Digital Literacy among Grade 12 Learners at Centocow High School at Harry Gwala District, Kwa-Zulu Natal, South Africa

By

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Date:31 March 2022

DEDICATION

This dissertation is dedicated to my loving parents Mrs. E.T Gamede and Mr. M.J Gamede who supported and encouraged me throughout my studies. If it wasn't for their love and support, I would not have been the person I am today.

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ABSTRACT

Digital literacy practices involve social networking, web pages, and include visual elements and communication within chat rooms. However, there are several context-specific barriers to the acquisition of digital literacy.

The research was prompted by observing that grade 12 learners at the rural Centocow High School at Harry Gwala District are not digitally literate. As expected, availability, affordability, accessibility, and sustained use of digital tools are limited. Centocow High School is one of several public secondary schools in the rural Harry Gwala District and is classified under quantile two as a no-fee institution. Hence, learners in the school do not successfully utilise digital devices as their peers in other South African, global cities and environments. The study adopted Beetham and Sharpe's (2010) digital literacy model. The model underpinned the study and helped add breadth and texture to understanding students' digital competency issues in a rural school setting.

The study used quantitative and qualitative approaches to address the research questions. The research used a survey method to gather the required data as it is less costly and time-consuming when using the total population (Matiwane, 2017). The current study adopted random sampling to collect quantitative data and purposive sampling for qualitative data. Eighty-two learners were randomly nominated to participate in the quantitative section of the research, and 10 learners were interviewed purposively for the qualitative section of the study.

The findings revealed that most grade 12 learners at Centocow high school access digital tools at home. The results indicated that 62 (76%) of the respondents admitted that digital tools are useful to them for school-related reasons. 20 (24%) of the respondents indicated that digital tools are useful for research and personal reasons. None of the respondents indicated that digital tools are not useful to them.

In addition, 49% access digital tools at home, whereas 28% access digital tools at the library. They were followed by 17 (21%) who indicated that they access digital tools at internet cafes. Two per cent of respondents access digital tools in other places. The main conclusions informed the design of intervention strategies for the digital literacy competence of learners.

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CHAPTER ONE: INTRODUCTION AND BACKGROUND OF THE STUDY

1.1. INTRODUCTION

This chapter concentrates on the study introduction and offers an in-depth discussion of digital literacy, digital tools, and digital literacy practices amongst grade 12 learners at the rural Centocow High School at Harry Gwala District. Furthermore, a brief background or history of Centocow High School will be provided.

Digital literacy practices involve social networking, the use of web pages, including visual elements such as videos, searching and sharing content or information on the web and in databases, and interconnecting in chat rooms (Combes, 2016). Consequently, the present study uses the lens of gender, age, economic status, satisfaction, motivation, and associated factors to view the perceptions, attitudes, fears, and emotions of grade 12 learners in the landscape of digital literacy.

Digital literacy is the capability to utilize information and communication technologies to discover, create, assess, and interconnect information that involves both technical cognitive skills (Heitin, 2016). Digital literacy is necessary to become digital populaces, which is an individual's responsibility for how they make use of technology to interrelate with the world around them (Promethean, 2017). Digital literacy means consuming the expertise necessary to learn, work and live in a world where information access and communication are accumulating through digital tools and technologies like social media, mobile devices, and internet platforms (Maphosa and Bhebhe, 2019).

Centocow High School is a public secondary school in the rural Harry Gwala District and is classified under quantile two as a no-fee institution. Hence, they may not successfully utilize digital devices compared to their peers in other South African, global cities and environments. Learners only get exposed to computers in public libraries and when they visit cities, which are also very far from them in terms of proximity. Therefore, the observation called for a study based on digital literacy since learners need and will continue to need digital literacy for both academic and general life activities.

The proposed study concentrates on grade 12 learners in the context of a rural school in KwaZulu-Natal since most previous studies do not cover grade level education.

