational Technology |
| ICT | Information and Communication Technology |
| IT | Information Technology |
| LAN | Local Area Network |
| NGO | Non-Governmental Organisation |
| PBO | Public Benefit Organisation |
| UCT | University of Cape Town |
| WCED | Western Cape Education Department |
| WIFI | Wireless Fidelity |

List of Figures & Tables

Figure 1: Data collection sources

Figure 2: Learner's alternative strategies to access DD

Figure 3: Learners' levels of digital device use

Figure 4: Learner Recommendations

Figure 5: A Wheel of Policy Instruments to Bridge the Digital Divide

Table 1: Key Informant Recommendations

Table 2: Learners Demographic information

Table of Contents

| | |
|--|----|
| Declaration | i |
| Dedication..... | ii |
| Acknowledgements..... | ii |
| Abstract..... | iv |
| Glossary of Terms..... | v |
| List of Abbreviations and Acronyms..... | x |
| List of Figures & Tables..... | xi |
| Chapter 1 | 1 |
| Introduction and Background to the Study..... | 1 |
| 1. 1. Departure Point | 1 |
| 1.2. Aim, Rationale, and Research Questions..... | 3 |
| 1.3. Chapter Outline | 6 |
| Chapter 2..... | 8 |
| Literature Review | 8 |
| Chapter Introduction..... | 8 |
| 2.1. Understanding the Digital Divide in South Africa | 8 |
| 2.2. COVID-19's Impact on Education and e-Learning..... | 11 |
| Summary | 12 |
| Chapter 3..... | 13 |
| Theoretical Framework..... | 13 |
| Chapter Introduction..... | 13 |
| 3.1. Introducing Sen's Capability Approach..... | 13 |
| 3.2. The Digital Divide According to the Capability Approach | 14 |
| Summary | 15 |
| Chapter 4..... | 17 |
| Methodology and Research Methods | 17 |
| Chapter Introduction..... | 17 |
| 4.1. Research Design..... | 18 |
| 4.2. Sampling..... | 19 |
| 4.3. Data Collection | 20 |
| 4.3.1. Data collection from Data Source 1: Documentary analysis..... | 20 |

| | |
|---|----|
| 4.3.2. Data collection from data source 2: In-depth interview with a key informant from Dream Factory (PBO) | 21 |
| 4.3.3. Data Source 3: In-depth Focus Group Interviews with 6 learners | 22 |
| 4.4. Data Analysis | 23 |
| 4.4.1. Data Reduction | 24 |
| 4.4.2. Data Display | 24 |
| 4.4.3. Conclusion drawing and verification. | 24 |
| 4.4.4. Computer Software for Qualitative Data Analysis | 24 |
| 4.5. Research Ethics | 25 |
| 4.5.1. Voluntary Participation | 25 |
| 4.5.1.1. Informed Consent | 25 |
| 4.5.1.2. Ethics Clearance | 26 |
| Summary | 26 |
| Chapter 5 | 27 |
| Findings from Documentary Analysis | 27 |
| Chapter Introduction | 27 |
| 5.1. Introducing The Department of Basic Education’s White Paper 7 on e-Education (2004) and WCED’s Vision for e-Education (2012) | 27 |
| 5.2. Vulnerabilities and Opportunities in Educational Plans | 28 |
| 5.3. Addressing Infrastructure Gaps | 29 |
| 5.4. Supporting Digital Literacy Needs | 29 |
| 5.5. Provincial Considerations and Strategies | 30 |
| Chapter 6 | 32 |
| Findings: Learners' Experiences of the Digital Divide Before the COVID-19 Hard Lockdown Period | 32 |
| Chapter Introduction | 32 |
| 6.1. Contextual Background of the Participants | 33 |
| 6.2. Access to Digital Devices Before the COVID-19 Hard Lockdown | 34 |
| 6.2.1 Varied Levels of Access: | 34 |
| 6.2.2. NGO Intervention for Access. | 35 |
| 6.2.3. School Access Politics: | 35 |
| 6.2.4. Challenges and Overcoming Access Barriers: | 36 |
| 6.3. Access to Reliable Internet Before the COVID-19 Hard Lockdown | 38 |
| 6.3.1. Internet Access at School | 38 |
| 6.3.2. Internet Access at Home | 39 |

| | |
|--|----|
| 6.3.3. Internet Access in the Community..... | 39 |
| 6.3.4. Challenges | 40 |
| 6.4. Affordability of Digital Devices..... | 41 |
| 6.4.1. Ownership through Gifts or Family Support..... | 41 |
| 6.4.2. Access without Ownership..... | 42 |
| 6.4.3. Smartphone Ownership | 42 |
| 6.4.4. Lack of Ownership | 43 |
| 6.5. Affordability of the Internet | 44 |
| 6.5.1. Parental support to buy Internet data or WIFI..... | 44 |
| 6.5.2. Personal Expenditure for Internet Access | 44 |
| 6.6. Levels of Using Digital Devices and Internet Technologies..... | 47 |
| 6.6.1. Smartphone Technology Proficiency..... | 48 |
| 6.6.2. Challenges in using Digital Devices and the Internet | 49 |
| 6.6.3. Effect of Challenges on Learners' Capabilities | 50 |
| Chapter 7..... | 52 |
| Findings: Learners' Experiences of the Digital Divide During and After the COVID-19 Hard Lockdown Period..... | 52 |
| Chapter Introduction..... | 52 |
| 7.1. Access to Digital Devices and Reliable Internet | 54 |
| 7.2. Continuation of Learning Online..... | 55 |
| 7.3. Alternative means of Online Learning from Home | 55 |
| 7.4. The impact of the hard lockdown | 57 |
| 7.4.1. Learning Gaps and Subject Limitations | 57 |
| 7.4.2. Closure of Internet Cafes, Libraries, and public learning spaces | 57 |
| 7.4.3. Inconsistent Internet Access and Affordability | 58 |
| 7.5. Learning environment at home..... | 59 |
| 7.5.1. Motivation and Resources..... | 59 |
| 7.5.2. Disconnection from Learning Resources: Lack of Awareness..... | 59 |
| 7.5.3. Challenges in Creating a Conducive Study Space at Home | 59 |
| 7.5.4. Parental Support and Limited Teacher Interaction..... | 60 |
| 7.5.5. Distractions and Difficulties: Navigating the Learning Environment at Home | 61 |
| 7.5.6. Limited Access to Educational Programmes at Home | 61 |
| 7.5.7. Sibling Distractions during Lockdown..... | 62 |
| 7.6. Coping Strategies During the COVID-19 Lockdown: Navigating the Digital Divide | 62 |

| | |
|---|-----|
| 7.7. The Impact of the Digital Divide on Academic Performance during the COVID-19 Hard Lockdown | 64 |
| 7.7.1. Identifying Learning Gaps Post-Lockdown | 64 |
| 7.7.2. Inability to Catch Up on Learning Gaps | 65 |
| 7.7.3. Teachers' Struggles and Learners' Dissatisfaction | 65 |
| 7.7.4. The Silver Lining of DBEs..... | 66 |
| 7.7.5. Persistent Digital Disparities at School..... | 67 |
| 7.7.6. Dominance of Smartphones in Digital Access | 67 |
| 7.7.7. Collective Call for Action: The Learners' Plea | 67 |
| Conclusion | 68 |
| Chapter 8:..... | 70 |
| Discussion | 70 |
| Chapter Introduction..... | 70 |
| Discussion of Selected Themes..... | 70 |
| Affordability and the Digital Divide | 72 |
| Chapter 9: Concluding Remarks..... | 78 |
| References | 82 |
| Appendices..... | 87 |
| Appendix 1: Ethical Clearance | 87 |
| Appendix 2: Consent Forms | 88 |
| Appendix 3: Interview Schedules..... | 93 |
| Appendix 4: Key Informant recommendations..... | 103 |

Chapter 1

Introduction and Background to the Study

1. 1. Departure Point

The digital divide is not only a problem of access and literacy. Thomas and Parayil (2008, p.410) argue that "access to ICTs and access to the information that ICTs provide are necessary to bridge the digital divide, but they are insufficient. More crucial are the capabilities - on the part of the individual and society at large - to use ICTs and convert the information that ICTs provide into useful knowledge. The digital divide is part of a larger developmental problem in which vast sections of the world's population are deprived of these capabilities."

The COVID-19 pandemic significantly highlighted this problem when it disrupted everyone's lives and livelihoods. These disruptions, especially during hard lockdowns, magnified the existing problem of the "digital divide". Simply put, the digital divide refers to the inequality gap between those who have access to Information and Communication Technologies (ICTs) and those who do not (Fuchs & Horak, 2008; Muller & Aguir 2022). However, numerous scholars of the digital divide have argued that the digital divide is multifaceted and goes beyond being an issue of access to ICTs. The digital divide is also deeply rooted in issues of affordability, poor service, security, and digital literacy (Muller & Aguir, 2022).

The problem of the digital divide existed before the COVID-19 pandemic. However, during the COVID lockdown (alert levels 4 and 5) in South Africa from 27 March 2020 until 21 July 2021, experiences of the digital divide became far starker. Studying these experiences under extreme conditions revealed the nature of the digital divide more clearly.

In recent years, the digital divide experienced by school students has become topical, partly because the South African government and non-governmental organizations have been drawing attention to the need for ICT education as part of the school curriculum (Meyer and Gent, 2016, p.2). The main initiatives include the following:

- South Africa's 2030 National Development Plan (NDP)
- Department of Education's White Paper on e-Education (2004)
- The United Nations Educational, Scientific and Cultural Organisation (UNESCO)' Information and Communication Tools Competency Framework for Teachers (ICT-CFT) (2011).
- The South African Government's Operation Phakisa Education (2015) which focused on connectivity, devices, teacher professional development, digital content development and distribution and e-administration.

In addition to the above-mentioned steps, President Cyril Ramaphosa has also been publicly urging the state and private sector to accelerate their efforts to make South Africa a globally competitive country in the context of the Fourth Industrial Revolution (Ngqambela, 2022). President Ramaphosa called on all South Africans across all sections to partner with him and the ANC government in bridging the digital divide by improving the quality of education, skills development, and combating digital illiteracy. To this end, he established a task force that identified relevant policies, strategies and plans to make recommendations to the government Ngqambela (2022). However, as Meyer and Gent (2016, p.3) observed, progress in overcoming the digital divide is largely disjointed and slow.

The COVID-19 pandemic has exposed the need for more accelerated and coordinated interventions to address this problem. For the government and private sector to effectively address the issues of the digital divide, they need to better understand the complex and nuanced difficulties that ordinary people face in relation to the digital divide, as well as their resourcefulness. Therefore, there is an urgent need for more research to expose and analyse the various aspects of the digital divide to target well-informed interventions.

This small-scale qualitative study examined the digital divide experiences of a group of high school learners from a township school in Khayelitsha during the COVID-19 hard lockdown. It drew on Sen's (1999) Capability Approach to conceptualise the study and later analysed the data collected from the field. Borrowing from Sen's (1999) language,

this study aimed to examine a group of learners' capabilities to meet their educational needs for digital literacy, especially during the COVID-19 lockdowns.

Having conducted research on a group of high school learners from Khayelitsha regarding their experiences of the digital divide during the COVID-19 pandemic lockdown, profound disparities have been revealed, emphasizing the urgency of research in this domain. The sudden and extensive reliance on digital tools for education, work, and social interaction underscored the existing inequalities. The swift transition to online learning has illuminated educational disparities, with students lacking access to necessary devices facing interruptions in their education. Economic inequalities were magnified as jobs shifted to remote work, disadvantaging those without digital access and hindering economic mobility. Social isolation became more pronounced for those who were unable to connect virtually, thus impacting their mental health. The substantial contrast in experiences by different strata in society during the lockdown highlights the need for targeted policies to bridge the digital divide and address broader socioeconomic challenges. Research during this period provides a crucial understanding of the long-term structural issues contributing to the digital divide, informing sustainable solutions for a more equitable future.

In the remainder of this chapter, I position myself as a researcher, shedding light on the significance of this study and my drive to delve into this research endeavour. Here, I introduce the central research question (CRQ), along with two additional sub-questions, setting the stage for my exploration. Additionally, I provide a brief background to contextualize this study, and I round off the chapter by offering a glimpse of the dissertation's structure.

1.2. Aim, Rationale, and Research Questions

The global lockdowns of 2020-2021 had a profound impact on all sectors, including education. South Africa's public education system, already vulnerable, was particularly affected. Numerous public schools in disadvantaged communities, such as those in Khayelitsha, were ill-equipped to handle the disruptions brought about by the pandemic. These institutions struggled to effectively transition millions of learners to remote learning,

as highlighted in recent studies by Soudien, Reddy, and Harvey (2022) and the State of Broadband Report (2022).

During the lockdown period of 2020-21, schools searched for solutions to minimize the loss of learning time during the peak of the COVID-19 pandemic (Soudien, Reddy, and Harvey, 2022). The digital divide was magnified, and UNICEF (2020) reported that 50% of school-going children in the sub-Saharan region struggled to effectively transition to digital and remote learning. Among these were learners who were previously involved in an educational programme I was running at the time. Many of these learners did not have personal computers at home, Internet connectivity was irregular, and their digital literacy was limited.

Some schoolteachers tried to facilitate lessons through social media platforms such as WhatsApp. However, many learners had no (or extremely limited) access to smartphones, data, or stable access to the Internet. This was further aggravated by some learners residing in informal settlements in Khayelitsha and neighbouring areas. Staying in tiny shacks with their families was not conducive to learning.

On the other hand, learners from advantaged schools and households salvaged learning during these periods by transitioning effectively to online learning methods. These online methods were made possible by their easy access to laptops or desktop computers, Wi-Fi, e-learning resources, paid tutors, extensively engaged teachers and parents or family members with flexible work-from-home jobs that allowed them to work and support their children's home-schooling (Soudien, Reddy, and Harvey, 2022).

This study aims to contribute to the growing body of research done on the topic of the digital divide and its impact on society, especially as a development challenge. The theoretical framework used in this study is Sen's Capability Approach (1999), which highlights the intricate nature of the digital divide and its hindrance to development.

A similar study was conducted by Thomas and Parayil (2008, p.410) when they employed Sen's concepts of the Capability Approach to investigate the links between the digital divide and the larger social and economic divides in India. Their findings prompted the

need for research on the topic in South Africa's public education system. The majority of South African public schools still face the problem of the digital divide. This negatively affects the provision of quality education to all public-school learners. Furthermore, examining the students' experiences not only adds to the data on the digital divide but also helps navigate challenges, particularly in the context of health and socioeconomic crises like COVID-19.

The primary focus of this research is the learners' experiences and their responses to the digital divide in the education sector during the COVID-19 hard lockdown. The inquiry led me to ask the following **central research question** (CRQ):

How did the COVID-19 hard lockdown magnify a Khayelitsha group of high school learners' experiences of the digital divide and reveal the extent to which they were able to overcome these challenges in the context of their education?

Within the parameters of the CRQ and to guide the fieldwork, the following sub-research questions were posed:

Sub-question 1: What were the learners' experiences of the digital divide during the COVID-19 lockdown?

Sub-question 2: What do we learn from the learners' experiences of the digital divide during the COVID-19 lockdown about their vulnerabilities, opportunities, and capabilities?

The first sub-question explores the learner's experiences of the digital divide and informs the first part of the central research question. The second sub-question relates to the second part of the central research question and draws on Amartya Sen's Capability Approach (1999).

There is also a keen interest in the practical application of this study's findings. It would be beneficial to reflect on how insights gathered from the experiences of learners in under-resourced schools during the COVID-19 lockdown could inform government and NGO e-education initiatives. These initiatives aim to bridge the digital divide and associated inequalities.

1.3. Chapter Outline

This dissertation is comprised of nine chapters.

Chapter One: Introduction outlines the aim of the research. The rationale and research questions as well as the background to the inquiry.

Chapter Two: Literature Review gives an overview of research on the topic of the digital divide and the experiences of learners from under-resourced schools during the COVID-19 pandemic.

Chapter Three: Theoretical Framework delves into Sen's Capability Approach as a guiding theoretical framework that has helped answer the second sub-research question.

Chapter Four: Methodology outlines the research methods employed to carry out this study which includes the case study design, data collection strategies, data analysis and ethical considerations taken before the collection of data.

Chapter Five: Findings – Documentary Analysis findings serve as a foundation that gives contextual insights from the Department of Basic Education's White Paper 7 on e-Learning.

Chapter Six: Findings - Learners Digital Divide Experiences Before COVID-19 delves into the key findings about the digital divide experiences of the learners before the COVID-19 lockdown.

Chapter Seven: Findings - Learners Digital Divide Experiences During and After the COVID-19 lockdown discusses the nuanced digital divide experiences, challenges, and coping strategies that learners employed during the hard COVID-19 lockdown. Additionally, the chapter delves into the learners' experiences of the digital divide after the COVID-19 hard lockdown, their reflections, and their recommendations for intervention strategies.

Chapter Eight: Discussion gives a response to the central research question by looking at the bigger picture of the learners' experiences during the COVID-19 pandemic. The

lessons learnt from their experiences can inform the government and the private sector's Educational Technology (EdTech) intervention strategies.

Chapter Nine: Concluding Remarks provides a summary of the research findings, the contribution that this research makes, the lessons learnt during the research process, limitations of the research project and potential areas of further research.

Chapter 2 Literature Review

Chapter Introduction

In this chapter, I explore the multifaceted landscape of the digital divide in South Africa, recognising its evolution in the 21st century within the broader global context. The advent of Information and Communication Technologies (ICTs) has underscored the urgency of unlimited and instant access to information, impacting societal facets. While acknowledging the prevailing discourse on the global digital divide, this literature review delves into the South African context and only draws on literature from South Africa and developing nations emphasising disparities in technology access, connectivity, and digital literacy, particularly in under-resourced schools. The socioeconomic factors contributing to this divide, such as poverty, lack of infrastructure, and educational disparities are scrutinised.

In addition, this chapter delves into the significant impact of the COVID-19 pandemic on the digital exclusion of students, drawing from insightful studies conducted in India, Nigeria, and with a specific focus on South Africa's township schools. It is worth noting that there was limited existing literature on the digital divide experiences of underprivileged high school students during the pandemic, largely due to research resource constraints. This scarcity of literature underscores the importance of conducting a thorough examination of the digital divide, highlighting the necessity for a nuanced understanding and recognising the potential resourcefulness of students in overcoming digital challenges amid the pandemic. Finally, a summary of the empirical studies discussed in this chapter will be provided.

2.1. Understanding the Digital Divide in South Africa

Towards the end of the 20th Century the need for access to information and fast grew significantly (Bornman, 2015). This need to speedily (preferably instantly) access to information has extended out to all spheres of society and has been playing a significant role in the social, political, economic, and cultural life of societies across the globe (Bornman, 2015; Fuchs & Horak, 2008). In the 21st Century, the need for unlimited access

to information quickly has become more sophisticated and associated with the proliferation of Information and Communication Technologies (ICTs) (Bornman, 2015).

Many scholars have agreed that all societies in the world have, in one way or the other, been affected by the changes associated with ICTs. However, access and use of ICTs vary substantially across the world and even within developed countries (Bornman, 2016, p.268).

This brings to the fore discourses about the global digital divide whereby the wealthier societies, especially in the developed parts of the world, have greater access to ICTs than their counterparts in poorer societies (Bornman, 2015; Azubuikea, Adegboyeb & Quadric, 2021). In developing countries, specifically in Africa, the digital divide refers to the disparities in access to technology and the Internet between different socioeconomic groups. Furthermore, the digital divide extends beyond access as it also refers to connectivity and digital literacy (Dhaygude, Lapsiya & Chakraborty, 2022, p.415).

Van Dijk (2020, p.98) offers a comprehensive definition of the digital divide, delineating it into four distinct perspectives: motivation, physical access, skills, and usage. In alignment with Nkoala and Matsiele's (2023, p.47) study, the conceptualisation of the "usage gap" in Van Dijk's theory resonates with this study's interpretation of the digital divide through the lens of capabilities. According to Van Dijk, the usage gap manifests as:

“a systematic use of the Internet for particular goals by people of higher social class (education, income, and property) and status (social position and cultural resources) as compared to those of lower social class and status. The goals are advanced information, communication and education, work, business and capital-enhancing or career activities (higher social class) as opposed to simple information and communication (chatting or messaging), shopping and entertainment (lower social class)” (Van Dijk, 2020, p. 98).

Van Dijk's definition of the usage gap within the digital divide is grounded in a socio-economic framework, highlighting disparities in Internet utilisation between individuals of

varying social classes and statuses. The inclusion of specific goals, such as education and career activities for the higher social class, versus simpler activities for the lower social class, underscores the stratification of digital opportunities based on socio-economic factors. This definition emphasises the unequal distribution of digital resources and benefits, shedding light on how access to and use of the Internet are influenced by broader societal structures. However, it is essential to critically engage with this perspective, considering the dynamic nature of technology adoption and the potential for evolving socio-economic conditions to reshape the contours of the digital divide over time.

Several socio-economic issues contribute to this divide. Poverty is the most obvious issue or contributing factor. For example, in Africa in areas where Internet connectivity exists, many low-income households simply do not have the financial resources to purchase computers or smartphones, or to pay for Internet access (Azubuikea, Adegboyeb and Quadric, 2021). This limits their ability to access online information and resources, as well as to participate in the digital economy. Another issue is the need for more Internet infrastructure in many areas across the African continent (Azubuikea, Adegboyeb and Quadric, 2021). In South Africa, many rural communities do not have access to reliable Internet due to a lack of infrastructure such as broadband networks. This further exacerbates the digital divide in these communities (Fuchs & Horak, 2008).

Education is another key factor that contributes to the digital divide. Individuals who have had access to quality education are more likely to have the skills and knowledge to use technology effectively, which puts them at an advantage in the digital economy (Mkhize & Davids, 2021). On the other hand, those who have had poor education do not have the knowledge to use advanced digital technologies, which often limits their access to economic opportunities (Walker & Unterhalter, 2007, p.3). The COVID-19 pandemic magnified these inequalities and the vulnerabilities of those that are digitally marginalized.

UNESCO (2020) reported that 1.2 billion students and youths globally were affected by school and university closures due to the pandemic. In South Africa, 1.6 million learners especially those coming from disadvantaged households were severely affected by the pandemic (Ndulu, Ngwenya & Sethalogile, 2022, p.277) During this time, many spheres

of society along with the education sector, transitioned to remote (online) working and learning. However, Ndulu *et al.* (2022, p.277) reported that only 37% of South Africans were ready for remote learning based on a study conducted by Krönke (2020).

For instance, during the hard COVID lockdowns, many learners from township schools were digitally excluded as they needed help transitioning to remote learning. Their lack of digital literacy meant that even when they managed to access the technology, they lacked the knowledge or skills to use it effectively. This further limited their ability to access digital resources and participate in e-learning and even the digital economy (Lembani, Gunter, Breines & Dalu, 2019).

2.2. COVID-19's Impact on Education and e-Learning

A qualitative study conducted in seven states of India, Dhaygude, Lapsiya and Chakraborty (2022, p.18) highlighted the digital divide as a developmental problem where the underprivileged and vulnerable students were deprived of their capabilities to use ICTs. Furthermore, this study identified numerous facets of the digital divide that manifested during the COVID-19 pandemic. These included: access to devices, the quality of Internet access, the affordability of data plans, unavailability and reliability of Mobile Data Networks, loss of income for parents, digital literacy, and digital capabilities of teachers (Dhaygude *et al*, 2022, p.13-18).

Azabuike *et al.* (2021) conducted a similar study in six regions of Nigeria where they investigated the digital divide concerning accessing remote learning during the COVID-19 pandemic. Their findings revealed a relationship between socioeconomic status and school students' ability to access remote learning. Furthermore, Azabuike *et al* (2021, p.7) found that learners from government schools had more difficulties accessing digital tools than their counterparts from private schools.

Mkhize and Davids (2021, p.26) contextualised the manifestations of the digital divide in South Africa's township schools and established the digital divide as a development issue. Mkhize and Davids' (2021:15) findings corroborated those of Dhaygude *et al* (2022) and Azabuike *et al* (2021) who found that township schools in historically under-resourced communities experienced severe digital exclusion during the COVID-19 hard lockdowns.

Learners in these schools struggled to transition to online learning (Mkhize & Davids, 2021, p.25). The lack of ICT infrastructure (access to computers and stable Internet connection) and poor digital literacy in township schools exacerbated the digital divide (Mkhize & Davids, 202, p.20).

These studies all showed that better access to resources such as basic computer training, functional IT labs or personal computers, stable Internet, and online learning resources would have significantly helped in improving both access to and the quality of education as well as closing the digital divide between privileged and underprivileged learners during the COVID-19 pandemic. Factors such as lack of ICT equipment in under-resourced schools and inadequate digital literacy have resulted in widening the inequality gap.

A noticeable gap exists in current research regarding the resourcefulness of learners amidst the COVID-19 pandemic in overcoming challenges linked to the digital divide. There is a clear necessity for additional research in this field to fill this gap and enhance our understanding of the strategies learners employ during these exceptional circumstances.

Summary

This chapter focused on some contextually relevant literature that addressed the digital divide, which revealed its complex ramifications across societal, political, economic, and cultural realms. Furthermore, it examined how the COVID-19 pandemic heightened these discrepancies, exposing the vulnerabilities of digitally marginalised learners in South African township schools. Similar studies in India and Nigeria affirmed these issues, underscoring the socio-economic factors impacting remote learning accessibility. Despite shedding light on the gravity of the digital divide, a notable gap exists in recognising the potential resourcefulness of learners during the pandemic, prompting a call for further exploration into the adaptive strategies they employ.

The following chapter shifts focus from the literature to the theoretical framework guiding this study.

Chapter 3

Theoretical Framework

Chapter Introduction

This chapter selectively discusses relevant aspects of Amartya Sen's Capability Approach (1999) along with the terms "vulnerabilities", "opportunities", and "capabilities", which are linked to my research questions. The prevailing view in policy discussions is that the digital divide is primarily a problem of technological access, such as a lack of reliable telecom infrastructure, limited Internet connection, or low availability of computers (Thomas & Parayil, 2008, p.410). However, in agreement with Thomas & Parayil (2008, p.410), I argue that this perspective is narrow and fails to capture the broader discourse on the digital divide. What is more critical is individuals' and societies' capabilities whereby they can effectively use ICTs and convert the information provided into useful knowledge (Thomas & Parayil, 2008, p.410). This perspective then locates the digital divide as part of a broader development issue where significant segments of the global population lack these necessary capabilities (Thomas & Parayil, 2008, p.410).

To better understand the complexities of the digital divide in relation to poverty and development in the education sector, I draw on Amartya Sen's Capabilities Approach (1999). Sen's Capability Approach (1999), especially his concepts of "capabilities" and "functionings", will be useful for understanding the opportunities and constraints that some students face in accessing and benefiting from digital technologies. It is also useful for interpreting the findings of this empirical study.

3.1. Introducing Sen's Capability Approach

The concept of capabilities is appropriate for understanding the characteristics of the rise in inequalities in the age of information capitalism (Thomas & Parayil, 2008, p.412). Sen (1992) has argued that conventional analyses of poverty and inequality based on the ownership of commodities are inadequate (Thomas & Parayil, 2008, p.412). Instead, the focus should be on what Sen (1992) calls "functionings," which are about what "a person can do or be" (Thomas & Parayil, 2008, p.412). Sen (1985, p.7) defines functionings as "the achievements of a person", such as being adequately educated or able to grow one's

own food. He sees living as “consisting of a set of interrelated functionings”, which include beings and doings. Capability refers to "the various combinations of functionings (beings and doings) that [a] person can achieve... a set of vectors of functioning, reflecting the person's freedom to lead one type of life or another" (Sen, 1992, p.40).

3.2. The Digital Divide According to the Capability Approach

Commodities, such as computers, have characteristics that can be converted into a functioning for an individual. This conversion depends on two factors: personal characteristics, such as one’s digital literacy and physical condition, and social characteristics, such as infrastructure and social norms (Thomas & Parayil, 2008, p.413). Thus, an individual's achievement of a certain functioning, such as applying for a job online, is determined not only by their command over commodities but also by their personal and social characteristics (Sen, 1985 in Thomas & Parayil, 2008, p.413). This implies that individuals who possess the same commodities may have significantly different opportunities for improving their quality of life based on factors such as disability, geographical location, social networks etc.

Hence, according to Sen, an evaluation of an individual’s well-being (or lack thereof) is not merely about comparing their income or the commodities they possess, but it is about evaluating the ‘substantive freedoms or the capabilities to choose a life they have reason to value (Sen, 1999, p.74). Based on Sen’s (1999) perspective, access to Information and Communication Technologies (ICTs) (including communication technologies, such as the Internet, wireless networks, cell phones, computers, software, and social networking) does not automatically lead to positive development outcomes; personal and social characteristics of the individual using them are equally important or sometimes more crucial. For example, a digitally illiterate student or graduate with access to computers (at home or a school computer lab) and the Internet might not have the skills required to browse the web. Even if they learn how to operate a computer, the lack of appropriate education and skills might prevent them from applying for a job advertised online. This means that command over commodities — in this case, access to computers and information — does not necessarily result in the achievement of desired functionings of

being able to browse the Internet or being able to apply for the desired job online (Thomas & Parayil, 2008; 4, p.13).

Considering this, it can be observed that while individuals belonging to socially privileged classes possess distinct personal and social characteristics, such as enhanced education and active social networks, enabling them to effectively translate their Internet access into desired functionings, socially disadvantaged classes are likely to lack such attributes (Thomas & Parayil, 2008, p.414). Consequently, in such circumstances, ICTs - rather than mitigating the disparities between different social classes - would instead perpetuate and widen existing inequalities (Thomas & Parayil, 2008, p.414). This becomes an issue of underdevelopment. A problem aggravated by the "winner-take-all" tendency inherent in this time of information capitalism (Thomas & Parayil, 2008, p.414).

Capabilities pertaining to the use of ICTs seem to be linked to higher levels of social development. As a result of these connections to bigger debates about ICTS and development, Sen's Capability Approach (1999) is a useful theoretical framework to examine and explain the experiences of the digital divide and the ability of learners to meet their needs for digital literacy in an under-sourced school during COVID-19. The learners' access to quality Internet connections, quality infrastructure, their capabilities to use ICTs and capabilities to use the information provided by ICTs to meet their digital needs for digital literacy during the COVID-19 lockdown will be discussed below.

Anecdotal evidence on this topic indicates that the experiences of learners of the digital divide from under-resourced schools are uneven, but there is also some evidence to suggest that learners are often resourceful in overcoming the obstacles they face under extremely difficult conditions. By examining the problems faced by a group of learners, nuances of the digital divide are uncovered and contribute to debates about ICTs and development in the context of education.

Summary

Sen's Capability Approach (1999) provides a nuanced lens for understanding the digital divide's complexities within the broader context of development and education. Sen's (1999) emphasis on capabilities and functionings redirects focus from mere technology

access to individuals' capacity to effectively use ICTs, crucial for positive development outcomes. This perspective highlights the intricate interplay between personal and social characteristics in achieving desired functionings, making it clear that mere access to ICTs does not guarantee development outcomes. The Capability Approach becomes a potent framework for examining learners' experiences of the digital divide during COVID-19 in an under-resourced school, promising insights into their access, capabilities, and resourcefulness in navigating digital challenges.

Chapter 4

Methodology and Research Methods

Chapter Introduction

This chapter discusses the methodology, and the deliberate and meticulous methods employed to ensure a robust investigation into the digital divide experienced by high school learners from an under-resourced school in Khayelitsha during the hard COVID-19 lockdowns. As a departure point, I motivate my research design of choice where a qualitative single-case-study approach was employed. This approach allowed for a comprehensive exploration within the real-life setting of the participants. Additionally, the utilisation of a single case study design is justified by the study's focus on a unique and revelatory case – the experiences of a specific group of Grade 11 learners from an under-resourced school in Khayelitsha during the pandemic.

Purposive sampling was employed, aligning with the in-depth nature of case studies (Miles and Huberman, 1994). The inclusion of diverse data sources, such as documentary analysis, in-depth interviews with a key informant, and focus group interviews with learners was intentional.

The data collection process was structured around three distinct sources, namely documentary analysis, an in-depth interview, and focus group interviews. The data collection process was guided by a comprehensive set of questions addressing digital divide-related vulnerabilities, opportunities, and responses at both policy and grassroots levels.

Qualitative data analysis, following Miles and Huberman's (2014) thematic coding approach, was undertaken systematically to identify patterns and relationships within the collected data. This approach includes three key phases: data reduction, data display, and conclusion drawing and verification, which prioritise rigour and transparency (Miles and Huberman, 1994; Punch, 2014).

The ethical considerations of this study are paramount, particularly due to the involvement of high school learners. Stringent ethical practices, including voluntary participation,

informed consent, and ethics clearance from the University of Cape Town, have been adhered to, respecting the rights and well-being of the participants. I conclude this chapter with a summary.

4.1. Research Design

A case study approach was employed in this study as it is a comprehensive research strategy that undertakes empirical investigations and analyses a phenomenon in its real-life setting, particularly when the boundaries between phenomenon and context are unclear (Yin, 2003, p.13; Punch 2014). The central research question sought to adopt a research design that comprehensively examined the phenomenon of the digital divide as experienced by high school learners from an under-resourced school. Hence a case study methodological design was deemed suitable to holistically answer the central research question.

According to Yin (2003, p.38), there are several types of case study research designs. These include single versus multiple case studies and holistic versus embedded. For this study, A single case study research design was used. Yin (2003, p.38) outlined three rationales for a single case study. These were:

- a) A single case study could be used as a critical case, object, or event to test a well-formulated theory.
- b) A single case can be used when the case extremely or uniquely represents a case that can be used to test a theory.
- c) The third rationale is when the single case is a “revelatory” case which refers to when the researcher gets an opportunity to investigate a phenomenon that may have not been accessible to other researchers for scientific research.

The third rationale is the one that applied to this study. Research was conducted on one group of learners' experiences of the digital divide from an under-resourced school in Khayelitsha during COVID-19 lockdowns. It is very unlikely that other researchers would have had access to similar groups.

Following this, the unit of “measurement” chosen was a group of young people in grade eleven as a single holistic case which was sufficiently “representative” of learners from a typical township school. Yin (2008, p.13) highlights the importance of using multiple sources of data as the data needs convergence and replication. Because the central research question is a how-type question, Yin (2008) would argue that it required in-depth data collection from multiple sources. Therefore, a relevant documentary source (a policy and strategic document) from the Department of Basic Education (DBE), a focus group interview (with a small group of learners) and an in-depth interview (with a key informant who works in township schools in the area of e-Learning) was used.

4.2. Sampling

According to Mason (2002, p.120), sampling and selection are broadly defined as “principles and procedures used to identify, choose and gain access to the relevant data sources which will be used to generate the data needed”. Furthermore, the sample or selected source of data belongs to a broader population group, and a researcher’s sample will need to link back to the context of the wider population group (Mason, 2002). The strategy employed by the researcher was to select a group of participants relevant to their research question or their research positionality (Mason, 2002). Moreover, in-depth case studies generally work well with purposive sampling (Miles and Huberman, 1994, p.7).

Data was first collected in the form of the analysis of the Department of Basic Education’s White Paper 7 on e-Education (2004) and the Western Cape Education Department (WCED) response paper to White Paper 2, namely WCED’S Vision for e-Education (2012). This “sample” provided additional information about relevant policies and e-Learning strategies.

Secondly, a key informant from a Public Benefit Organisation (PBO), which offers eLearning programmes to learners in township schools, was interviewed. The key informant had vast experience working with learners from under-resourced schools in the same township as the sample focus group and has been exposed to the experiences and effects of the digital divide on learners from this community. The primary purpose of interviewing the Key Informant was to help me prepare for the interview with the learners.

Lastly, a purposefully selected group of high school learners who have been exposed to the challenges of the digital divide were interviewed. The sample of six Grade 11 learners was selected as a standard case of learners in a township school, considering their access to ICTs and related experiences. Moreover, my previous professional engagement with these learners facilitated access for research purposes.

4.3. Data Collection

According to Punch (2005, p. 57), qualitative research embarks on a process of collecting empirical information that is in the form of words regarding the topic they are studying. In addition, Mason (2002) argues that this process is not merely data collection but a process of data generation as it captures a much wider range of relationships between the researcher, the social world, and the data they generate for their research.

This study included three data collection methods as displayed in Figure 1:

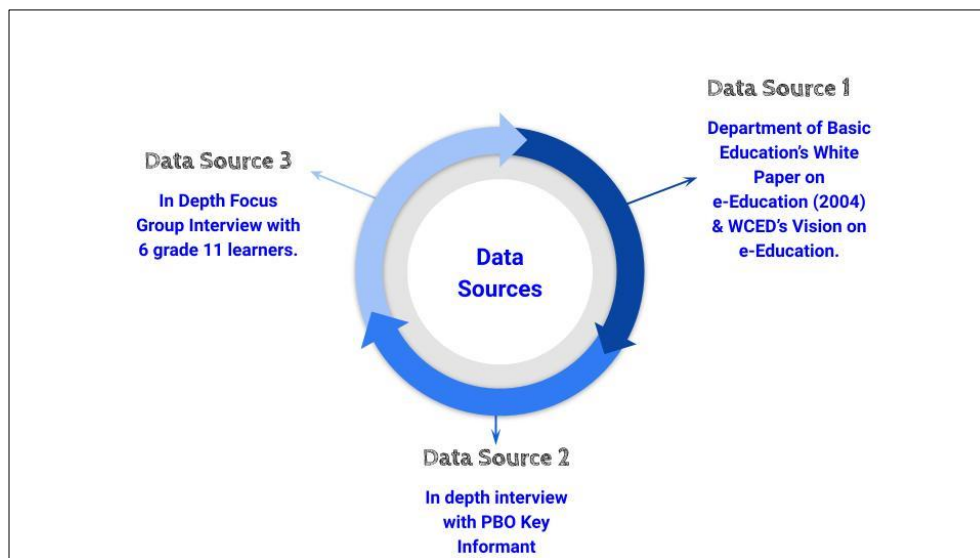


Figure 1: Data collection sources.

4.3.1. Data collection from Data Source 1: Documentary analysis.

Denzin (1970, p.271) states that documentary analysis is often used in combination with other qualitative research methods as a means of triangulation - or at least to support the main findings as a form of corroboration. An analysis of the White Paper 7 on e-Education (2004) from the Department of Basic Education and the Western Cape Education

Department's response to the White Paper through the WCED Vision for e-Education (2012) was carried out.

Questions guiding the analysis included the following:

- (a) What digital divide-related vulnerabilities and opportunities are identified in national or provincial education departments' strategic or curriculum plans?
- (b) What are the national and provincial departments of basic education currently doing or planning to do to support students meet their educational need for digital literacy?
- (c) What are the plans of national and provincial departments of basic education to combat the digital divide in township schools?

4.3.2. Data collection from data source 2: In-depth interview with a key informant from Dream Factory (PBO)

An in-depth interview with a key informant working for a PBO was conducted using an interview schedule with semi-structured interview questions. The key informant who will be referred to as OB in the following chapters, is an alumna of one of the PBO's programmes for young women. She shares a similar background with many learners interviewed for this study. Like them, she originates from the Eastern Cape, although she started her primary education in rural KwaZulu-Natal, and completed her primary and high school education in public fee-paying schools in Cape Town. Upon graduation, she became an intern at the organization and eventually progressed to her current role as a project assistant. Currently residing in Khayelitsha, she has been working with youth-at-risk from Khayelitsha and Philippi in Cape Town and also rural KwaZulu-Natal since 2019. To date, the key informant has worked with approximately 15 schools from these communities.

Given her contextual background and experience, these make her an invaluable source for exploring the digital divide among township high school learners during the COVID-19 lockdown. The themes arising from the interview were analysed using Miles and Huberman's qualitative data analysis techniques discussed below.

An interview schedule was used, which helped guide the interview in my gaining insights from the key informant about the learners' experiences of the digital divide and her observations from working with learners in the field.

4.3.3. Data Source 3: In-depth Focus Group Interviews with 6 learners

One focus group interview of 86 minutes with a group of six learners was conducted at Nazeema Isaacs Library with written consent from all the group participants' parents or guardians. The interview was conducted after the pandemic with the purpose of capturing the learners' experiences before, during and after the pandemic. Gaining access to the learners was not difficult because I had previously worked with them.

Punch (2005, p.146) argues that group interviewing is a broad concept encompassing the researcher's engagement with multiple individuals concurrently, as opposed to a singular participant (Punch, 2005, p.146). There are several types of focus group interviews, namely unstructured and semi-structured. The focus group for this study was semi-structured because it was guided by a list of core questions in the interview schedule, as opposed to merely being guided by a set of themes. The semi-interview questions explored the learners' experiences of the digital divide before, during and after the COVID-19 pandemic.

A focus group interview offers several advantages. Firstly, members of a focus group generally share a common denominator. In the case of the focus group members of this study, all members were learners of a similar age, educational and socio-cultural backgrounds, and were all familiar with the research theme (Farnsworth and Boon, 2010). These commonalities help the researcher gain an in-depth understanding of social processes, thereby producing better results compared to individual interviews in terms of intricate thought processes that are typically inaccessible to researchers (Blee & Taylor, 2002, p.107-109; Johnston, 2002, p.83-85). Secondly, small group dynamics mitigate participants' self-preservation concerns, enabling more open and candid contributions. Thirdly, the researcher gains the opportunity to observe and analyse interactions among group members pertaining to the designated discussion topic, thus providing valuable

insights into participants' interpretations of their experiences (Blee & Taylor, 2002, p.107-109; Johnston, 2002, p.83-85).