Even though digital tools are not feasible in many rural schools, it is fundamental to understand the attitudes, perceptions, and fear as potential challenges of students with this trend. The school does not have any computers, laptops, tablets or projectors to carry out the learning process.

1.2. BACKGROUND OF THE RESEARCH PROBLEM

It is indisputable that we live in an information civilization or information era whereby the world is based on digital tools to access information. This study is done in response to observations that grade 12 learners at the rural Centocow High School at Harry Gwala District are not freely exposed to digital skills and tools such as computers, smartphones, and tablets.

According to McGlynn-Stewart, MacKay, Gouweleeuw, Hobman, Maguire, Mogyorodi, and Ni (2017), first-year students from diverse educational experiences face the challenge of utilizing technology gadgets in higher education since they lack computer experience and digital competence. Therefore, the proposed study exclusively focused on grade 12 learners and no other categories. Rodriguez-de-Dios and Igartua (2018) and Minasyan (2017) call for future studies to address the associated disadvantages, dangers, negative perceptions, hindrances, and possible risks as a result of digital literacy and skills for different categories of users of digital tools and technologies.

The study concentrates on grade 12 learners in the context of a rural school in KwaZulu-Natal since most previous studies do not cover grade level education. Even though digital tools are not feasible in many rural schools, it is fundamental to understand the attitudes, perceptions, and fear as potential challenges of students with this trend as the school does not own any digital gadgets for learners to utilize.

1.3. BACKGROUND AND RESEARCH CONTEXT

Technology has played a big part in the learning and distribution of information through developments that continue concurrently to alter the field of literacy (Lai, Hwang, Liang and Tsai, 2016). Innovative technologies and advancements are altering how people learn, communicate, administrate, and work in media (Huckauf and Lotze, 2018). The concentration of the current study is on the latter. The proposed research seeks to find out how high school learners in grade 12 perceive and act towards technological tools,

their narratives about digital literacy, and their knowledge regarding the norms and practices of digital tools.

These progressions have brought modifications to how people achieve, perform, write, assess, use, and produce information (Burbules, 2018). Therefore, grade 12 learners at Centocow High School lack skills and competencies in creating, sharing, using, and developing information by the utilization of digital tools. It is useful to unravel their frustrations, experiences, and fears in the setting of digital literacies towards more inclusive education.

1.3.1. Centocow High School

Centocow is a public secondary school in the Harry Gwala District and is classified under quantile two as a no-fee institution. The study focuses on finding learners' insights and attitudes towards digital tools. Grade 12 learners at the rural Centocow High School at Harry Gwala District are not freely exposed to digital skills and tools such as computers, smartphones and tablets and their perceptions, attitudes, reactions, experiences and frustrations with digital literacy and associated tools are critical to intervention strategies for digital inclusion.

Centocow high school currently does not have computer labs or any other digital tools that learners can use to improve their digital literacy. The school has never owned digital gadgets or tools before; hence, learners in this school rely on hardcopy textbooks to complete given assignments.

1.4. RESEARCH PROBLEM

According to Daya and Laher (2019), computer education is long overdue as respondents proved that they struggled in their first year at university due to a lack of knowledge about computers. Fear of exposure that learners and some teachers cannot successfully utilize online resources hold them back as they find it difficult to ask for help. As a result, the choice of grade 12 learners was based on Daya and Laher's (2019) study. Consequently, researching the perceptions and the challenges of digital literacy of grade-level students is critical. Teachers claim that all kinds of teaching materials used with computers are designed to meet students' interests and needs (Temple, Ogle, Crawford and Freppon, 2017).

The current study identified a necessity for an investigation on digital literacy, especially for the basic skills of grade 12 learners. The aim is to explore students' ability to find, evaluate and compose relevant search queries and engage with digital forms such as text, visual, sound and games for casual, social, and academic contexts. Failure to grasp and understand those essential competencies stand in the way of effective and efficient deployment and implementation of intervention strategies in South Africa (Arthur-Nyarko, Agyei and Armah, 2020). The researcher was encouraged to pursue this study after observing that grade 12 learners at Centocow High School in a rural area at Harry Gwala District are struggling to use digital devices for information seeking and meeting their information needs. Currently, young people's behaviour and perceptions of digital tools are not well understood.