The focus interview questions were informed by my primary research questions and focused on experiences of the digital divide before, during and after the COVID-19 hard lockdown as well as vulnerabilities, opportunities, and resourcefulness. The focus group interview schedule was finalised after my interview with the key informant. The interviews were mostly in isiXhosa, which is the participants' first language. Nonetheless, there were instances where a code switch to English was done upon request from the participants for a better understanding of the research questions. However, using the participants' first language reduced the possibility of participants misunderstanding questions and providing erroneous or invalid information. As an isiXhosa-speaking researcher, I am professionally qualified to conduct these interviews in the vernacular and to analyse the data generated by the group interview. All the data collected was recorded and transcribed for data analysis and reporting.

4.4. Data Analysis

A qualitative approach was employed to analyse the textual data collected during this study. Additionally, this study drew on Miles and Huberman's approach to conducting thematic qualitative data analysis to inform the procedures and processes of analysis (Miles, Huberman, and Saldana, 2014). According to Punch (2014, p.189), methods of qualitative data analysis must be systematic and transparent. De Wet and Erasmus (2005, p.26) refer to qualitative data analysis as a rigorous and systematic process of organizing, coding, and annotating qualitative textual data guided by a set of research questions. Furthermore, the qualitative data analysis process aims to examine and interpret observations to discover underlying meanings and patterning of relationships (Gibbs, 2007, as cited in De Vos *et al*, 2011).

The Miles and Huberman approach (Miles, Huberman, and Saldana, 2014) recommends three main data analysis processes or phases, namely i.) data reduction ii.) data display and iii.) conclusion drawing and verification.

4.4.1. Data Reduction

The data reduction process includes “selecting, focusing, simplifying, abstracting and transforming of the data” from field notes and/or transcriptions (Miles & Huberman, 1994, p.10). Thematic coding is used by Miles and Huberman (1994) for data reduction. They use a combination of first-level or descriptive codes and second-level or pattern codes (Miles and Huberman, 1994, p.56).

4.4.2. Data Display

According to Miles and Huberman (1994, p.11), data display in the form of mind mapping or some other similar technique assists in facilitating analytical thinking and observing patterns (i.e. relationships between coding categories) in the data.

4.4.3. Conclusion drawing and verification.

As the third phase of my systematic data analysis process, I will be able to provide possible explanations and summaries of the findings (De Wet & Erasmus, 2005, p.34). As mentioned by Punch (2014, p.72), the reason for reducing and displaying data is to help the researcher draw conclusions based on the themes they have identified in the data. However, any initial conclusions needed to be verified. (Punch, 2014, p.172).

The conclusions were verified using Miles, Huberman and Saldanha's (2014) techniques for testing or confirming findings. This might entail:

- i. Noting patterns and themes,
- ii. Seeing plausibility,
- iii. Focus on clustering to clarify and identify associations within the data.
- iv. Making contrasts or comparisons to sharpen the understanding of the findings.

4.4.4. Computer Software for Qualitative Data Analysis

De Wet and Erasmus (2005, p5, 34, 39) argue that qualitative data analysis software such as Atlas-ti or NVivo are useful tools that assist in data analysis. These software packages

help researchers store, organise, and code the data and record their analytical thinking in memos and annotations.

The NVIVO software that is available from UCT's ICT department was downloaded and used. I found the use of software especially helpful in the first two phases of my thematic analysis, namely data reduction/coding and data display.

4.5. Research Ethics

According to Babbie and Mouton (2001), ethical considerations are an incredibly important part of the research. Researchers are encouraged to follow moral principles that guide professional conduct during a research process to protect those involved (De Vos, 2011). Considering that the research involved high school learners between the ages of 16 and 18 years, ethical practices pertaining to non-adult respondents had to be followed to ensure that the rights of the participants were not violated in any way. The ethical practices discussed below were carefully observed.

4.5.1. Voluntary Participation

4.5.1.1. Informed Consent

Having interviewed Grade eleven learners who were all under the age of 18 (but older than 16 years), consent was requested from their parents/guardians telephonically and signed consent forms. After receiving initial consent from the participant's parents/guardians, all participants were informed that their participation was completely voluntary, and the intentions of the research were laid out in the consent form (see Appendix A). The participants were informed that they had a right to withdraw their participation at any point in the research. Furthermore, participants were informed upfront that no reward would be offered for their participation and that they would have no rights to authorship because of their participation. Thereafter, all participants will be asked to complete and sign the consent form. The interview was conducted at a community library which is easily accessible to them.

4.5.1.2. Ethics Clearance

Ethical clearance was obtained from the University of Cape Town (UCT), thereby obtaining approval to commence with data collection.

Summary

In this chapter, the study's research questions and methodology were discussed. Having employed a case study methodology, I used multiple data collection methods and data sources to analyse the digital divide experiences of Grade 11 learners in a Khayelitsha under-resourced school during COVID-19. Thematic qualitative analysis processes and procedures generated insightful findings derived from the empirical data. Ethical considerations were paramount throughout, upholding the participants' rights.

The next four chapters deal with the findings of this study. These findings have been separated into chapters that deal with observations and insights derived from the Department of Basic Education's White Paper on e-education and WCED's Vision for e-Education (2012), an interview with an NGO Key Informant and the digital divide experiences of the learners before, during and after the hard COVID-19 lockdown. My presentation of the three sets of findings leads me to a discussion of key results and how they contribute to debates in the literature.

Chapter 5

Findings from Documentary Analysis

Chapter Introduction

The focus of this study has been on examining the lived experiences of the digital divide by high school learners from a township school. I chose to focus on the Department of Basic Education's White Paper 7 on e-Education (2004) and WCED's Vision for e-Education (2012) as the participating learners came from a township school in the Western Cape. These were the main guiding documents, although there were other policy documents that influenced school interventions in e-Education. These documents provided me with a foundational understanding of the government's aspirations of transforming learning and teaching through Information and Communication Technologies (ICTs). It is the government's educational response to the digital divide. Addressing questions of vulnerability, opportunities, and strategic plans, this document review offers context and sets the stage for the primary data gathered.

The following sections delve into the specific findings derived from this data source and contribute to my presenting a holistic narrative that captures the intricate interplay of policies, expert insights, and the lived experiences of the learners.

5.1. Introducing The Department of Basic Education's White Paper 7 on e-Education (2004) and WCED's Vision for e-Education (2012)

While navigating the provincial Department of Education's website in search of digital divide-related insights, I uncovered a rich ePortal housing extensive e-learning resources for both educators and learners. This digital repository directed my attention to the pivotal White Paper 7 on e-Education, which outlines the government's response to the evolving ICT landscape in education (Western Cape Government Website, 2023). Additionally, my attention was drawn to WCED's Vision for e-Education (2012).

Published in 2004, the DBE's White Paper 7 is a comprehensive guide outlining the South African government's strategies for integrating ICTs into the education system. This foundational document addresses critical aspects such as infrastructure, digital literacy,

content development, and the overall enhancement of teaching and learning through technology. Following the release of White Paper 7 on e-Education, each province was tasked with creating a response document detailing specific provincial responses to DBE's aspirations (White Paper 7, p.39). Subsequently, the WCED developed its Vision for e-Education in 2012.

Upon closer examination, these two documents emerged as crucial documents delving into the challenges and opportunities posed by the digital divide. They underscore the vital role of ICTs in reducing educational disparities and introduce specific initiatives targeting improved ICT infrastructure, local content development, and enhanced digital literacy among educators and learners (DBE White Paper 7 on e-Education, 2004 and WCED Vision on e-Education 2012). Emphasising the significance of technology in supporting resource-based and outcomes-based education, the documents lay out a comprehensive framework for educational advancement (DBE White Paper 7 on e-Education, 2004; WCED Vision on e-Education, 2012).

My analysis aimed at addressing three key questions relating to my study: (1) what digital divide-related vulnerabilities and opportunities are identified in national or provincial education departments' strategic or curriculum plans? (2) What are the national and provincial Departments of Basic Education currently doing or planning to do to support students in meeting their educational need for digital literacy? (3) What plans do national and provincial Departments of Basic Education have to combat the digital divide in township schools?

The findings from the documentary analysis unveiled insights which are discussed below.

5.2. Vulnerabilities and Opportunities in Educational Plans

Both documents delve into the vulnerabilities and opportunities embedded in national and provincial education departments' strategic and curriculum plans concerning the digital divide (DBE White Paper 7 on e-Education, 2004; WCED Vision on e-Education, 2012). This analysis emphasises the profound impact of underdeveloped ICT infrastructure in South Africa and Africa, amplifying disparities between these regions and the developed world (DBE White Paper 7 on e-Education, 2004; WCED Vision on e-Education, 2012).

Beyond mere connectivity issues, the digital divide is intricately tied to the empowerment of teachers for e-Teaching and learners for e-Learning, local content development, collective knowledge generation, fostering a domestic knowledge economy, overcoming cultural barriers, and promoting cooperation and collaboration (DBE White Paper 7 on e-Education, 2004; WCED Vision on e-Education, 2012). The documents underscore ICTs' role in innovation and competitiveness, emphasizing the need to cultivate a pool of ICT-proficient youth.

5.3. Addressing Infrastructure Gaps

The DBE White Paper 7 (2004) recommended promoting offline resources and suitable software until widespread and affordable connectivity becomes a reality. It emphasises the importance of local content development, collective knowledge generation, and nurturing a domestic knowledge economy to effectively bridge the digital divide. In response to these recommendations, the WCED (2012) aimed to address infrastructure gaps by making technology (such as laptops, interactive boards, e-readers, tablets, smartphones, etc.) increasingly available to transform school environments to be conducive to e-Education. In particular, high schools would have specialist rooms with specific technology and relevant digital content (WCED Vision on e-Education, 2012, p.14). WCED (2012) envisioned the environment in schools allowing personal as well as state-provided devices to connect to the school server and the LAN/WAN (WCED Vision on e-Education, 2012, p.14). Additional details mentioned included some changes to the placement of furniture in classrooms to foster collaboration using technology. In addition, the department envisioned that there would be quiet learning spaces in parts of the school, and the areas outside the classroom would increasingly become spaces where learning could be accessed.

5.4. Supporting Digital Literacy Needs

To address students' digital literacy needs, the White Paper (2004) advocates for a multifaceted approach. This involves developing and enhancing ICT infrastructure in schools, creating digital libraries, and adapting local content into indigenous languages (DBE White Paper 7 on e-Education, 2004). Collaboration with higher education

institutions is also proposed to integrate essential ICT competencies into teacher training programs (DBE White Paper 7 on e-Education, 2004).

The WCED's response primarily focused on addressing the need for access to ICTs and infrastructure. Additionally, WCED proposed a collaborative effort between teachers and students to create digital libraries and content. Although the paper emphasizes the importance of making e-Education and e-Learning inclusive and personalized to meet the diverse needs of all learners, regardless of their unique cultural backgrounds and linguistic abilities, WCED did not provide a specific response to address the DBE's call for the transformation of local content into indigenous languages. It is disappointing that WCED did not prioritize this, especially considering the diversity of the province's schools.

5.5. Provincial Considerations and Strategies

While the Department's initiatives reveal a commitment to addressing digital disparities, the absence of detailed provincial plans leaves some uncertainty about localized strategies and implementations, especially for at-risk provinces such as the Eastern Cape and Limpopo (DBE White Paper 7 on e-Education, 2004). The findings collectively underscore the intricate challenges, opportunities, and strategies identified by South Africa's education authorities as they navigate the complexities of the digital divide and work towards enhancing digital literacy among learners.

Summary

The analysis of the DBE White Paper 7 (2004) and WCED's Vision for e-Education (2012) reveals significant disparities in ICT infrastructure, highlighting persistent challenges in connectivity, local content development, and cultural barriers. While both papers advocate for a multifaceted approach to digital literacy, including the enhancement of ICT infrastructure, the creation of digital libraries, and collaboration with higher education institutions, their strategies lack depth in addressing the unique needs of diverse communities.

Despite the DBE's expressed commitment to mitigating these disparities at both national and provincial levels, the absence of detailed, actionable provincial plans, particularly for at-risk communities such as Khayelitsha, raises concerns about the feasibility and effectiveness of localized implementation. This gap suggests a disconnect between policy objectives and practical realities on the ground, potentially exacerbating existing inequities.

The findings underscore not only the complex challenges but also the potential missed opportunities within South Africa's education system. The strategies proposed, while comprehensive in theory, appear insufficiently tailored to the nuanced needs of different communities, risking the perpetuation of the digital divide rather than its resolution.

Chapter 6

Findings: Learners' Experiences of the Digital Divide Before the COVID-19 Hard Lockdown Period

Chapter Introduction

Thematic analysis was conducted using NVIVO 14. Through the analysis, numerous findings emerged about the digital divide experiences of a group of high school learners. COVID-19 hard lockdown magnified the learners' experiences of the digital divide. Importantly, magnification helps us to see things more clearly and to also see what might be hidden to understand and explain the phenomenon under investigation better. With this view in mind, I found it useful in my reporting of the findings to distinguish between the learners' experiences before, during and after the hard lockdown. This distinction shows what was magnified. This chapter reports what I found about their everyday experiences of the digital divide before the hard lockdown. The following chapter focuses on their experiences of the digital divide during and after the hard lockdown. These findings address the study's sub-research question: What were the learners' experiences of the digital divide during the COVID-19 lockdown?

This chapter highlights the multifaceted nature of the digital divide, shedding light on the nuanced experiences of the learners **before** the challenges brought about by the COVID-19 hard lockdown. This chapter also more specifically examines the following:

- (1) The learner's access to digital devices and reliable Internet connectivity. We investigate the availability of digital tools and reliable Internet access within the learners' homes and school environments.
- (2) Affordability of digital tools and the Internet. The chapter explores the economic factors surrounding the accessibility and sustainability of digital resources.
- (3) Levels of using digital devices and Internet technologies. We evaluate the extent to which learners use digital devices and Internet technologies in their education.

Before I report on the pivotal findings, it is imperative to provide a glimpse of the participants' contextual demographic backgrounds to observe connections between the learners' socio-economic location and experiences of the digital divide.

6.1. Contextual Background of the Participants

This study involved a group of learners from a township High School, each with demographic characteristics. Table 1 presents a summary of selected demographic information of the participants.

Table 1: Learners' Demographic Information

| Learner Demographic Information | | | | | | |
|---------------------------------|-----|-------|-----------------|----------------------|---|--|
| Student ID | Age | Grade | Originally from | Current location | Staying with both parents? | Parent's/ Guardian's occupation? |
| Participant 1 (SM) | 16 | 11 | Eastern Cape | Khayelitsha, Makhaza | No, stays with mom, grandmother, and siblings | Mother is an Office administrator. |
| Participant 2 (OM) | 16 | 11 | Eastern Cape | Khayelitsha, Makhaza | No, stays with her aunt's family | Mother is a domestic worker. |
| Participant 3 (EMB) | 16 | 11 | Eastern Cape | Khayelitsha, Makhaza | Yes, stays with her mother and stepfather | Father works as a production set dresser and their mother works for a domestic worker's company. |
| Participant 4 (EG) | 16 | 11 | Eastern Cape | Khayelitsha, Makhaza | Yes, stays with both parents | Mother is unemployed and father works as a welder. |
| Participant 5 (EB) | 16 | 11 | Eastern Cape | Khayelitsha, Makhaza | Yes, she stays with both parents | Father works as a security and her mother is unemployed. |
| Participant 6 (EM) | 16 | 11 | Eastern Cape | Khayelitsha, Makhaza | No, Stays with mom and siblings | Mother is a student in a college. |

The participants are all sixteen years old, in the 11th grade, and originally from the Eastern Cape. They currently reside and study in a township public school in Khayelitsha, specifically in the Makhaza area, which is made up of 40% informal settlement and 60% formal housing. It's important to note that while some students live with both parents, others live with extended family members or only with their mothers. Their guardians have various occupations, but they all work in the working-class sector.

The school is an English-medium institution that does not charge any fees. It has around 1371 students and 43 teachers, resulting in a student-teacher ratio of 32:1 (Schools Digest, 2023). In terms of ICT resources, the school has two well-equipped computer labs, with 80% of the computers in working condition. Additionally, the school received a sponsorship of tablets and a smartboard for one of the computer labs. However, the school does not offer Computer-applied technology as part of its curriculum.

With this contextual background of the participants in mind, I now turn to the first instalment of the findings and discuss the theme of access.

6.2. Access to Digital Devices Before the COVID-19 Hard Lockdown

The research sought to understand the learners' experiences regarding access to digital resources and tools, such as computers, laptops, tablets, and smartphones, before the COVID-19 lockdown. The findings can be clustered into several categories:

6.2.1 Varied Levels of Access: Three out of six participants reported having access to digital devices from their primary school years. However, it is important to note that these participants display a wide range of access experiences. Two out of six had consistent and sufficient access, while four faced limitations such as access politics at school or insufficiencies in their access at home.

Participant 5-EB (2023) further explained how the access was facilitated by the teachers with limitations for learners:

“At school, we went (to the computer lab) sometimes, we would be taken by Mr M when we go do something for Geography and no other subjects. A teacher only took us to the IT lab for their subject.” (Participant 5- EB Interview, 2023).

Additionally, Participant 5-EB (2023) highlighted concerning issues of favouritism amongst teachers and the theft of computer lab resources:

Let me say Miss “Akhona” [not a real name] is at the IT lab, Miss Akhona knows me, and I ask that she let me use the Internet because I want to do something. She will let in me just because she knows me. But if it’s someone else that she does not know who asks, she will say “No no no because you are stealing things here (in the lab)” ... So, I think it depends on who is there (at the computer lab), who is in charge at the e-IT lab, do they know you? And what are you to them?”

The issue of theft and vandalism of computer lab resources was prevalent when I volunteered at the school and provided me with insight into the teachers' perspective. This issue discouraged teachers from giving learners access without supervision as it meant that they were being held responsible for any loss or damage to resources. Most times, teachers allowed learners to access the computer lab if they could supervise them and ensure that all resources were accounted for. Unfortunately, this situation curtails easy access for students to the school's IT facility.

6.2.2. NGO Intervention for Access: Two participants who did not have exposure to computers at primary school shared that their first encounter with computers and somewhat consistent access to computers was facilitated through the IT classes I provided when I volunteered at a non-governmental organization (Focus group interview, 2023). Furthermore, all these learners came from disadvantaged backgrounds and did not own personal computers at home. This suggests that external interventions play a crucial role in providing digital access for these students.

6.2.3. School Access Politics: In 2017 the Western Cape Education Department (WCED) embarked on a great initiative that included the provision, maintenance, support, and management of a Local Area Network (LAN) for all Western Cape public schools (Sands, 2017). Part of this project ensured that all learners registered with WCED schools were assigned login credentials unique to them and similar to student numbers at the university. These credentials allowed the learners to connect to the school's WIFI and log into the school computers. During my tenure as the Digital Skills Development course facilitator at the school, I was provided with the learners' credentials, which worked seamlessly 95% of the time.

I was surprised and disappointed to learn that the learners were deprived of this resource outside the context of the course. Learners mentioned that for them to access digital resources for their personal use, they had to rely on other students with these credentials or teachers. This could involve sharing devices or obtaining passwords.

One learner described the limitations and frustrations that they face at school;

“I would not say what we have here (at school) is access because we only go when it’s for instance the Maths period and we only do things that are Maths related... For instance, if you want to do your research, some do not have phones, we come from different households and some kids come from poor families and do not have money to buy data. When we ask for access at the IT lab, they [referring to teachers] tell us that learners are not allowed to come into the IT labs because they steal the school mouses.” (Participant 6-EM, 2023)

Participant 6-EM (2023) highlighted an issue I also encountered when I was at school where learners did not have the freedom to access the computer lab for their educational endeavours such as doing research or completing an assignment. This observation shows that access is not solely dependent on individual ownership, but it is influenced by social connections within the school community.

6.2.4. Challenges and Overcoming Access Barriers: Though most participants faced challenges related to access to digital devices at school, they also highlighted resilience by finding ways to overcome these challenges. Some of their strategies include;

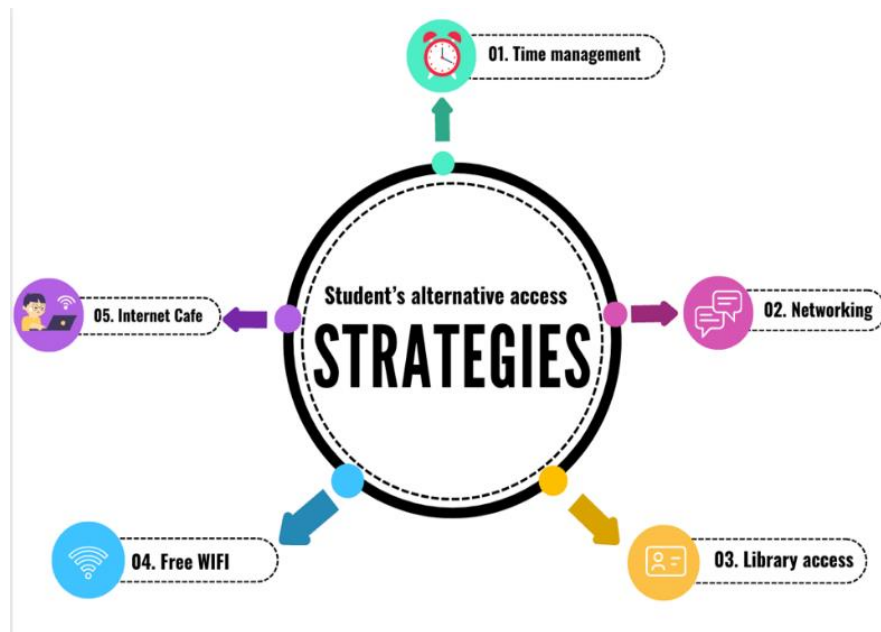


Figure 2: Learner's digital devices and Internet access alternative strategies.

- **Better time management:** When necessary one learner (Participant EG, 2023) said that he came early to the school to connect to the school WIFI and complete his homework. Additionally, he would work through his school breaks to complete any of his academic responsibilities.
- **Networking:** All the learners highlighted the importance of making connections with learners and teachers who would be able to help them gain access to the school's WIFI and computers.
- **Internet at Community Libraries:** Two out of the six participants applied for library access cards and mentioned that the library is a great alternative for them to access the Internet despite the early closing times.
- **Free WIFI:** Three out of the six learners mentioned that they go to a local spaza or convenience store to gain access to free WIFI from "Ikeja"- a wireless network provider that provides connectivity solutions to township areas.
- **Internet Café:** Two out of the six learners mentioned that they go to the Internet café when a need arises. Though all participants agreed that local Internet cafes are expensive, two participants mentioned that they sacrifice the little money they have if they need to make use of the Internet café.

These findings represent a critical aspect of the digital divide, where students are not only experiencing barriers but actively working to surmount them.

In summary, these findings reveal the complex nature of access to digital devices among learners in their everyday lives before the COVID-19 lockdown. While some had unobstructed access, others faced limitations and relied on external interventions or school-based networks to bridge the digital gap. The presence of learners who actively sought solutions to access challenges suggests a proactive approach to dealing with digital disparities. These insights will be crucial in understanding how the experiences of these learners evolved during the COVID-19 lockdown, which will be further explored in the next chapter.

6.3. Access to Reliable Internet Before the COVID-19 Hard Lockdown

The exploration of learners' experiences regarding Internet access, under the broader theme of Access, unveils a somewhat multi-faceted landscape marked by disparities, challenges, and adaptive strategies across diverse groups.

6.3.1. Internet Access at School

Participants described varying degrees of Internet access at school, primarily through WIFI.

“So here at school for you to get into the Internet..., there is WIFI but there are those who know the password and there are those who don't know it. If you don't have the WIFI password, you ask the one who has it. For some, it becomes difficult because the one who knows the password will not want to share the password with others.” (Participant 6-EM)

Participant 6-EM highlighted the issue of limited Internet access at school. This revelation of unequal access due to password politics and social connections raises concerns about the inclusivity of digital resources within the school environment. As mentioned previously, this is a resource that WCED made available to be used by all learners and learners should not have to struggle to obtain access. This highlights a need for better administration and management of this resource to ensure that there is equal access.

6.3.2. Internet Access at Home

This section highlights the divergence in home-based Internet access. While two out of six participants enjoyed access to capped WIFI at home, others resorted to buying data, subject to financial constraints. One participant who comes from a poorer family where one parent is employed shared his experience of accessing the Internet at home and his coping strategies:

“I rely on the school WIFI because we don’t have it at home. If I’m at home and I have schoolwork I have to buy data. So sometimes I don’t have money to buy data so I can do my work, do research here at school... Times where I can use the school WIFI are when I arrive early, during short breaks, lunch breaks and I have to make sure that by the time school ends, I have completed it”. (Participant 4-EG)

The reliability of these WIFI connections is further jeopardized by load shedding when the electricity supply to specific geographical areas is shut down for a period, creating a challenging environment for sustained online connectivity. Additionally, those who used capped WIFI, reported that the extensive use of it at home by the whole family for various purposes added other complications. The family’s WIFI access was limited and often used up before the end of the month.

6.3.3. Internet Access in the Community



This image shows a typical picture of learner’s accessing the WIFI in public spaces. Though it shows their determination to access online resources, but it raises concerns about their safety and the safety of their smartphones.

Image source: Ikeja public Facebook page, 2023.

Learners accessed the Internet through diverse avenues, including school libraries, and Spaza shops offering 15-minute free Internet access through Ikeja, which is also known as E-Kasi Wi-Fi, and commercial Internet cafes.

One participant shared her access struggles with the group;

“So, we don't have WIFI in the area I stay in we rely on Ikeja, or we ask for data. But when you buy the Ikeja voucher, you get 15 minutes so you would search and take screenshots. And then perhaps you are writing and realise you are missing something; you will then have to wait for the following day (when you get free 15 minutes). Or if you have data, the network will give you trouble and there is always some obstacle. So, the network at school is much better for me despite the issue of load shedding, but it's still better for me”.
(Participant 2- OM, 2023)

Limited computer availability and extended waiting times in public spaces make accessing ICTS resources difficult for learners from disadvantaged communities and reiterate the need for equitable distribution.

6.3.4. Challenges

The challenges identified under this theme amplify the structural barriers contributing to the digital divide. Affordability emerged as a recurrent obstacle, with a substantial number of participants quoting financial constraints preventing them from accessing data or purchasing vouchers for Internet cafes. One of the participants shared how her parents must make sacrifices to be able to access the Internet:

“I wouldn't say I can afford ma'am for instance when I say I want something, I get it not because there is money. You can see that the money has been sacrificed. Okay, since I'm going to be given money, then there will be a shortage of something at home”
(Participant 2-OM, 2023).

The willingness to sacrifice money when the need arises highlights the importance learners place on Internet access for their educational pursuits. Moreover, adaptive strategies, like using school WIFI or joining the local library to use its Wi-Fi or Internet connection, demonstrate resourcefulness despite the challenges.

Furthermore, load shedding emerged as a pervasive hurdle, disrupting Internet access not only at home but also in public spaces like spaza shops for Ikeja access or the library. The impact of load shedding extends beyond mere inconvenience; it directly impedes learners' ability to engage with online resources. Additionally, network issues due to the geographical location further exacerbate the challenge, particularly for specific network providers.

Conclusion

These findings underscore the nuanced and interconnected nature of the digital divide in the context of Internet access. Unequal access at school, financial constraints affecting home access, and challenges in communal spaces collectively paint a picture of a complex, multifaceted issue. The identified challenges, while posing substantial barriers, also illuminate the resilience and determination of learners who, despite obstacles, employ creative strategies to navigate access to the digital landscape.

I now proceed to discuss Affordability. I report on the findings of this inquiry on the learner's ability to afford both digital devices and Internet connectivity.

6.4. Affordability of Digital Devices

Within the overarching theme of affordability, my investigation into the affordability of digital tools and Internet access unveils a mix of financial constraints, familial support, and adaptive strategies across all the participants' experiences. The four identified themes paint a nuanced picture of the socio-economic dynamics influencing learners' access to these essential tools, offering insights into the various pathways and challenges associated with digital ownership.

6.4.1. Ownership through Gifts or Family Support

Five out of six participants reported ownership of digital tools, including either laptops, tablets, or computers and also smartphones. The acquisition of these devices came in the form of gifts from family members or their parent's employers:

So, my grandfather is a manager at Securitas, so like every year in July or August they are given a new phone. So, they changed the one he had and then he gave me that [old] one. So that's how I got it... I got my laptop from my mother's employer (Participant 3-EMB).

This scenario highlights the role of familial support as a key determinant in the learners' acquiring their digital tools. It suggests that some learners, with the financial backing of their extended families, have been able to overcome the hurdles associated with acquiring these devices. The aspect of receiving a device as a gift introduces an

emotional dimension to digital access, highlighting a potential means of bridging the digital divide through familial generosity.

6.4.2. Access without Ownership

Two participants introduced a different dynamic where the participants did not personally own laptops, tablets, or computers but had access to these devices within their homes.

“My mother had a laptop, so I was able to use it, and I found ways to teach myself how to use it” (Participant 3-EMB, 2023).

This situation underscores shared access and raises questions about how effectively shared devices meet the individual needs of the learners. The presence of a digital tool within the household offers a level of accessibility, but the finding prompts an exploration of the effectiveness of “communal” access in addressing the unique requirements of each learner. It also invites consideration of potential disparities in device availability within households, as access might not necessarily equate to personal usage.

6.4.3. Smartphone Ownership

All the participants shared that they owned a smartphone at some point in their lives before the COVID-19 hard lockdowns (Focus group interview, 2023). The smartphone, a versatile and compact digital tool, is a common possession among learners. This finding did not come as a surprise considering that there were 112.7 million cellular mobile connections reported in South Africa as well as the growing smartphone penetration rate of 91% in 2019 (Ndulu *et al*, 2022, p.280).

Growing smartphone prevalence indicates a potential avenue for digital connectivity, even if traditional computing devices like laptops or tablets might be less accessible. My study concurs with Mkhize and Davids (2021, p. 25) in arguing that smartphones, often viewed as more affordable contributes to digital inclusion by providing a means of communication, information access, and even educational engagement. This study found that the majority of the participants owned smartphones suggesting that these devices might serve as a crucial bridge across the digital divide.

6.4.4. Lack of Ownership

Contrary to the above findings, one participant did not own a smartphone and two reported that they or their parents never owned traditional computing devices at home. This category of responses underscores degrees of disadvantage among the participants and a further gap in digital access because of socio-economic challenges such as the unemployment of their parents and overall unaffordability.

The participant shared with the group:

“I also never owned it (laptop or computer), I’ve always used my phone”
(Participant 1-SM, 2023).

The second participant highlighted a lack of ownership but had access to a laptop at home:

“I never owned a computer or laptop, I used my mother’s laptop and even a smartphone, I never had it back then” (Participant 3-EMB, 2023).

This then results in some township learners being more disadvantaged than others in their (or the family’s) ability to afford smartphones and/or laptops or tablets. Not owning these digital devices raises concerns about the extent to which some learners can fully engage with digital resources, particularly in an increasingly digitized educational landscape.

Conclusion

In conclusion, the examination of digital tools’ affordability through the lens of ownership unveils a complex interplay of familial support, communal access, and the prevalence of smartphones. Familial generosity demonstrated through gifts or purchases on behalf of learners, emerges as a significant facilitator of digital tools ownership. Communal access, as seen for some participants, offers a form of shared accessibility within households but prompts questions about equitable usage. The increasing prevalence of smartphones indicates a potential avenue for digital inclusion, offering learners a versatile tool for communication and information access.

However, the lack of ownership for some participants points to a potential digital gap, highlighting learners who may face challenges in fully participating in a digitally driven educational environment. As educational resources increasingly migrate online, understanding these ownership dynamics becomes crucial for crafting targeted interventions that address the specific needs and challenges faced by learners across diverse socio-economic backgrounds. The theme of affordability, as explored through digital tools ownership, thus becomes a key determinant in shaping the landscape of the digital divide.

6.5. Affordability of the Internet

The theme of affordability extends beyond digital tools ownership to encompass the vital aspect of Internet access. This sub-theme explores how learners grapple with the financial constraints associated with staying connected in a digital world, shedding light on the various strategies employed to secure Internet access and the sacrifices made in the face of economic challenges.

6.5.1. Parental support to buy Internet data or WIFI.

Four participants said they benefitted from their parental support, where parents/guardians financially contributed to Internet access through various means such as WIFI subscriptions, data plans, or uncapped hotspot vouchers from service providers like Ikeja (Focus group interview, 2023).

Additionally, this emphasises the critical role of parental involvement in overcoming the financial barriers associated with Internet access. As highlighted by Faloye and Ajayi (2022, p.1737) family background and parental support not only reflect a commitment to their child's educational journey but also has a major impact on an individual's knowledge of digital technologies.

6.5.2. Personal Expenditure for Internet Access

A contrasting scenario emerged where four participants personally bore the financial burden of Internet access. Whether through Internet cafes or mobile data purchases, these learners independently invest in sustaining their online connectivity. Two

participants commented that they sacrificed money that they could have used for something else (e.g., lunch money) to purchase data or access an Internet café.

“For me, I think it’s a must for me to pay because, at the end of the day, I have schoolwork to do. At the end of the day, this is my education, I am the one who wants to pass, so if I don’t pay for this I won’t pass. So, I think it’s a must for me to pay even if Silulo (Internet café) is expensive, I will pay, I don’t have any other choice... It’s a necessary sacrifice” (Participant 6-EM, 2023).

Interestingly, the key informant OB’s (2023) perception of the learners’ Internet affordability differed slightly from the learner’s perception. OB explained;

I wouldn't say they can't afford it. I would say a majority can afford it. Because you get to a time as you grow up when you need to make decisions. It's either the 20 rand that you're given for lunch, you use it for lunch, or you use it to buy data. Especially when you know that when you get home, your parents won't have money to give you to buy data. So, I would say that is a question where I would say... Yeah. Would I say it's 50-50? I would say it's 80-20. 80% of them can afford to buy themselves data. Yeah. But it goes with them making wise decisions. It's either they use the money that they have to get what they want - which is a want, not a need - or to buy data because they need to do their schoolwork. And then there's the 20% that does not have it at all. That does not carry money at all.

In the snippet above, the key informant OB (2023) challenges the straightforward notion of affordability, suggesting that the sacrifices that the learners make are necessary sacrifices that contribute to good financial decision-making. The example of choosing between lunch and data unveils a common dilemma, emphasizing the trade-offs individuals face in managing limited resources. The 80-20 split underscores a perceived gap, indicating that 80% of the learners are deemed capable of affording data through wise decisions, while the remaining 20% lacks the means entirely. The distinction between wants and needs adds depth. OB (2023) not only delves into individual financial dynamics but also hints at broader economic challenges, particularly evident in the reference to parents lacking funds for data. It presents a nuanced picture of financial decision-making, underlining the importance of understanding context and prioritizing expenses. However, for poorer students, the choices are sometimes between two needs rather than a need and want.

Furthermore, this theme raises questions about the financial autonomy of learners and the potential disparities in access arising from personal financial capacities. The willingness to spend personal funds underscores the perceived importance of Internet access in these learners' lives, particularly for educational purposes.

Participants and OB (2023) introduced a dimension of communal access to the Internet, emphasizing that free access points to public spaces like libraries. Additionally, the provision of a 15-minute free window provided by a local service provider such as Ikeja in Spaza shops adds to the strategies learners employ to overcome financial constraints.

“I would go to the Somalians (spaza shop owned by Somali nationals) for those free 15 minutes (Ikeja WIFI)” (Participant 4-EG, 2023).

This highlights the significance of communal spaces in providing avenues for free Internet access, albeit with limitations in duration. The utilization of free access options reflects the adaptive strategies employed by learners and communities to foster inclusivity.

Conclusion

The exploration of Internet affordability offers a comprehensive view of the diverse financial dynamics associated with staying digitally connected. Parental support, personal expenditures, and communal access represent different strategies employed by learners to navigate the financial landscape of Internet access. The provision of free access in public spaces is a crucial aspect of fostering inclusivity, acknowledging that not all learners have the financial means to independently secure internet access.

The identified challenges in overall affordability, coupled with the demonstrated willingness to sacrifice, paint a vivid picture of the socio-economic dimensions of the digital divide. As education becomes increasingly reliant on digital platforms, understanding the nuances of Internet affordability becomes imperative for crafting policies and interventions that ensure equitable access for all learners. The theme of affordability in Internet access is not just a financial concern; it's a gateway to educational inclusivity and digital participation, and addressing it is crucial for creating a more equitable learning environment.

The next section of the findings discusses the third theme that highlights the learner's levels of engagement with digital devices and Internet technologies.

6.6. Levels of Using Digital Devices and Internet Technologies

In exploring the learner's experiences of the digital divide before the hard lockdown, the theme Levels of Using Digital Tools encompasses the possession of basic computer literacy skills and proficiency in smartphone technology. The past experiences of the participants reflect a range of diverse digital competencies, challenges, and adaptive strategies.

The diagram in Figure 3 shows the findings of a basic digital literacy assessment, which I conducted to assess the learners' proficiency in basic computer skills and serves as a pivotal factor in their ability to engage with digital tools and educational resources.

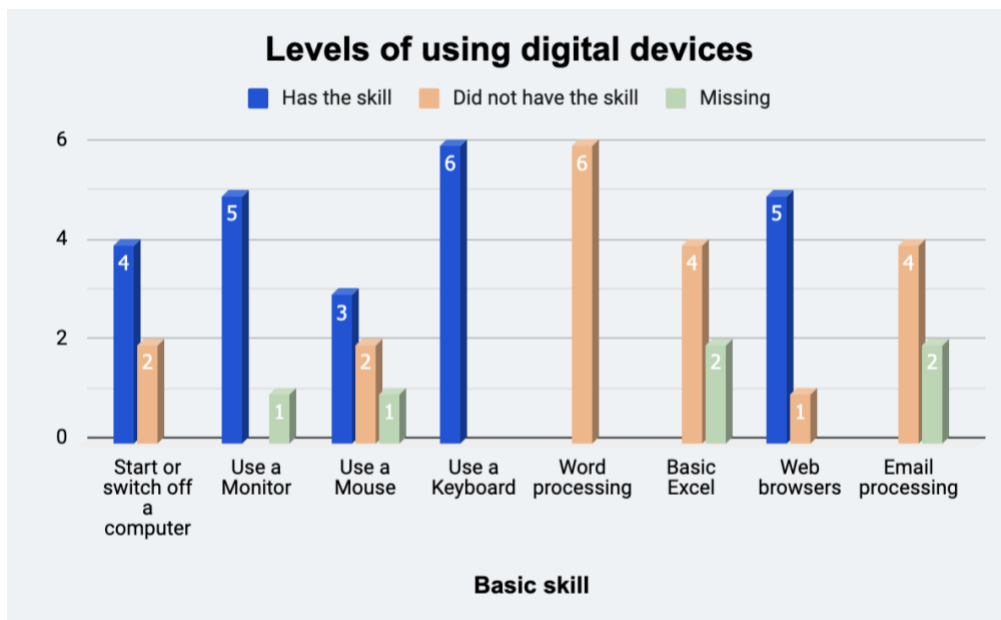


Figure 3: Learners' levels of using digital devices.

Participants' basic computer literacy skills were varied, offering a snapshot of their digital readiness. Four out of six participants exhibited basic hardware skills, demonstrating the ability to start or switch off a computer. However, a notable proportion, two out of six, lacked this fundamental skill. In terms of understanding the function of a monitor and navigating it, five out of six participants demonstrated proficiency (Focus group interview,

2023). When it came to using a mouse, three out of six were proficient in using the left and right-click functions, while two out of six faced challenges. Despite the mixed results in hardware skills, all six participants understood the function of the keyboard and basic typing (Focus group interview, 2023).

Moving to software skills, all participants reported their capacity to use software applications such as Microsoft Word or Google Documents for word processing. However, four out of six lacked basic Excel skills for working with spreadsheets and data calculation. Five out of six were proficient in email processing, while one participant did not possess this skill. Interestingly, four out of six reported challenges in using web browsers like Internet Explorer, Mozilla Firefox, Google Chrome, and Apple Safari (Focus group interview, 2023).

6.6.1. Smartphone Technology Proficiency

The sub-theme of proficiency in smartphone technology captures the learners' aptitude in utilizing smartphone technology and the challenges encountered in accessing digital devices and the Internet for educational purposes. As indicated by Ndulu *et al* (2022, p. 281), access to technology is incorrectly considered the end goal of digital inclusion. However, it should be considered as an entry-level to digital inclusion as access to digital devices and wireless network coverage does not always translate to quality usage (Ndulu *et al*, 2022. p.280). Therefore, it was critical to investigate the learner's smartphone technology proficiency.

All the participants reported high levels of capability in using smartphone technology (Focus group interview, 2023). This indicates a certain level of comfort and familiarity among the participants with the basic functionalities of smartphones. When asked about the specific technologies accessed on their smartphones, a spectrum of activities emerged within the theme.

One participant out of six engaged in email processing, utilizing the smartphone as a tool for digital communication (Participant 3-EMB, 2023). Another participant focused on word processing, highlighting a more comprehensive use of the smartphone for document creation (Participant 3-EM, 2023). Reading news became a smartphone activity for one

participant, highlighting the diverse ways that learners integrate digital tools into their daily lives. Two out of six participants used the Notes function on their smartphones for journaling, emphasizing the role of smartphones in personal expression and organization. Additionally, one participant utilized PDFs on the smartphone, demonstrating a broader spectrum of document engagement (Participant 3-EMB, 2023).