The study's core objective is to explore the perceptions and attitudes of grade 12 learners at Centocow High School in the rural Harry Gwala District use of digital literacy and tools. It seeks to understand how grade 12 learners in this rural school respond to the current usage of digital tools in response to their information needs. The study will investigate the limited digital gadgets used by grade 12 learners to search for information. The overarching objective of the study determines the perceptions of digital literacy of grade 12 learners and the underlying factors associated with the phenomenon.

1.5. RESEARCH QUESTIONS

1.5.1. What are the perceptions of digital literacy skills of grade 12 learners at Centocow High School at Harry Gwala District?

1.5.2. How do grade 12 learners at Centocow High School at Harry Gwala District get access to digital tools?

1.5.3. How does gender affect the digital literacy skills of grade 12 learners?

1.5.4. How do grade 12 learners' characteristics affect the digital skills of the students?

1.5.5. What are the challenges of grade 12 learners in acquiring digital literacy competencies?

1.6. SCOPE AND LIMITATIONS

The study was limited to grade 12 learners at Centocow High School at Harry Gwala District, KwaZulu Natal, South Africa. Only learners above the age of 18 were involved in the study.

1.7. BROADER ISSUES TO BE INVESTIGATED

The broader issues of the study are captured below:

- Explore the perceptions of grade 12 learners at Centocow High School on digital literacy skills.
- Determine the levels of literacy of grade 12 learners at Centocow High School to digital literacy.
- Examine the effect of gender on digital literacy skills.
- Investigate the effect of grade 12 learners' characteristics on their digital literacy skills.
- Identify the challenges of grade 12 learners in acquiring digital literacy competencies.

1.8. THEORETICAL FRAMEWORK

The present study adopted Beetham and Sharpe's (2010) digital literacy model. The model clarifies that digital literacy includes skills, knowledge, searching awareness, assessing and distribution of digital information to facilitate and improve one's work. The above-mentioned model considers initiatives to create an advantageous learning atmosphere by students by bearing in mind the requirements and favourites counting ICT, preparing the journey of learning and technology practice to access and showcase accomplishments. It was originated by Beetham and Sharpe (2010) with the idea that effective learning is built upon access, skills and practices that enable the development of attributes of effective learners in a digital age.

1.9. RESEARCH METHODOLOGY AND METHODS

The study used the interpretivism research paradigm because it believes in multiple realities constructed on a social basis. A descriptive research design was used, as the study does not have an intervention or treatment and is considered non-experimental (Baker, 2017). The study used a merger of quantitative and qualitative approaches to

address the research questions (Beck, 2014). Non-probability and probability sampling was used in the present research.

The population of the study was grade 12 learners at Centocow high school at Harry Gwala District, KwaZulu-Natal in South Africa, with 103 learners. The current research used purposeful sampling to collect qualitative data, since it is an approach in which specific sets of people or events are carefully chosen on purpose to dispense significant information that cannot be attained from other choices. The current study used simple random sampling to gather quantitative data because it is the most widely used method and is effective in social science or descriptive research.

1.10. DEFINITION OF KEY TERMS AND CONCEPTS

The purpose of the definition of terms is for clarification of the words and terms used. This leads to a clearer understanding of the study.

1.10.1. Digital literacy

Digital literacy is the capability to sail across numerous digital platforms and comprehend, assess, and interconnect through them (Bothma, 2017).

1.10.2. Digital tools

Digital tools enable creativity that pupils can use with a wide range of resources available to them online. These are computers, tablets and smart phones that students can use (Minasyan, 2017).

1.10.3. Digital skills

Digital skills are the skills that enable one to utilize digital tools or technological advancements (Van Deursen, Van Dijk, Van Laar and De Haan, 2017).