The predominant use of Google by four participants for school and general research underscores the integral role smartphones play in academic pursuits. Furthermore, three participants out of six engaged with social media, illustrating the dual function of smartphones for both educational and social purposes.

Despite having a basic understanding of how to use a computer or laptop and reporting high rates of smartphone usage. However, the learners would be considered "lower social class" users according to van Dijk's (2020) definition of the usage gap because they mainly use their smartphones for basic information consumption, such as scrolling through social media, engaging in WhatsApp conversations, and entertainment, rather than for more advanced information, communication, or activities that enhance their education or future career goals.

6.6.2. Challenges in using Digital Devices and the Internet

Four out of the six participants faced challenges primarily at the school level, characterized by password politics and unequal access to WIFI passwords.

“So here at school for you to get into the Internet, here at school there is WIFI so like there are those who know the password and there are those who don't know it. If you don't have the WIFI password, you ask the one who has it. For some, it becomes difficult because the one who knows the password will not want to share the password with others.”
(Participant 6-EM)

These challenges directly impacted the ease of using digital resources within the school environment, potentially hindering the seamless integration of technology into the learning process (Focus group interview, 2023).

The two participants who had access to capped WIFI at home encountered challenges in consistently using ICTs, notably related to affordability and network issues associated

with residing in a township location with poor connections (Focus group interview, 2023). One participant shared:

“There are a lot of us at home and so the network is troublesome (Akhona: You also have a router at home?) Yes. So, like it’s troublesome or poor but I feel it’s much easier than at school because people (learners) are difficult with the password. So, the one at home is much more reliable for me.” (Participant 5- EB, 2023).

These challenges pointed to socio-economic barriers that influenced learners' usage of digital tools within their immediate living environment. Additionally, the findings illuminated challenges at the community level, particularly concerning library usage. Despite having access cards, two participants out of six reported obstacles they faced that are related to limited time and resources, discouraging library utilization (Focus group interview, 2023).

Participant 2 SM (2023) shared some of the disadvantages she noticed;

“Here at the library, there was easy access to technology because if you had the access card you were able to come and do your own things. But then the disadvantage was that a lot of their computers were not working and so if they are few that are working, there would be a long line waiting to use 1 computer...”

Challenges at the community level were added by issues with free access at Ikeja due to network problems and the financial burden of expensive hotspot vouchers and Internet cafes (Focus group interview, 2023). These challenges affected the learners' ability to consistently use ICTs.

The impact of load shedding, as revealed earlier, disrupted the regular schedules, creating irregularities in the electricity supply. This unpredictability affected learners' usage of digital tools, compounding the challenges posed by other factors.

6.6.3. Effect of Challenges on Learners' Capabilities

The challenges articulated by the participants had tangible effects on their capabilities. Participant 5-EG (2023), facing the dual challenge of unreliable access and financial constraints due to parental unemployment, reported a significant limitation in his ability to use ICTs to conduct research at home;

“I rely on the school WIFI because we don’t have it at home. If I’m at home and I have schoolwork I have to buy data. So sometimes I don’t have money to buy data, so I have to do my work, do research here at school...” (Participant 4-EG).

The dependence on access at school highlights the pivotal role of consistent and affordable digital access in supporting learners' educational endeavours.

In summary, the sub-theme of smartphone technology proficiency provides insights into learners' varied and extensive use of smartphones for both educational and personal purposes. The challenges highlighted by the participants emphasize the intricate nature of the digital divide. Issues such as affordability, network access, institutional barriers, and external factors are linked to the limited use of ICTs by learners. These challenges collectively shape the learners' capabilities, highlighting the intricate relationship between technology, socio-economic factors, and educational opportunities in their lives.

Chapter 7

Findings: Learners' Experiences of the Digital Divide During and After the COVID-19 Hard Lockdown Period

Chapter Introduction

This third installation of findings presents the digital divide experiences of learners **during and after** the COVID-19 hard lockdown. In this chapter, the aim is to answer the first sub-research question “What were the learner’s experiences of the digital divide during the COVID-19 lockdown?” and to do so comparatively to show how hard lockdown magnified the learners’ experiences of the digital divide. Six overarching themes take centre stage and are discussed as follows; (1) Accessing and using digital devices and the Internet at home (2) Learning environment at home (3) Online Learning Experiences (4) Coping strategies (5) Academic Performance (6) life after the hard lockdown. This part of my investigation aimed to shed light on the extent to which learners had access to the essential tools for remote learning and their resourcefulness during this challenging period of the hard lockdown. Furthermore, I explored their digital divide experiences after the hard lockdown to understand whether their experiences changed and whether the learners learnt anything from the lockdown.

To introduce the subject matter of this chapter, Table 1 provides a comparison of the learners' experiences of the digital divide across the contexts of before, during, and after the COVID-19 hard lockdown. By examining the hallmarks of the digital divide outlined in the findings of chapter six, the study seeks to explore the question of what aspects of the digital divide changed and what remained constant during the aforementioned periods.

Table 1: Comparison of digital experience before, during and after COVID-19 hard lockdown.

| Hallmark of the digital divide | | Period/Context | | |
|--------------------------------|---|--|--|--|
| | | Experiences Before the COVID-19 Hard Lockdown | Experiences During the COVID-19 Hard Lockdown | Experiences After the COVID-19 Hard Lockdown |
| 1 | Access to digital devices such as smartphones, tablets, or laptops at school and at home. | All participants had access either to a smartphone, laptop at home, computers from school, library, or a local Internet café. | <ul style="list-style-type: none"> 3 out of 6 participants had access to smartphones. 2 out of 6 had consistent access to a laptop at home. No access to school or community digital resources. | Access remained the same as before COVID-19. |
| 2 | Access to reliable Internet | 1 out of 6 participants had consistent access to reliable Internet access. | <ul style="list-style-type: none"> 3 out of 6 had consistent access to reliable Internet at home. | Access remained the same as before COVID-19 |
| 3 | Affordability of digital devices | All learners could not afford digital devices. All the digital devices that the learners had access to or owned were either gifted by their parents, family members or their parent's employers. | <ul style="list-style-type: none"> Same as before COVID-19 hard lockdown | Same as before COVID-19 hard lockdown |
| 4 | Affordability of reliable Internet | All learners could not afford consistent and reliable Internet | <ul style="list-style-type: none"> Same as before COVID-19 hard lockdown | Same as before COVID-19 hard lockdown |
| 5 | Levels of using digital devices | Poor according to Van Dijk (2020) usage gap definition | <ul style="list-style-type: none"> Same as before COVID-19 hard lockdown | Same as before COVID-19 hard lockdown |
| 6 | Levels of using the Internet | 5 out of 6 displayed poor levels of usage | <ul style="list-style-type: none"> Same as before COVID-19 hard lockdown | Same as before COVID-19 hard lockdown |

7.1. Access to Digital Devices and Reliable Internet

In seeking to understand the experiences of the learners of the digital divide during and after the hard COVID-19 lockdown, the first finding revealed the diverse landscape of access to digital devices during and after the COVID-19 lockdown. Three out of six participants had smartphones, positioning them as a basic but crucial tool for connectivity and potential online learning engagement during the lockdown period.

“I had this phone but never left home, my parents did not want me to leave the house during level 5, level 4” (Participant 4-EG, 2023)

However, the second finding starkly contrasted this, revealing that four out of six participants lacked access to other digital devices such as laptops, computers, or tablets during the hard lockdown. One participant shared with the group. One participant said:

“I did not have access (to digital divides) because I remember clearly that I did not have a phone at that time so I couldn’t connect to the Internet at all” (Participant 2-OM, 2023)

This discrepancy underscores the unequal distribution of technological resources among the participants, laying the foundation for a distinct digital divide.

Furthermore, this theme delved into the broader context of access beyond personal devices. Participants reported a lack of access to digital tools at school, libraries, or Internet cafes, directly attributing this deficit to the stringent lockdown measures at the beginning of the COVID-19 period. The sudden closure of these external avenues compounded the challenges faced by learners, limiting their options for accessing online educational resources.

“I would say we were not able to access (digital devices) properly. As I said previously, we used the library, Silulo and the school. Then [during the hard lockdown] we were not going to school, the library was closed, Silulo was closed and so like we depended on Ikeja and then data. So, we did not have access [to digital devices]” (Participant 1- SM, 2023)

When exploring the dimension of reliable Internet access at home, the findings revealed a nuanced scenario. Three out of the six participants enjoyed uninterrupted connectivity, providing them with a stable online environment. However, the other half of the

participants faced severe constraints. The lockdown periods impacted on services outside the home and meant that three participants did not have access to reliable Internet due to the closure of schools, libraries, and Internet cafes, coupled with their domestic financial constraints.

After the hard COVID-19 lockdown, the participants reported that access to digital devices and reliable Internet in public spaces went back to the same as before the lockdown.

In coping with the limitations imposed by the lockdown, some participants resorted to accessing the Internet through purchasing data on their own. This adaptive strategy, while resourceful, highlighted the participants' resilience and determination to continue engaging with the digital realm despite the constraints imposed by the pandemic.

7.2. Continuation of Learning Online

As my inquiry delved deeper, the follow-up question regarding the continuation of online learning painted a sombre picture. None of the participants reported the facilitation of online learning by their school. This stark uniformity in their responses highlights a systemic failure by the public education system to bridge the digital gap during the hard lockdown. The absence of online learning opportunities underscored the broader challenges faced by educational institutions in rapidly adapting to the new “normal” that was imposed by the pandemic.

Unequal access to digital devices, variations in Internet connectivity, and the lack of online learning facilitation collectively paint a picture of educational disparities exacerbated by the pandemic. These revelations not only highlight the immediate challenges faced by learners but also beckon a broader discussion on the imperative of inclusive and resilient educational frameworks in the face of unforeseen disruptions.

7.3. Alternative means of Online Learning from Home

Though there were no online classes facilitated by the school during the hard lockdown, some learners found other means of using digital resources to continue learning from home. The theme of familial support re-emerged whereby three out of six participants reported that their parent or family friends' support and guidance enabled them to

continue learning from home with help from other means such as the DSTV Learning Channel of the Department of Basic Education's (DBE) Workbooks. One participant shared with the group:

“My best friend's aunt and her mom are into education. If I'm there [at my best friend's home] for the school holidays or she is visiting at my home, they want us to study online. Every time we're on a video call for like 3 hours, they want to know that we are TV studying or on the laptop or working in our schoolbooks. They are addicted to school” (Participant 3 – EMB, 2023).

Another participant shared their alternative tool of learning from home and how their parents supported them during the lockdown;

“I would say our parents supported us. For instance, my parent heard that learners could study in a certain place, and they would let you know when they got home. I also heard about one of the studying channels on TV from my mother. She came home saying “I heard you can learn from the TV...” (Participant 5– EB, 2023)

This insight highlights the critical role that commonly available digital tools, such as a TV, as well as family support play in facilitating continued education during crises.

However, it is worth noting some of the participants, either did not have access to resources such as DSTV due to socioeconomic challenges at home or they did not get the above-mentioned support from family members or friends. The lack of resources or family support discouraged them from taking the initiative to continue learning from home. One participant boldly shared their experience;

“No, for me there was no parent that said I must study (from home) so I was not studying [during the hard lockdown period]” (Participant 1 – OM, 2023).

This finding is indicative of systemic challenges in helping learners in need adapt their educational practices to the realities of the digital age, especially in times of crisis.

7.4. The impact of the hard lockdown

The next section discusses the challenges and limitations faced by learners in accessing educational resources during this unprecedented period of the hard lockdown and how these hurdles impacted their learning capabilities.

7.4.1. Learning Gaps and Subject Limitations

My study examined the tangible consequences of the lockdown on the participants' academic progress. Participants reported learning gaps, particularly in subjects that were not taught during this challenging period. The majority of the participants raised concerns about the lack of support from the school, especially their teachers as some displayed apathy toward the reality of their knowledge gaps. One participant explained how some of their educational challenges during COVID-19 started with teachers not completing the school syllabus in previous years and they had gaps in the knowledge of certain subjects. as follows;

“I did not learn online during those [hard lockdown] times... When my dad forced me, then I used those things called DBEs, those workbooks we study from. The challenges I faced here [in Grade 11] started in Grade 9 where we didn't cover some topics that we also didn't cover in Grade 8 and they are the ones that got me” (Participant 4 – EG, 2023).

The COVID-19 pandemic exacerbated educational challenges that were already present before its onset and highlighted pre-existing gaps in the learners' knowledge. One significant factor contributing to these challenges was the incomplete coverage of grade-related syllabi by teachers. The consequences of this shortcoming were compounded during the pandemic, as the sudden transition to remote learning environments placed additional strain on students who were already struggling with foundational gaps.

7.4.2. Closure of Internet Cafes, Libraries, and public learning spaces

The second sub-theme is about the closure of Internet cafes and libraries, traditionally valuable hubs for research and learning. These spaces were resourceful in bridging the digital divide for the learners who could not afford reliable Internet or computers at home before the COVID-19 lockdown period. However, participants reported that the

unavailability of these external sources of connectivity during hard lockdown accentuated the far-reaching consequences of the lockdown on their learning capabilities.

The closure of these public spaces, such as libraries, during hard lockdown not only restricted access to information but also curtailed the diverse learning experiences that extended beyond the confines of home. While the exact number of participants affected was not specified, the thematic focus highlighted a shared struggle among learners in accessing essential educational materials.

7.4.3. Inconsistent Internet Access and Affordability

Another sub-theme is about the dual challenges of inconsistent Internet access and affordability. This pervasive issue limited learners' ability to continue learning from home. The lack of a stable and affordable Internet connection during the hard lockdown emerged as a common theme across the participants' experiences, which hindered the learners from fully participating in online educational activities. The experience of Participant 6 – EM illustrates the nature of the problem. EM is a learner whose mother was a college student who financially supported her family through a stipend she received from college. When educational institutions closed during the hard lockdown, EM's mother's finances were disrupted, and she could no longer afford to meet all the family's needs. EM elaborates:

“So I could not (afford) at all because for instance since I have a phone at home, most of the jobs were closed so at home a person would say “Can I have money for data” and a parent would respond “I don't have money... so I could not afford to buy data and the school was also close as well as the library” (Participant 6 -EM, 2023).

In conclusion, the above-mentioned key findings under the sub-theme of accessing and using digital devices and the Internet at home during the COVID-19 hard lockdown reveal the complexity of the challenges faced by learners. Learning gaps, the closure of external research spaces, the absence of online learning opportunities, and the hindrances posed by inconsistent Internet access and affordability collectively paint a picture of how the multifaceted digital divide grew under the COVID-19 hard lockdown. These challenges not only highlight immediate impediments to learning but also beckon a broader

discussion about the resilience of educational systems in the face of unforeseen disruptions and the imperative of inclusive, equitable access to digital resources that can withstand extreme crises such as pandemics, which are bound to re-occur in the future.

7.5. Learning environment at home

Further reflection on the learner's experiences of the digital divide during the COVID-19 lockdown led to an exploration of the sub-theme of the learning environment at home, which emerged as a critical factor that shaped the continuation of the learners' educational journey.

7.5.1. Motivation and Resources

As mentioned previously, three out of six learners continued their learning from home during the hard lockdown and were motivated by parental support. In the absence of traditional classroom settings, these learners navigated their educational journey through alternative means such as utilizing Department of Basic Education (DBE) workbooks and engaging with the DSTV Learning Channel. This group of learners encapsulates a positive dimension within the challenging circumstances, where motivated learners, buoyed by parental encouragement, found ways to adapt to the new normal of home-based learning.

7.5.2. Disconnection from Learning Resources: Lack of Awareness

Conversely, two out of six participants revealed in stark contrast that they did not continue learning during the lockdown, and they were not even aware of at-home learning resources like the DSTV channel. This finding underscores the disparity in access to information and educational resources and the critical role played by guardians in supporting learners' education. The lack of awareness of available learning channels suggests a critical communication gap or accessibility issues, which contributes to the widening digital divide experienced by some learners.

7.5.3. Challenges in Creating a Conducive Study Space at Home

The enquiry also delved into the environmental challenges learners faced in creating a conducive space for studying at home. Five out of six participants reported that they did

not have an ideal study environment (Focus group interview, 2023). Factors contributing to this included the responsibility of taking care of younger siblings, competing for the limited TV time with other family members, and the absence of a quiet space to study (Focus group interview, 2023). These challenges highlight the broader societal and economic factors influencing the domestic learning environment and associated disparities, which the lockdown magnified.

7.5.4. Parental Support and Limited Teacher Interaction

As mentioned previously, the crucial role of parental support in the home learning environment played a huge role for some learners during the lockdown. Three out of six participants received support from parents or other family members to study at home. The positive impact of this support extended beyond mere assistance with academic tasks. It fostered curiosity and awareness of available learning opportunities. However, alarmingly all participants reported a lack of support from their teachers during the hard lockdown period.

The significance of parental support in narrowing the digital divide is often underestimated and some may argue that it is tangential. However, this study's findings underscore the pivotal role parents play in reducing the educational gap during challenging times. Parental support encompasses various critical factors, including financial resources, digital literacy, and engagement, all of which significantly contribute to addressing the digital divide. Families with greater financial means can provide enhanced access to technology and educational resources, while parents with advanced digital literacy can effectively guide and support their children's digital development. Additionally, parental attitudes and involvement significantly shape children's use and perception of technology. A comprehensive approach to addressing the digital divide must prioritize enhancing parental support across all socioeconomic backgrounds, improving digital literacy for parents and children, and ensuring equitable access to technology and educational resources.

In conclusion, the findings describe the multidimensional nature of the digital divide, extending beyond the technological aspect to encompass socio-economic factors and the

quality of the home learning environment. These findings reveal how motivation, parental support, awareness about alternative digital resources and environmental challenges collectively shaped learners' educational experiences during the COVID-19 lockdown. These insights prompt critical reflections on the need for comprehensive support structures and equitable access to educational resources to ensure a more inclusive and resilient educational system in the face of unforeseen disruptions.

7.5.5. Distractions and Difficulties: Navigating the Learning Environment at Home

Two participants faced the challenging reality of having parents who worked as essential workers during COVID-19. This circumstance compelled them to shoulder the responsibility of taking care of younger siblings when their parents were at work. One participant shared her experience:

“My friend and I had to look after her younger siblings while we were studying at home. We would be busy with the live tutorial from the DSTV channel, and we would get distracted from watching the live tutorials by the siblings...You will never get the tutorials if you missed them... the problem is that their mother was a nurse and she had to work during the lockdown time” (Participant 3 – EMB, 2023).

The intersectionality of these multiple roles added layers of difficulty to the participant's learning experience during COVID-19 lockdown periods. The need to balance caregiving responsibilities with academic pursuits underscores the intricate web of challenges that emerged during the lockdown period. This dual role not only demanded time and attention but also highlighted the resilience and adaptability of these learners in navigating an environment where traditional support structures were disrupted.

7.5.6. Limited Access to Educational Programmes at Home

Some participants shed light on the challenges faced by learners who had access to DSTV learning channels. These learners encountered difficulties due to the continuous simultaneous presence of all family members at home during the hard lockdown (Focus group interview, 2023). Additionally, Participant 6 – EM (2023) shared her experience of how having a lot of family members engaging in their TV programs hindered her from

accessing live educational programs or tutorials. This disruption highlights a practical aspect of the digital divide, extending beyond mere access to devices and the Internet. It touches upon the intricacies of shared spaces and resources within the household, revealing how sharing these resources impacts a learner's ability to fully engage in educational activities.

7.5.7. Sibling Distractions during Lockdown

Participant 3 - EMB introduced another layer of distraction, where she mentioned the challenge of being distracted by siblings (either much older or much younger) who were not engaged in learning activities during the lockdown. The dynamics of shared space and the presence of family members not actively participating in educational pursuits posed an additional obstacle to maintaining focus. This finding underscores the need for an individualized and conducive learning environment, especially in households with multiple learners navigating the complexities of a lockdown period.

These findings highlight the need for a nuanced understanding of the digital divide, moving beyond mere notions of access to devices and Internet connectivity. The challenges faced by learners in their home environments during the COVID-19 lockdown stress the importance of holistic support structures that address the multifaceted nature of educational disparities. As we reflect on these experiences, it becomes evident that bridging the digital divide requires a comprehensive approach that considers not only technological access but also the socio-economic and environmental factors shaping the learners' educational journey.

7.6. Coping Strategies During the COVID-19 Lockdown: Navigating the Digital Divide

Another sub-theme in this section is how the learners coped with the digital divide during the hard lockdown. I now turn to a discussion of what found in my investigation of this theme.

7.6.1. Motivation as a Driving Force

Half of the participants exhibited remarkable resilience by managing to continue their learning from home under lockdown. What fuelled this perseverance was the motivating influence of parents. For the three participants who managed to continue their studies, the support from parents not only encouraged their desire for education but also heightened awareness of the learning opportunities available at home. This dual effect indicates that a supportive home environment can act as a catalyst for educational engagement and exploration. The unwavering parental support emerged as a driving force, propelling these learners to navigate the complexities of remote education. This finding underscores the significant impact of familial support in mitigating the adverse effects of the digital divide. While not all participants continued their learning, those who did revealed the pivotal role that parental motivation played in overcoming the challenges posed by the lockdown.

The education system did not completely fail learners during the pandemic. The next sub-theme acknowledges the support, though insufficient, that the Department of Basic Education did provide to learners from disadvantaged communities.

7.6.2. School Support through Workbooks

This section of the findings sheds light on the role of the school in supporting learners during the lockdown. While no online learning was facilitated, the school provided Department of Basic Education workbooks to aid the educational process. This approach, while traditional, reflects a tangible effort by the school system to bridge the digital gap by offering offline resources. The distribution of workbooks stands as a testament to the adaptability and resourcefulness of educational institutions in the face of unprecedented disruptions. Although it may not entirely replace online learning, this strategy highlights the importance of leveraging available resources to maintain educational continuity.

However, it is worth noting that the participants did not find this intervention appealing, especially during the lockdown as it was not supplemented by continuous support from their teachers (Focus group interview, 2023).

7.6.3. A Note on Teacher Support

A notable side note that emerged across all themes is the absence of support from teachers in facilitating online learning initiatives during the hard lockdown period. This finding underscores the challenges faced by learners in accessing continuous guidance from educators during the period of remote learning. The lack of teacher support raises questions about the adaptability of educational systems to sudden disruptions and the need for innovative approaches to maintain effective teacher-student communication. It is disappointing that a technology such as WhatsApp, which many learners have on their cell phones or the phones of family members, was not used regularly to communicate with learners during hard lockdown.

In conclusion, the coping strategies employed by learners during the COVID-19 lockdown highlight the interconnected roles of parental motivation, school support, and individual curiosity. As we navigate the evolving landscape of education, these findings reiterate the importance of holistic strategies that encompass familial, institutional, and individual dimensions in mitigating the impact of the digital divide on learners' educational trajectories.

Another theme that I examined in my study was about academic performance during lockdown.

7.7. The Impact of the Digital Divide on Academic Performance during the COVID-19 Hard Lockdown

At a time when education depends on connectivity, the link between academic performance and the digital divide deserves investigation.. Through participant responses, the multifaceted impacts on academic endeavours become evident, painting a nuanced picture of the struggles faced by learners.

7.7.1. Identifying Learning Gaps Post-Lockdown

The learner's retrospective view revealed significant learning gaps, particularly in subjects like Life Orientation, Geography, and Life Sciences.

“Yes, also other subjects like LO, Geography and History... We only learnt them in term one and then we did not learn them for a year” (Participant 2-OM, 2023).

Participant 2-OM (2023) comments suggest that the repercussions of the digital divide manifested in terms of educational inequalities, with certain subjects receiving less attention or resources during the hard lockdown. The identification of these gaps post-lockdown emphasizes the need for comprehensive strategies to address disparities in learning experiences.

7.7.2. Inability to Catch Up on Learning Gaps

A recurring theme in participants' responses was their inability to catch up on lost learning after the lockdown or to address the learning gaps generated during the hard lockdown. The current curriculum obligations served as a barrier, hindering their capacity to revisit previous material and bridge the educational divides that emerged during the lockdown. Additionally, the education system did not only fail learners during the hard lockdown but the ongoing difficulties that teachers encounter daily were exacerbated.

7.7.3. Teachers' Struggles and Learners' Dissatisfaction

Participants shared insights into the struggles faced by teachers in assisting learners to catch up. The common issues in the public education system are characterized by heavy teacher workloads, contributing to a perception by learners and the general public of teacher apathy. Learners reported instances where teachers urged them to catch up on their own, showing a lack of enthusiasm to provide guidance or assistance (Focus Group interview, 2023). The dissatisfaction among learners extended to the absence of a “ramp-up” strategy in preparation for exams post-lockdown. They voiced concerns about a sudden jump in exam mark allocations from 50 to 300 without adequate preparation or ramp-up support (Focus Group Interview, 2023).

In addition, learners felt that the school and teachers could have played a pivotal role in facilitating a smoother transition from the lockdown period to the “post-lockdown new normal”. One learner shared a disappointing experience with a teacher who displayed a recurring pattern of apathetic attitudes from some teacher;

“Now in grade 11, the Geo teacher can ask something that we were meant to do in grade 9, but we never did, only a few topics were covered... Even the Life Science teacher would ask terminologies and she would say - in a condescending tone, “You should have done this in grade so and so” and now we are back to normal... When we respond and say (to the teacher) we did not learn this, the teacher says it’s not their problem and that we were given a chance to study at home (referring to studying through DBE workbooks)” (Participant 3- EMB, 2023).

Moreover, a heart-breaking realization surfaced as learners connected the dots between the learning gaps experienced during the hard lockdowns and their current circumstances. Participant 6-EM (2023) shared her concerns:

“I feel bad about this whole thing because since I did not study during the hard lockdown, this thing has come back to bite me and also our ruling government continues to fail us somewhere, somehow, and also, they are not sympathising with us. Because if they sympathised with us, especially those who experienced the COVID-19 what-what (referring to the bad impact of COVID-19). They should help us with some things like giving us marks and stuff” (Participant 6- EM, 2023).

As indicated by Participant 6-EM, the lack of online learning during the lockdowns is perceived as a contributing factor to the existing knowledge gaps. Participants expressed concerns that these gaps may hinder their opportunities and prospects, highlighting the far-reaching consequences of the digital divide on academic trajectories.

7.7.4. The Silver Lining of DBEs

Amidst the challenges, a positive observation emerged for those who utilized the Department of Basic Education (DBE) resources during the hard lockdown. Learners expressed that these materials somewhat assisted them in catching up on the workload from the previous grade.

“In grade 9 during COVID-19 we were not taught by the teachers, but we taught ourselves through the DBEs” (Participant 5– EB, 2023)

This finding highlights the potential efficacy of targeted educational resources and learner agency, even in the face of broader challenges posed by the digital divide.

7.7.5. Persistent Digital Disparities at School

As indicated in the table at the beginning of this chapter, despite the passage of time since the hard lockdowns, participants lamented that little has changed in terms of access to digital devices at school (Focus group interview, 2023). The computer lab remains a resource accessible on a teacher-subject basis, highlighting the limitations of equitable digital access. Additionally, access to school WIFI is contingent upon possessing the password, underscoring the persistent disparities in connectivity within the school environment.

7.7.6. Dominance of Smartphones in Digital Access

The participants expressed that the school and teachers could have provided better support, particularly in preparing them for the transition to the "new normal". For example, the abrupt shift from 50 to 300 exam mark allocations posed a considerable challenge, and learners felt a lack of adequate support in navigating this adjustment. This sentiment aligns with their current post-pandemic reality with reported drops in marks attributed to the unaddressed knowledge gaps and the absence of adjustments to the evolving academic landscape.

7.7.7. Collective Call for Action: The Learners' Plea

In the aftermath of their reflections, participants shared some insightful recommendations aimed at improving the digital learning landscape.

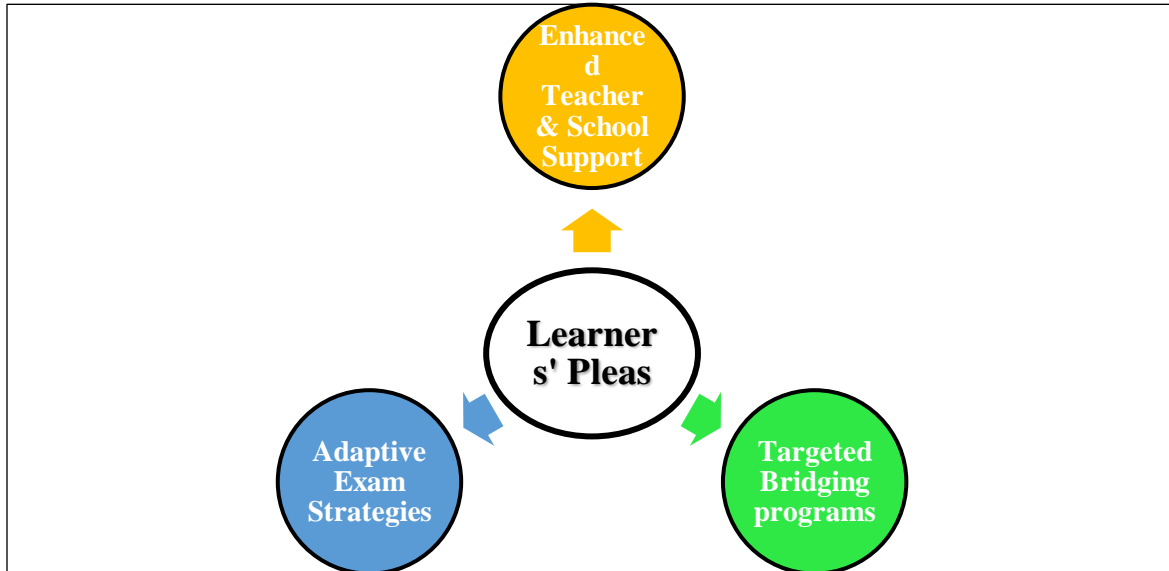


Figure 4: Learner Recommendations

With regard to enhanced teacher and school support, the learners emphasized the need for heightened support from both teachers and the school administration. This support extends beyond the immediate challenges of online learning to include comprehensive strategies for transitioning back to traditional classroom settings (Focus group interview, 2023). For example, the school could use student-centric tools such as [Reflective Learning](#), an innovative online tool that empowers teachers to assist their learners in overcoming knowledge gaps in Math and English. This tool operates by presenting individualized learning paths to students, which are determined by diagnostic assessments, and monitors their progress towards mastery, starting from their most recent point of secure comprehension (Reflective Learning, 2023). The tool's distinct methodology concentrates on cultivating the student's metacognition, thereby fostering their ability to be self-sufficient lifelong learners. The participants voiced their call for more gradual approaches to such transitions and additional support mechanisms such as Reflective Learning (Focus group interview, 2023).

Conclusion

In response to the central research question, this chapter has unveiled findings that delve into the experiences of learners during and after the COVID-19 hard lockdown. Moreover, I've delved into the reflections and suggestions shared by learners post-lockdown,

offering insights into their perspectives and aspirations for improvements in their educational journey. These findings highlight enduring challenges tied to the digital divide, the changing role of smartphones in education, and the crucial need for supportive measures and adaptable strategies. Furthermore, these findings indicate that despite the Department of Basic Education having commendable policies and ambitious goals for e-Education, there was a lack of progress in making ICTs and e-Learning resources more accessible to learners in the country, particularly in the aftermath of the pandemic. As we contemplate the future of education post-pandemic, these insights and suggestions act as guiding lights, steering us towards a more inclusive and resilient educational landscape.

The following chapter reflects on these key findings in relation to the theoretical framework, the themes discussed in the literature review, the proposed recommendations, and any acknowledged limitations to provide a comprehensive understanding of the study's outcomes.

Chapter 8: Discussion

Chapter Introduction

This chapter provides an opportune moment to revisit the central research question: How did the COVID-19 hard lockdown magnify a Khayelitsha group of high school learners' experiences of the digital divide and reveal the extent to which they were able to overcome these challenges in the context of their education?

Additionally, the overarching purpose of this chapter is to reflect on how the insights gleaned from the experiences of learners from under-resourced schools during the COVID-19 lockdown can inform the government's e-Education initiatives that are designed to bridge the digital divide and mitigate associated inequalities. This chapter includes my critical reflections as I weave together the strands developed from the key findings of the study. Furthermore, the key findings highlight three overarching themes, namely access, affordability, and usage. Furthermore, I contemplate the essence of the findings in relation to Sen's (1999) Capability Approach as this study's guiding theoretical framework and the associated literature addressing the digital divide within the education sector. I begin by briefly recapping this study's conceptualisation of the digital divide as a development issue.

Discussion of Selected Themes

The digital divide, traditionally conceptualised as a mere issue of access to technology - encompassing deficient telecom infrastructure, substandard Internet connectivity, and limited availability of digital devices - is a more complex phenomenon (Thomas and Parayil, 2008, p.410). As highlighted through this research report along with authors such as Thomas and Parayil (2008) and Lima (2015), the digital divide transcends the realm of access, it is part of a broader developmental problem. In addition, the digital divide has been an issue that existed before the COVID-19 hard lockdown period but was magnified by the pandemic, especially during the hard lockdown periods. Before, during and after the pandemic, substantial segments of the global population lacked the necessary skills to not only engage with information and communication technologies (ICTs) but also to

effectively use the information provided by these ICTs into valuable knowledge that can facilitate the pursuit of their desired life trajectories (Thomas and Parayil, 2008, p.410).

The COVID-19 pandemic-imposed lockdown provided in-depth insights into the intricacies of access to ICTs in education. It particularly brought to light the impact of this access on traditional educational methods. Before and after the lockdown, learners often underestimated or normalised the challenges they faced in accessing digital resources and reliable Internet connections (Focus group interview, 2023). While some learners had consistent access at home, others relied on school and public resources, such as computer labs, libraries, and Internet cafes. Access was also influenced by social connections or gatekeepers within the school community, illustrating the complex nature of digital inclusion (World Benchmarking Alliance, 2022, p.9). The main difficulties faced by learners ranged from school-based constraints to home-based struggles. Additionally, structural barriers, such as load shedding and financial limitations, became apparent. NGO interventions played a crucial role in overcoming these access issues, but they were not without their own set of challenges, as highlighted by Kronkë (2020). The study's findings revealed the resilience and resourcefulness of learners in the face of these structural and socioeconomic challenges, which may have contributed to their underestimation by the government and educational decision-makers.

However, the abrupt shift to remote learning during the hard lockdown amplified an existing problem of the digital divide and underscored the glaring disparities in learners' access to technology and educational resources (Ndulu *et al*, 2022). During the lockdown, learners' resourcefulness and adaptability became evident as they navigated the challenges posed by the sudden shift in learning modalities. This period unveiled the need for a comprehensive re-evaluation of conventional notions of access, emphasizing not just the availability but also the effective utilisation of resources. Numerous scholars, including Ndulu *et al.* (2022) and Mkhize and Davids (2021), identified similar patterns in their research. These findings are particularly noteworthy as they underscore a persistent lack of urgency in addressing the digital divide, especially within the public education system. For example, despite commitments made to bridge the digital divide almost two

decades ago in the DBE White Paper and aligning with the National Development Plan (NDP), most of these commitments remain unfulfilled.

It is crucial to recognize that the prolonged unfulfilled promises of the government in the realm of e-Education reveal systemic challenges. This lack of progress not only impedes development in bridging the digital divide, but it also reflects broader issues in policy implementation and adaptability within the education sector. Furthermore, a critical analysis should consider the potential consequences of this lack of urgency, such as perpetuating educational inequalities and hindrances to the development of a technologically inclusive learning environment. Addressing these systemic challenges requires not only policy revision but also a concerted effort to align commitments with actionable strategies, ensuring tangible progress in combating the digital divide in education.

Affordability and the Digital Divide

The affordability of digital devices and reliable Internet is intricately linked to the digital divide. Learners from economically privileged backgrounds benefit from familial support and the ownership of devices such as laptops and smartphones. This aligns with the digital inequality literature, emphasizing that ownership disparities contribute significantly to the broader digital divide (Mkhize and Davids, 2021).

In contrast, participants lacking ownership reveals a potential gap in digital access. The absence of personal computing devices can limit learners' engagement with online educational resources, hindering their ability to develop essential digital skills. Scholars like Lembani *et al* (2019) have highlighted the importance of personal ownership in fostering digital literacy and narrowing the digital divide gap.

The financial dynamics associated with Internet access further amplify the digital divide. Parental support, personal expenditure, and communal access represent varied strategies employed by learners to secure Internet connectivity (Focus Group, 2023). The willingness to make sacrifices underscores the perceived importance of Internet access in learners' lives, aligning with studies emphasizing the significance of Internet connectivity for educational inclusivity (Focus Group 2023).

However, challenges related to affordability pose barriers, particularly for learners facing financial constraints. This resonates with Innovation Edge's (2022) argument that while there has been an increase in technology affordability, owning a technological device without Internet access has little to no benefit. In South Africa, data costs remain higher than in all the other countries in the continent of Africa and the ICT infrastructure remains weak in poorer areas (Innovation Edge, 2022). Learners relying on communal spaces or free access points may face limitations in duration and resources, contributing to the persistence of the digital divide.

The affordability issue, both in terms of devices and Internet access, has direct implications for educational equity. Learners with limited access may struggle to participate fully in the increasingly digitized educational landscape, perpetuating existing disparities. My findings align with the broader discourse on the socioeconomic dimensions of the digital divide, emphasizing the need for targeted interventions to ensure equitable access to digital resources.

This thesis proposes that overcoming the digital divide requires a holistic, collaborative, and multifaceted strategy. The magnification of issues related to the digital divide during the COVID-19 lockdown period highlighted that the agency of learners and family support requires further attention. One potential solution could be government or private sector-funded ICT interventions for poor families. Learners' experiences have highlighted that access to Information and Communication Technologies (ICTs) at home and in the community is often more versatile and better than at school. However, affordability poses a significant challenge for most learners. Therefore, specific interventions should aim to bridge the digital divide between school and home by providing affordable computing devices and reliable Internet solutions to students' homes. This approach acknowledges that ownership and affordability are pivotal elements of digital inclusion (Ndulu *et al.*, 2022; Mkhize and Davids, 2021). The proposed intervention strategy necessitates an amendment to the DBE's White Paper 7 (2004) to incorporate such targeted solutions, as it currently focuses solely on school-based interventions. Furthermore, addressing the usage gap remains critical for long-term sustainability as access alone does not

automatically lead to positive development outcomes. The following section proceeds to discuss the topic of the usage gap.

Closing the Usage Gap

The examination of the usage gap revealed diverse hardware and software skills among learners, reflecting a nuanced digital landscape. The sub-theme of smartphone technology proficiency highlighted learners' adeptness with diverse smartphone functionalities. However, challenges in using web browsers or search engines signalled potential gaps in information retrieval skills, suggesting the importance of interventions to enhance learners' digital literacy (Mkhize and Davids, 2021, p.26). These findings brought me back to Van Dijk's theory of the 'usage gap.' According to Van Dijk (2020, p.1), digital divide research and policy have undergone a notable three-level evolution over the past 25 years. In the initial phase, the focus was on ensuring physical access to computers and the Internet (Van Dijk, 2020). However, Sen (1999)'s Capability Approach suggests that availability does not ensure the effective use of technology, necessitating a broader perspective beyond mere access (Thomas and Parayil, 2008). The second stage then shifted towards digital literacy and skills, emphasizing the importance of not only having access but also effectively using technology (Van Dijk, 2020, p.1,2). The third stage considers both positive and negative impacts of computer and Internet use. The following diagram encapsulates the ideal state of addressing the digital divide holistically with this progression in mind;

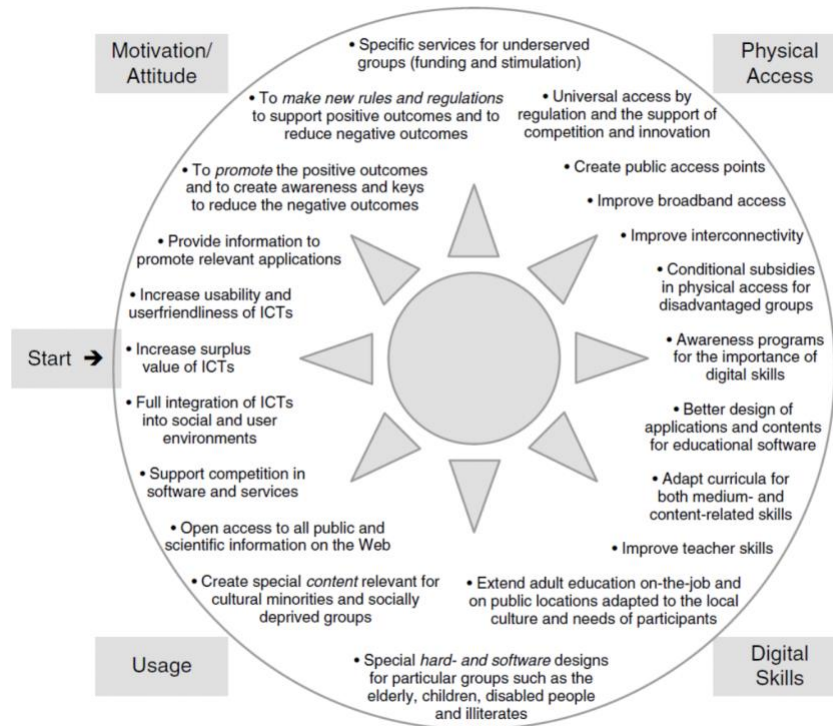


Figure 5: A Wheel of Policy Instruments to Bridge the Digital Divide

Source: Van Dijk (2020, p. 149)

This progression is significant when viewed through the lens of Sen’s (1991) Capability Approach, which promotes the expansion of people’s capabilities. According to Walker and Unterhalter (2007, p.2), the central tenet of the capability approach is that “any evaluation or intervention strategy must look at each person not as a means to economic growth or social stability but as an end in itself – we must evaluate freedoms for people to be able to make decisions they value and work to remove obstacles to those freedoms, that is, expand people’s capabilities”.

In the context of education, Sen (1999) and Nussbaum’s (2006) (as cited in Walker and Unterhalter, 2007, p.2) work highlight that access to digital devices, reliable Internet, educational resources, relevant education, and effective use are in themselves a basic and essential capability that affects the development and expansion of other capabilities. The absence of these foundational capabilities creates a barrier to meaningful participation in the digital age, hindering the learners’ progress. Additionally, it

perpetuates underdevelopment among those facing digital disparities (Thomas and Parayil, 2008, p.413).

In addition, the Capability Approach accentuates the interconnection between socioeconomic factors and well-being (Sen, 2000). In the digital divide, socio-economic challenges, such as financial constraints and caregiving responsibilities, are intertwined with learners' ability to overcome disparities. Economic factors, such as the affordability of Internet access, have a direct impact on the development of digital capabilities. For instance, in the instance where one of the participants EG (2023) shared that he relies on the school WIFI as it is more reliable than his very limited access at home as he has only one parent who is employed and struggles to afford the luxury of continuous uncapped Internet connectivity. This then hinders Participant EG's capabilities and widens the digital divide between the school and his home. Social dynamics, such as familial support, play a crucial role in mitigating these challenges, thereby emphasizing the interplay between social and economic dimensions in the context of development.

Moreover, the Capability Approach also emphasizes agency as a core aspect of development (Sen, 2000, p.18). Learners who demonstrated resilience and continued their education during the lockdown highlighted the agency to make constructive choices in navigating the challenges posed by the digital divide. The support from parents and familial motivation acted as empowering factors, enabling these individuals to exercise their agency in pursuing educational goals despite the constraints. This aligns with the Capability Approach's emphasis on enabling individuals to actively participate in their own development process.

However, the findings also underscored systemic failures in the education system's response to digital challenges, such as the absence of online learning facilitation, lack of teacher support, and gaps in the curriculum. These structural deficiencies hindered an effective response to the digital disparities exacerbated by the pandemic. From a Capability Approach perspective, inclusive development requires addressing these systemic issues to create an environment where all individuals have the capabilities to

engage meaningfully in the digital realm, ensuring a more equitable distribution of opportunities.

In conclusion, the Capability Approach offers a nuanced lens to interpret the lessons from the digital divide experiences. It highlights the importance of foundational capabilities, the interplay between social and economic factors, the agency of individuals in overcoming challenges, and the necessity for systemic changes to foster inclusive development in the context of the digital age.

Chapter 9: Concluding Remarks

In the concluding section of this thesis, the research findings are summarised, and the study's significance and the insights gained are evaluated. Limitations of the research are acknowledged and recommendations for future studies are provided, ending with concluding reflections.

Summary of research findings

The COVID-19 hard lockdown magnified significant disparities in the digital readiness of high school learners in Khayelitsha. The examination of access, affordability, and usage among this group reveals the multifaceted nature of the digital divide as a development issue and the challenges that require a nuanced and comprehensive approach for effective solutions.

Access Disparities: The lack of access to digital devices and reliable Internet emerged as a critical barrier before, during and after the COVID-19 hard lockdown, hindering learners' ability to engage in remote education during the lockdown. This aligns with existing literature on the digital divide, emphasizing the fact that the digital divide in the education sector is not a new issue but one that was magnified by the COVID-19 lockdown period. Additionally, it highlighted the importance of addressing physical access to bridge educational inequalities.

Affordability Challenges: The affordability of both digital devices and Internet access underscores the socio-economic dimensions of the digital divide. Targeted interventions considering the financial dynamics of families and communal access are crucial for crafting equitable educational policies.

Usage Gap: Varied levels of digital competencies, both in hardware and software skills, indicated a need for tailored interventions to enhance learners' digital literacy. This aligned with the call for a skills-focused approach to addressing digital inequality (Van Dijk, 2020).

Technological Affordances: Despite challenges, learners demonstrated proficiency in smartphone technology, highlighting its integral role in bridging educational gaps. Recognizing the technological benefits of smartphones is essential for designing inclusive educational strategies.

Empowerment through Capability Approach: Sen (1991) 's Capability Approach emphasizes empowering individuals with the capabilities to effectively engage with digital tools. Crafting interventions that enhance learners' capabilities for educational and social purposes is crucial for fostering equitable educational outcomes (Sen, 1992).

In conclusion, the experiences of Khayelitsha high school learners during the COVID-19 hard lockdown underscore the need for targeted and multifaceted interventions that address access, affordability, and usage to ensure equitable educational opportunities.

From digital divide survivor to practitioner and now a researcher

One of the complexities I encountered during this research was the need for continuous introspection regarding my role as a researcher. Listening to the learners' struggles in the focus group interview and the obstacles faced by the key informants in their youth development initiatives evoked feelings of empathy and frustration. This emotional response stemmed from my subjective experiences, having navigated similar socio-economic and educational challenges. As a product of public education in both rural and township contexts, I have first-hand knowledge of the digital divide's impact, having overcome these unjust odds myself.

Despite successfully navigating the digital divide, many of my peers from Khayelitsha, with whom I attended primary and high school, were not as fortunate. They remain trapped in a cycle of poverty or have turned to criminal activities for survival. Interviewing a group of 16-year-old learners facing the same challenges I overcame two decades ago, with little progress made since then, was particularly disheartening. The realization that without swift implementation of targeted and holistic intervention strategies, only one out of six learners might survive the aftermath of the digital divide, especially post-COVID-19 pandemic, was deeply troubling.

The resilience and positive attitude of the learners, collaboration between their school, teachers, and parents to support them, the comprehensive scholarship on this topic as well as my contribution to this scholarship- raising awareness about the depth of the digital divide problem, and the emergence of innovative solutions in the EdTech space all inspire hope that the digital divide can indeed be bridged.

Lessons learnt, limitations and future research.

The primary challenge encountered during the interview was a language barrier, despite translating the interview schedule into isiXhosa. Learners struggled with certain translations of concepts such as "digital divide," "access," and "reliable." Finding simplified, conversational versions of these concepts proved challenging, necessitating the use of direct, jargon-heavy translations.

This experience underscored the importance of not assuming comprehension based on a shared native language. The learners' laughter when I enquired about their understanding of "ulwahlulo lwedigitali" - the digital divide, revealed their confusion rather than amusement. They only comprehended the question when I translated it back into English. Similarly, the term "ukufikelela" was misunderstood as affordability instead of access. To mitigate this issue, questions were broken down and occasionally retranslated into simplified English.

On a broader front, this highlighted the necessity for conceptualising sociological concepts across all languages and improving isiXhosa terminology. The language barrier was partly attributable to generational differences, suggesting that isiXhosa may need to evolve with current multilingual speakers or establish a database of contemporary isiXhosa concepts and terminologies that we can use for research purposes.

Time constraints and the scope of my minor dissertation presented another limitation. Initially, I intended to conduct a comparative study of the digital divide experiences of learners from different socio-economic backgrounds. However, time restrictions necessitated a single case study approach. In retrospect, this decision, guided by my

supervisor's advice, was beneficial, enabling timely progress and preventing potential overwhelm.

Despite this having been a limitation, I also see the possibility to conduct a comparative study in a future PhD research project. Additionally, there are prospects for investigating the long-term impact of the digital divide on these learners by conducting follow-up studies assessing the ongoing influence of challenges faced during the COVID-19 hard lockdown on their educational experiences.

References

- Azubuike, O. B., Adegboye, A. & Quadri, H. (2021). Who gets to learn in a pandemic? Exploring the digital divide in remote learning during the COVID-19 pandemic in Nigeria. *International Journal of Educational Research Open*, 2, 100022. <https://doi.org/10.1016/j.ijedro.2020.100022>
- Babbie, E. and Mouton, J. 2001. *The practice of social research*. Cape Town: Oxford University Press.
- Blee, K.M. and Taylor, V. (2002) *Semi-Structured Interviewing in Social Movement Research*. In Klandermans, B. & Staggenborg, S. (eds.) *Methods of Social Movement Research*. Minneapolis: University of Minnesota Press.
- Best, J. (2022) *The SAMR model explained (with 15 practical examples)*, 3P Learning. Available at: <https://www.3plearning.com/blog/connectingsamrmodel/>
- Bornman, E. (2015). Information Society and digital divide in South Africa: Results of longitudinal surveys. *Information, Communication & Society*, 19(2), 264–278. <https://doi.org/10.1080/1369118x.2015.1065285>
- Coetzee, M. (2014). School quality and the performance of disadvantaged learners in South Africa. Stellenbosch University Economics Department Working Paper, 22, 14.
- Denzin, N. K. (1970). *The research act: A theoretical introduction to sociological methods*. New York: Aldine.
- Department of Basic Education. (2004). *White Paper on E-education: Transforming learning and teaching through information and Communication Technologies (ICTs)*. Pretoria: Government Printer.
- De Vaus, D. (2002). Chapter 1: The Nature of Surveys in Surveys in social research. Routledge.
- De Vos, A.S., Strydom, H., Fouche, C.B. & Delport, C.S.L. (2001). *Research at Grass Roots: For the Social Sciences and Human Service Caring Professions* (4th Edition). Pretoria: Van Schaik Publishers.
- De Wet, J. & Erasmus, Z. (2005). Towards rigour in Qualitative Analysis. *Qualitative Research Journal*, 5 (1), pp. 27-40.
- Dhaygude, M.S., Lapsiya, N.D. and Chakraborty, D. (2022) 'There is no app for that: Manifestations of the digital divides during COVID-19 school closures in India', *Proceedings of the ACM on Human-Computer Interaction*, 6(CSCW2), pp. 1–26. doi:10.1145/3555140.

- American Library Association (ALA). 2012. Digital Literacy, Libraries, and Public Policy: Report of the American Library Association Digital Literacy Task Force. ALA, Chicago.
- Farnsworth, J. and B. Boon (2010). "Analysing group dynamics within the focus group." *Qualitative Research* 10(5): 605-624.
- Fuchs, C., & Horak, E. (2008). Africa and the digital divide. *Telematics and Informatics*, 25 (2), pp. 99-116. <https://doi:10.1016/j.tele.2006.06.004>
- Innovation Edge (2022) The digital divide in South Africa, The Digital Divide in South Africa. Available at: <https://innovationedge.org.za/the-digital-divide-in-south-africa/>
- Ikeja Wireless. Home [Facebook page]. Facebook. Retrieved from <https://www.facebook.com/ikejawireless>
- Johnson, R. and Onwuegbuzie, A. 2004. Mixed methods research: a research paradigm whose time has come. *Educational researcher*. 33 (7), pp.14–26.
- Kabiraj, A. et al. (2020) "How successful is a lockdown during a pandemic?" 2020 IEEE 17th India Council International Conference (INDICON) [Preprint]. Available at: <https://doi.org/10.1109/indicon49873.2020.9342351>.
- Krönke, M. (2020). Africa's digital divide and the promise of e-learning. Available at: https://humanities.uct.ac.za/sites/default/files/content_migration/humanities_uct_ac_za/953/files/PP66Africa%2527s%2520digital%2520divide%2520and%2520the%2520promise%2520of%2520e-learning-Afrobarometer%2520policy%2520paper-14june20.pdf
- Lima, C.O. (2015). Fostering Global Citizenship Online, International Literacy Association. Available at: <https://www.literacyworldwide.org/blog/literacy-now/2015/01/16/fostering-global-citizenship-online>
- Lembani, R., Gunter, A., Breines, M & Dalu, M. T. B. (2019) "The same course, different access: The digital divide between urban and rural distance education students in South Africa," *Journal of Geography in Higher Education*, 44 (1), pp. 70–84. Available at: <https://doi.org/10.1080/03098265.2019.1694876>.
- Mason, J., 2002. "Organising and Indexing Qualitative Data," in *Qualitative researching*, 2nd ed. London: Sage Publications. pp. 147-172.
- Meyer, I.A. and Gent, P.R. 2016. The Status of ICT in Education in South Africa and the Way Forward. Centurion: The National Education Collaboration Trust (NECT). Available at: <https://nect.org.za/publications/technical-reports/the-state-of-ict-in-education-in-south-africa/view>

- Mhlanga, D. and Moloi, T. (2020) "Covid-19 and the digital transformation of education: What are we learning on 4IR in South Africa?" *Education Sciences*, 10(7), p. 180. Available at: <https://doi.org/10.3390/educsci10070180>.
- Mkhize, T.R. and Davids, M.N. (2021) "Towards a digital resource mobilisation approach for digital inclusion during COVID-19 and beyond: A case of a township school in South Africa," *Educational Research for Social Change*, 10 (2), pp. 1–15. Available at: <https://doi.org/10.17159/2221-4070/2021/v10i2a2>.
- Miles, M.B. and Huberman, A.M. (1994) *Qualitative Data Analysis*. Second Edition. California SAGE Publications.
- Miles, M.B., Huberman, A.M. and Saldaña, J. (2014). *Qualitative Data Analysis: A methods sourcebook*. Thousand Oaks, California: SAGE Publications, Inc.
- Motala, S., & Sayeed, Y. (2009). " No Fee" Schools in South Africa. Policy Brief Number 7.  Online Submission.
- Muller, M and Aguiar, J. P. D. V. (2022) What is the digital divide? Internet Society. Available at: <https://www.internetsociety.org/blog/2022/03/what-is-the-digital-divide/>
- Munga, J. (2022) To Close Africa's digital divide, policy must address the usage gap. Available at: <https://carnegieendowment.org/2022/04/26/to-close-africa-s-digital-divide-policy-must-address-usage-gap-pub-86959>.
- Myers, M. D. (2009). *Qualitative Research in Business & Management*. London: Sage Publications.
- Mxatule, A. (2017). SOC4000H: The problem is often in the design: An Assessment of Youth Organisations' Intervention Strategies. The University of Cape Town. Unpublished Dissertation.
- Ngqambela, N. (2022). South Africa must bridge digital divide to best benefit from 4IR, *The Mail & Guardian*. Available at: <https://mg.co.za/opinion/2022-11-10-south-africa-must-bridge-digital-divide-to-best-benefit-from-4ir/>
- Nkoala, S. and Matsilele, T. (2023). 'The influence of the digital divide on emergency remote student-centred learning during the COVID-19 pandemic: A case study of journalism education', *SN Social Sciences*, 3(3). doi:10.1007/s43545-023-00626-6.
- Papas, V. (2022). The Pros and cons of public versus private schooling. Available at:

<https://www.citizen.co.za/lowvelder/uncategorized/2022/08/31/the-pros-and-cons-of-public-versus-private-schooling/>

Punch, K. (2005). Introduction to Social Research: Quantitative & Qualitative Approaches. London: Sage.

Reflective Learning. (2023). Impact story – Reflective Learning. Available at: <https://reflectivelearning.co/>

Sands, R. (2017). Schools Lan (SLAN), Wi-Fi [SLAN]. Available at: <https://schoolsit.wcgschools.gov.za/index.php/projects/wi-fi-slan>.

Schejter, A.M. (2021). “It is not good for the person to be alone”: The capabilities approach and the right to communicate,” *Convergence: The International Journal of Research into New Media Technologies*, 28 (6), pp. 1826–1840. Available at: <https://doi.org/10.1177/13548565211022512>.

Scott, J. and Marshall, G. (2009) A dictionary of sociology. 3rd edn. Oxford: Oxford University Press.

Schools Digest. (2024). Chris Hani secondary school reviews, Matric Results & contact details. Available at: <https://schoolsdigest.co.za/listings/chris-hani-secondary-school/> .

Sen, A. (1985) *Commodities and Capabilities*. Amsterdam: North-Holland.

Sen, A. (1992) *Inequality Re-examined*. Oxford: Clarendon Press.

Sen, A. (1999) *Development as Freedom*. New Delhi: Oxford University Press.

Spencer, L., Ritchie, J., O'Connor, Morrel., & Ormston, W., 2014. “Analysis in Practice.” Chapter 11 in *Qualitative Research Practice: A Guide for Social Science Students and Researchers* (2nd edition), pp. 269-293. London: Sage Publications.

Soudien, C., Reddy, V., Harvey, J. (2022). The Impact of COVID-19 on a Fragile Education System: The Case of South Africa. In: Reimers, F.M. (eds) *Primary and Secondary Education During Covid-19*. Springer, Cham. https://doi.org/10.1007/978-3-030-81500-4_12

Staunton, C., Swanepoel, C. and Labuschaigne, M. (2020) “Between a rock and a hard place: Covid-19 and South Africa’s response,” *Journal of Law and the Biosciences*, 7(1). Available at: <https://doi.org/10.1093/jlb/ljaa052>.

Thomas, J.J. and Parayil, G. (2008) “Bridging the social and digital divides in Andhra Pradesh and Kerala: A capabilities approach,” *Development and Change*, 39(3), pp. 409-435. Available at: <https://doi.org/10.1111/j.1467-7660.2008.00486.x>.

Van der Berg, S. (2008). How effective are poor schools? Poverty and educational outcomes in South Africa. *Studies in Educational Evaluation*, 34 (3), pp. 145-154.

Van Dijk J (2020) *The digital divide*. Polity Press, Cambridge

Vassar, G. (2016) *7 steps for turning around under-resourced schools*, Lakeside.

Available at:

<https://lakesidelink.com/blog/7-steps-for-turning-around-under-resourced-schools/>

Walker, M. and Unterhalter, E., 2007. The capability approach: It's potential for work in education. In *Amartya Sen's Capability Approach and Social Justice in education* (pp. 1-18). New York: Palgrave Macmillan US.

Western Cape Education Department. (2012). *WCED vision for e-Education: e-Learning and e-Teaching in schools of the future*.

World Benchmarking Alliance. (2022). *Digital Inclusion Benchmark Insights Report*.

<https://www.worldbenchmarkingalliance.org/research/2021-digital-inclusion-benchmark-insights-report/>

Appendices

Appendix 1: Ethical Clearance



Department of Sociology

Room 4.35 • Fourth Floor
Leslie Social Sciences Building
Private Bag • Rondebosch 7701
Telephone: +27 21 650 3501
Fax: +27 21 689 7576
Email: Soc-Sociology@uct.ac.za

01 June 2023

Confirmation of Research Ethics Approval Akhona Mxatule [SOC2023/3]

This is to confirm Akhona Mxatule's research proposal, "Aluta continua! Digital divide experiences of township high school learners during COVID-19 hard lockdown in South Africa." under the supervision of Dr Jacques De Wet, has been reviewed by the Department of Sociology.

The Department and supervisor are satisfied that the research carries no significant risk or harm to human subjects. We are further satisfied that appropriate informed consent and confidentiality/anonymity/data protection mechanisms are in place.

It is a condition for the acceptance of Akhona's proposal that it complies consistently with strict ethical standards. This will entail, proceeding only on the basis of the consistently informed consent of interviewees and will require regular monitoring of ethical issues which may emerge as the project develops.

Please contact the Department should you have any questions or concerns.

Kind regards,

A handwritten signature in black ink, appearing to read 'Susan Walker'.

Susan Walker

Appendix 2: Consent Forms

[English Version]



University of Cape Town

Sociology Department

Consent Form

Title of Research Project:

Aluta Continua! Digital Divide Experiences of township high school learners during the COVID-19 Hard Lockdown Period in South Africa.

Supervisor: Jacques de Wet
[01149369]
University of Cape Town
J
0216504638

Student Researcher: Akhona Mxatule [mxtakh001]
University of Cape Town
mxtakh001@myuct.ac.za
0786789862

Nature of the research:

I (Akhona Mxatule) am a student at UCT doing a Master of Development Studies course in the Sociology department at UCT. I am interested in understanding how the COVID-19 hard lockdown magnified a Khayelitsha group of high school learners' experiences of the digital divide and revealed the extent to which they were able to overcome these challenges in the context of their education.

My sub-research questions are the following:

- What were the learner's experiences of the digital divide during the COVID-19 lockdown?
- What do we learn from the learners' experiences of the digital divide during the COVID-19 lockdown about their vulnerabilities, opportunities, and capabilities?

My hope is to contribute to the growing body of research done on the topic of the digital divide and its impact on society, especially as a development issue.

Participant's Involvement:

This individual interview will take place at an agreed-upon location and will last approximately 1½ hours. This interview will explore the participant's experiences of the digital divide during the COVID-19 hard lockdown.

Data Collection and Consent

I would like to ask if you would be willing to participate in an onsite (physical) one on one interview. If you agree, you would be asked questions concerning your digital divide-related work with learners from under-resourced communities and I will use the information for my research purposes. With your permission, the interview would be recorded.

The results of this study will be presented in a final Research Report required for completion of my UCT Sociology MPhil Development Studies degree" and may also be used for conference publications, presentations, and published in academic journals.

Risk of harm to participants and strategies to manage risk:

Depending on the information you provide, and whether you choose to disclose your identity, there is a possibility that the information you provide might cause loss of social status and/or embarrassment. As strategies to manage risks, you have the option of not having your personal identity revealed in the products of the research. With your permission, the interview would be recorded, you will be provided with a copy of the recording if needed.

Participation and withdrawal:

Your participation is completely voluntary. You may withdraw from the interview for any reason, without explanation, up to when I begin analysis of the data. If you choose to withdraw from the interview, all information you provided during the interview would be withdrawn from the study and destroyed.

Agreement:

- I agree to participate in this research project.

- I have read this consent form and the information it contains and had the opportunity to ask questions about them.
- I agree to my responses being used for education and research on condition my privacy is respected, subject to the following: I understand that my contribution to the focus group interview might be included in the thesis and that I can choose not to be personally identifiable.
- I understand that I am under no obligation to take part in this focus group interview
- I understand I have the right to withdraw from this focus group interview at any stage

Name of Participant: _____

Signature of Participant: _____

Full name of Participant's Parent/Guardian (if applicable): _____

Signature of Participant's Parent/Guardian (if applicable): _____

Contact details of participant: _____

Signatures of Masters' student: _____

[IsiXhosa Version]



**University of Cape Town
Sociology Department
Ifomu yeMvume**

Isihloko seprojekthi yophando:

Aluta Continua! Digital Divide Experiences of township high school learners during the COVID-19 Hard Lockdown Period in South Africa.

Supervisor: Jacques de Wet
[01149369]
University of Cape Town
jacques.dewet@uct.ac.za
0216504638

Student Researcher: Akhona Mxatule
[MXTAKH001]
University of Cape Town
mxtakh001@myuct.ac.za
0786789862

Ubume bophando:

uAkhona Mxatule ngumfundi weMasters zezophuhliso (Master of Development Studies) kwisebe leSociology kwi Yuniversity yaseKapa (UCT). Ndinomdla wokuqonda ukuba i-lockdown enzima yeCOVID-19 iwakhulise njani amava okwahlukana kwedigitali (digital divide) kwiqela labafundi bamabanga aphakamileyo kwisikolo saseKhayelitsha kwaye yatyhila njani indlela abaye bakwazi ngayo ukoyisa imingeni kwimeko yemfundo yabo.

Imibuzo ephantsi kophando lwam yile ilandelayo:

1. Athini amava abafundi ngokwahlukana kwedijithali ngexesha lokuvalwa kwe-COVID-19?
2. Sifunda ntoni kumava abafundi okwahlukana kwedijithali ngexesha lokuvalwa kwe-COVID-19 malunga nokuba sesichengeni, amathuba kunye nobuchule babo?

Ithemba lam kukuba negalelo kumzimba okhulayo wophando olwenziweyo kwisihloko sokwahlula kwedijithali (Digital Divide) kunye nefuthe layo kuluntu, ngakumbi njengomba wophuhliso.

Ukubandakanyeka koMthathi-nxaxheba:

Olu dliwano-ndlebe lomntu ngamnye luya kuqhubeka kwindawo ekuvunyelwene ngayo kwaye luya kuhlala malunga neeyure ezi-1½. Olu dliwano-ndlebe luza kuphonononga

amava omthathi-nxaxheba kulwahlulo lwedijithali ngexesha le lockdown enzima kwixesha le-COVID-19.

Ukuqokelelwa kwedatha kunye neMvume

Ndingathanda ukubuza ukuba ungavuma na ukuthatha inxaxheba kudliwano-ndlebe olu-onsite (ngokomzimba)? Ukuba uyavuma, uya kubuzwa imibuzo emalunga namava wakho anxulumene nokwahlulwa kwedijithali (digital divide) njengomfundi ophuma kwindawo ezifana neKhayelitsha kwaye ndiya kusebenzisa olu lwazi kwiinjongo zam zophando. Ngemvume yakho, udliwano-ndlebe luya kurekhodwa.

Iziphumo zolu phononongo ziya kuboniswa kwiNgxelo yoPhando yokugqibela efunekayo ukuze ndigqibezele isidanga sam saseUCT iMPhil Development Studies” kwaye isenokusetyenziswa kupapasho lwenkomfa, iinkcazo-ntetho, kunye nokupapashwa kwijenali zemfundo.

Umngcipheko wokwenzakala kubathathi-nxaxheba kunye nezicwangciso zokulawula umngcipheko:

Ngokuxhomekeke kulwazi olunikezelayo, kwaye nokuba ukhetha ukuxela ukuba ungubani na, kunokwenzeka ukuba ulwazi olunikezayo lunokubangela ukulahleka kwesimo sentlalo kunye/okanye iintloni. Njengezicwangciso zokulawula imingcipheko, unokukhetha ukungavezi ubuwena kwiimveliso zophando. Ngemvume yakho, udliwano-ndlebe luya kubhalwa, uya kunikwa ikopi yokurekhoda ukuba kuyimfuneko.

Ukuthatha inxaxheba kunye nokurhoxa:

Ukuthatha kwakho inxaxheba koluphando kukuzithandela ngokupheleleyo. Unokurhoxa kudliwano-ndlebe nangasiphi na isizathu, ngaphandle kwengcaciso, ukuya kuthi ga xa ndiqala ukuhlalutya idatha. Ukuba ukhetha ukurhoxa kudliwano-ndlebe, lonke ulwazi olunikileyo ngexesha lodliwano-ndlebe luya kurhoxiswa kuphononongo lutshatyalaliswe.

Isivumelwano:

- Ndiyavuma ukuthatha inxaxheba kule projekthi yophando.
- Ndiyifundile le fomu yemvume kunye neenkukacha ezikuyo kwaye ndafumana ithuba lokubuza imibuzo ngazo.
- Ndiyavuma ukuba iimpendulo zam zisetyenziselwa imfundo kunye nophando kwimeko yokuba ubumfihlo bam buhlonitshiwe, ngokuxhomekeke koku kulandelayo: Ndiyaqonda ukuba igalelo lam kudliwano-ndlebe lweqela ekugxilwe kulo lingaqukwa kwithisisi kwaye ndinokukhetha ukungachongi buqu.
- Ndiyaqonda ukuba andinyanzelekanga ukuba ndithathe inxaxheba kolu dliwano-ndlebe lweqela
- Ndiyaqonda ukuba ndinelungelo lokurhoxa kolu dliwano-ndlebe lweqela nakweliphi na inqanaba

Igama lomthathi-nxaxheba: _____

Utyikityo lomthathi nxaxheba: _____

Igama elipheleleyo loMzali/uMgcini womthathi-nxaxheba (ukuba kufanelekile): _____

Utyikityo loMzali/uMgcini womthathi-nxaxheba (ukuba kufanelekile): _____
linkcukacha zoqhagamshelwano zomthathi-nxaxheba: _____
Utyikityo lomfundi we Masters: _____

Appendix 3: Interview Schedules

Key Informant interview Schedule



Research Title: Aluta Continua! Digital Divide Experiences of township high school learners during the COVID-19 Hard Lockdown Period in South Africa.

Interview Schedule

Phase One - Rapport building

- Meet and greet
- Purpose of the Research and Informed Consent Form
- Clarify the aims of the interview:

Getting to know you:

- 1) Tell me a little bit about yourself.
 - a) Do you live in Khayelitsha and for how long they have been living there?
 - b) Tell me about the work that you do with high school learners in communities like Khayelitsha. How long have you been doing this kind of work? What initially drew you to this work?

Phase Two: Interview Schedule

MAIN THEME: Learner's experiences of the digital divide

- 2) Thinking about your work among high school learners from Khayelitsha, please answer the following questions that relate to the digital divide:
 - a) **Theme 1: Access.**
 - i) **Access to digital tools or resources.**
 - (1) Do these students have access to digital resources or tools (like computers, laptops, smartphones)?
 - (2) How easy is it for them to have access to these digital tools? [PROMPT: Please elaborate]
 - (3) Is their access to digital tools regular or not (i.e. whenever they need it)? [PROMPT: Please elaborate]

- ii) **Access to the reliable internet.**
 - (1) Do these learners have access to quality and reliable internet (i.e. the issue of connectivity)? How easy is it for them to get access?
- b) **Affordability of digital tools**
 - i) Do they own the computers or laptops they use? Do they own the smartphones they use? If so how do these learners acquire them?
- c) **Affordability of connectivity to the internet**
 - i) Do these learners have to pay for access to the internet? When do they have to pay for access to the internet? Do they sometimes not have to pay and why is this case?
 - ii) In your assessment, can they afford to pay for access to the internet for school work?
- d) **Levels of use of digital tools (i.e. digital savvy)**
 - i) In your assessment, how capable are these learners in the use of computers and the basic software on these computers? Are they able to use more than the basic Microsoft software? Please provide examples?
 - ii) How capable are they of using smartphone technology? What kind of technology do the access via their phones?
- e) **The COVID-19 Lockdown experience by learners from Khayelitsha**
 - i) How did the COVID-19 hard lockdown affect the learners' ability to:
 - (1) Access digital resources/tools such as computers and smartphones (provide examples)
 - (2) Access the internet (provide examples)
 - (3) Pay for the use of smartphones or computers because schools and other facilities were shutdown.
 - (4) Pay for access to the internet
 - (5) Use these digital tools? (provide examples)
 - ii) How did the digital impact of lockdown, affect their education and their ability to learn? (provide examples) How did they experience online learning?
 - iii) Can you think of any ways in which the COVID-19 lockdown impacted students use of digital resources? Where there any positive impacts or examples of creative solutions

that these learners came up with to solve their problems regarding the use of digital technologies during lockdown?

- iv) Do you think that **after** COVID-19 lockdown the levels of access, affordability and IT know-how of these learners were better or worse or the same as before lockdown?

Capabilities (“referring to a person’s combination of functionings that a person can achieve reflecting the person’s freedom to lead one type of life” (Sen, 1992:40) [definition for me not the participant]:

3) OPPORTUNITIES:

- a) From your perspective, what opportunities does the digital divide present to learners in township schools?

4) VUNERABILITIES:

- a) How does limited digital accessibility, affordability, and skills (IT know-how) hinder high school learners' ability to access educational resources, participate in online learning, and collaborate with peers?
- b) How does limited accessibility, affordability, and skills in using digital technologies for education impact their freedom and capabilities in i.) accessing information, ii.) making informed decisions, and iii.) engaging in social and civic activities as learners?
- c) How does limited digital accessibility, affordability and skills affect the learners' capability to achieve their own educational goals (such as acquiring the necessary knowledge and skills)?
- d) How does this affect their capability to interact, learn, and develop related essential skills?

In conclusion:

- 5) Can you provide examples of successful community-led efforts or collaborations that have effectively addressed the digital divide among high school learners in under-resourced communities? How do these initiatives empower learners and promote their freedom, ability and power to choose who they want to be and what skills they acquire?

- a) If you don't know of any examples, what do you think a potential community-led project could and should look like to address the issue of lack of digital access?
- b) Looking ahead, what do you consider the most critical steps needed to bridge the digital divide for high school learners in poor communities? How would this impact their educational achievements, personal growth, and future prospects?
- 6) What recommendations would you give to the Department of Basic Education for overcoming the digital divide?

******The End, thank you for participating! ******

Group Interview Schedule [English and Isixhosa Version]



UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Research Title: Aluta Continua! Digital Divide Experiences of township high school learners during the COVID-19 Hard Lockdown Period in South Africa.

Phase One-Rapport building

- Welcome the learners, explain the purpose of the research and Informed Consent Form
- Clarify the aims of the interview:

Phase Two: Interview Schedule

Getting to Know the Learners

1) Tell me a little bit about yourself/ background information

- a) Please tell me about yourself (Ungubani, usuka phi nefamily yakho in terms of ukusebenza kwabazali bakho)?
 - i) Nikweyiphi igrade? [Which grade are you currently in?]
 - ii) Unexesha elingakanani ufunda kwesisikolo ofunda kuso? [How long have you been studying at the school]
 - iii) Ninayo iComputer Applied Technonology as iSubject esikolweni senu? [Do you have Computer Applications Technology as part of your curriculum]

MAIN THEME: Learners' Experiences of the digital divide before, during and after the hard lockdowns?

2) Understanding the “Digital Divide”

- a) Ngokolwazi lwenu, yintoni iDigital Divide kwicontext yamathuba enu emfundo nezakhono zenu zokufunda ngexesha leCOVID-19 lockdowns? [What is your understanding of the term "digital divide" in the context of educational opportunities and capabilities during the COVID-19 lockdowns].

3) Before the hard lockdown, what were the learner's experiences of the digital divide?

a) Theme 1: Access

i) Access to digital devices before the hard lockdown

- (1) Phambi kwexesha leCOVID-19 lockdowns, ingaba bekwazi ukuzifikelela iidigital resources ezifana neKomputer, laptops, iismartphones okanye iitables esikolweni? [Before the COVID-19 hard lockdown, did you have access to digital resources or tools (e.g. computer, laptop, tablet, smartphone) at school?]
 - (a) Ingaba benine access efanayo yezidigital tools amakhayeni enu? [Did you have the same access to digital devices at home]?
- (2) Bekulula kangakanani ukuzifikelela or ukuzifumana ezidigital tools? How easy was it for you to access these digital resources [PROMPT: Please elaborate]?
- (3) Ingaba benizifikelela rhoqo iidigital tools (like lonke ixesha nizidinga)? Was your access to digital tools regular or not (i.e. whenever you need it)? [PROMPT: Please elaborate]
- (4) Ingaba benizifikelela ngendlela efanayo nasekhaya? [Did you have the same access to digital devices at home]?

ii) Access to reliable internet

- (1) Beningena njani kwi-Intanethi ekhaya nasesikolweni? How did you access the internet at home & at school?
 - (a) Ingaba iInternet access yenu ibithembekile apho beniyifumana lonke ixesha niyifuna futhi ifast (like you could do video calls etc)? [Was it reliable (*fast & stable*) internet access?]

b) Theme 2: Affordability of the digital tools & internet

i) Digital tools affordability

- (1) Ibizezenu ezicomputers okanye iilaptops ebenzisebenzisa? [Did you own the computers or laptops you used?]
- (2) Beninazo ii-smartphones? [Did you own the smartphones you used?]
 - (a) Uba kunjalo, benizifumene njani? If so how did you acquire them?

ii) Internet affordability

- (1) Beniyibhatalela iInternet? Beniyibhatalela nini? Apho beningayibhataleli khona, bekutheni? [Did you pay for access to the internet? If so, When do you have to pay for access to the internet? Do you sometimes not have to pay and why is this the case?]
- (2) Ningathi benifikelela futhi nikwazi ukuyibhatalela iInternet for umsebenzi wesikolo? Can you afford to pay for access to the internet for schoolwork?

c) Theme 3: Levels of usage of the digital tools

- i)** Benikwazi ukusebenzi ezizinto zisisiseko sokwazi ukusebenzisa iComputer? [Did you know how to use computers and did you have the following basic computer literacy skills]:

- (1) Izakhono ze-Hardware ezinjengokwazi ukuqala okanye ukucima ikhompyuter, [Hardware skills such as being able to start or switch off a computer,]
- (2) Ukuqonda umsebenzi wemonitha kunye nokukwazi ukuyinavigator? Understanding the function of a monitor and being able to navigate it?
- (3) Ukwazi ukusebenzisa imouse (ukucofa ileft ne right click)? Knowing how to use the mouse (left and right click functions)
- (4) Ukwazi umsebenzi keyboard nokuyicofa? Understanding the function of the keyboard and how to type

- (5) Software skills such as being able to use software applications & programmes such as;
- (a) Microsoft Word or Google documents (word processing),
 - (b) Basic Excel (spreadsheets and data calculation),
 - (c) Web browsers and email processing:
 - (d) Internet Explorer, Mozilla Firefox, Google Chrome, and Apple Safari, Search engines: Google, Bing, Yahoo).
- ii) How capable are you in using your smartphone technology?
- (1) What kind of technology do you access through your phone?
- d) What challenges or limitations did you face in accessing digital devices or the internet for educational purposes?
- i) How did these challenges affect your capabilities to learn and participate in your world?.

What were the learner's experiences of the digital divide during the COVID-19 lockdown?

4) Accessing & using Digital Devices and the internet at home

- a) During the COVID-19 hard lockdown, did you have access to digital devices (a computer, laptop, tablet or smartphone) and reliable internet at home?
 - i) Did you continue learning online from home?
- b) What challenges or limitations did you face in accessing devices or the internet for educational purposes, and how these affected your capabilities to learn and participate.

5) Learning environment at home

- a) Did you have a quiet and conducive space for studying at home?
- b) What distractions or difficulties (if any) did you encounter while studying from home?
 - i) How did these difficulties or distractions influence your capabilities to focus and engage in learning activities during the hard lockdown period?

6) Online Learning Experience

- a) What was your experience with online learning platforms or tools that were used by your school during the hard lockdown?
- b) How familiar were you with these platforms or tools before the lockdowns?
- c) How was your experience of interacting with your teachers & classmates online?
- d) Can you think about your engagement during virtual classes or online discussions, how was it & what was your level of engagement?
- e) What challenges did you face while using online learning platforms or tools,
 - i) and how did these impact your capabilities to access and utilize educational resources effectively?
 - ii) On engagement, were there any difficulties you encountered in participating actively in online learning activities, and how did these affect your capabilities to interact, collaborate, and learn from others?

7) Coping strategies

- a) What strategies or solutions did you employ to overcome the digital divide challenges they faced?
- b) What support or assistance did you receive from your school, teachers, or family?
 - i) How did the support you received enable you to enhance your capabilities to learn and overcome limitations?

8) Academic Performance

- a) What impact did the digital divide have on your academic performance during the hard lockdowns?
- b) Were there any specific subjects or assignments that you faced challenges due to the lack of access to digital resources?
 - i) How did these challenges affect your capabilities to perform and achieve desired learning outcomes?

9) Reflections and Recommendations

- a) Now after the hard COVID-19 lockdowns, can you reflect on your overall experience with the digital divide and online learning, considering the opportunities and limitations you faced during the COVID-19 pandemic?
- b) Do you have any recommendations for schools or policymakers to address the digital divide in the future, in order to enhance capabilities and ensure equal educational opportunities for all?

10) Closing

- a) Any questions?

*****Thank you for your participation*****

Appendix 4: Key Informant recommendations

Recommendations:

OB's (Interview, 2023) recommendations to bridge the digital divide encompass various aspects of educational infrastructure, curriculum design, and teacher engagement. Her recommendations were as follows:

| Recommendation | Detail |
|--|--|
| Stable Internet at Schools | OB suggested providing stable Internet at schools to facilitate digital learning as they are still encountering connectivity issues when conducting their Digital Literacy training in under resourced schools. As a result of this challenge, as an organization, they must include Internet costs in their budget. |
| Daily Computer Literacy Subject | OB proposes making computer literacy a daily subject in schools, allowing students to develop their digital skills. This is the implementation of Computer Applications Technology (CAT) to all schools. |
| Enforcement of Digital Use Among Teachers | OB emphasizes the need to enforce digital use among teachers, mentioning the resistance from older teachers who are accustomed to traditional methods. |
| Shift from Pen and Paper | OB recommends a shift from traditional pen-and-paper methods to digital methods in schools, emphasizing the importance of teachers adapting to digital tools. |
| Benefits for Educational Achievements | OB believes that consistent exposure to digital education, including a daily computer subject, would positively impact students' educational achievements by familiarizing them with digital tools and improving spelling and vocabulary. |

| | |
|------------------------|--|
| Personal Growth | OB anticipates that early and consistent exposure to digital education would contribute to students' personal growth, broadening their perspectives and preparing them for the digital future. |
| Prospects: | The implementation of these measures is expected to positively influence students' prospects, providing them with essential digital skills that are increasingly important in various fields. |

Table 2: Key Informant recommendations

Overall, OB (Interview, 2023) emphasizes the importance of integrating digital education into the daily curriculum, involving both students and teachers, to address the digital divide effectively.

Summary

In response to the questions posed to understand the learner's digital divide experiences before, during and after the hard COVID-19 pandemic, OB offered invaluable insights from her perspective as a Youth Development practitioner from a Public Benefit Organisation. Her insights informed my approach to the focus group interview. I now turn my attention to the findings derived from the Focus Group Interview with learners from a township high school