1.10.4. Digital literacy practices

Digital literacy practices involve social networking, the use of web pages and being able to include visual elements such as videos, searching and sharing information (Combes, 2016).

1.10.5. Computer literacy

Computer literacy is a level of familiarity with the basic hardware and software concepts that allows one to use personal computers for word processing, entry of data, electronic communications and worksheets or databases (Bothma, 2017).

1.10.6. Information literacy

Information literacy comprises information procedures that openly talk about meaning, inspiration, and the superiority of life (Haider and Sundin, 2021).

1.11. ETHICAL CONSIDERATIONS

The present study protected participants' anonymity and ensured not to reveal their identity in any manner. Gatekeeper's approval was sought and the ethical protocols at UKZN were adhered to. The current study ensured the non-violation of any rights of the participants. The age group of grade 12 learners at Centocow High School was between 18 and 21 therefore, parental consent was not needed as per South African law.

1.12. CHAPTER SUMMARY

Chapter one offered a background and overview statement of the research. It outlined the problem statement, study's main aim, objectives as well as research questions, the definition of key terms that are appropriate to the study and the population of the research.

CHAPTER TWO: LITERATURE REVIEW

2.1. INTRODUCTION

This chapter evaluates previous studies on digital literacy and its influence on people's digital skills. It further reviews and unpacks the core assumption and arguments of the model. Furthermore, the chapter details information regarding the core constructs or variables as well as reported weaknesses of the model. This chapter provides a summary of previous studies conducted on digital literacy, gender effect on digital literacy, effects of children's characteristics on digital skills and challenges faced by learners when using digital tools. It further provides the use of digital tools and principal model upon which the study was constructed. The current study seeks to find out the perceptions of learners' digital skills, access to digital tools, and gender effect on the digital literacy skills of grade 12 learners' skills at Centocow High School. The themes that informed the subheadings below are drawn from related literature, constructs of the adopted theoretical frameworks and the need to address the research questions of the study.

The current study adopts the Beetham and Sharpe (2010) model, to unpack and clarify what digital literacy includes, such as skills, knowledge, searching awareness, assessing and distribution of digital information to facilitate and improve one's work. The above-mentioned model considers initiatives to create an advantageous learning atmosphere for students, simply by bearing in mind the requirements and favourite subjects, including ICT, preparing the journey of learning and technology used to access and display successes.

2.2. STUDIES CONDUCTED ON DIGITAL LITERACY

The study concentrates on grade 12 learners in the context of a rural school in KwaZulu-Natal since most previous studies do not cover grade level education. Even though digital tools are not feasible in many rural schools, it is fundamental to understand students' attitudes, perceptions, and fears as potential challenges towards the trend. Centocow High School does not have any computers, laptops, tablets, or projectors for carrying out the learning process.

According to McGlynn-Stewart *et al.* (2017), first-year students from diverse educational backgrounds face the challenge of utilizing digital gadgets in higher

education since they lack computer experience and digital competence. Therefore, the study exclusively focused on grade 12 learners and no other categories. Rodriguez-de-Dios and Igartua (2018) and Minasyan (2017) call for future studies to address the associated disadvantages, dangers, negative perceptions, hindrances, and possible risks because of digital literacy and skills for different categories of users of digital tools and technologies.

Technology has converted education at the post-secondary level and considerably improved the occurrence of digital learning atmospheres (Sharp, 2018). According to the author, the research explored apparent confidence levels and prominence with cooperative practices of digital literacy amongst adult learners. Since digital education settings have become extra predominant, adult teachers have begun to combine common learning tasks and using digital literacy practices with technological tools, such as asynchronous discussions (McDougall, 2015). Accordingly, the present study used the learners' perceptions to shed light on digital literacy in rural KwaZulu-Natal schools.

Rambousek, Stipek and Van Kova (2016) dealt with digital literacy content teaching in lower secondary and primary schools from pupils' and teachers' viewpoint. They wanted to recognize the existing structure, orientation, and state (concerning features relating to the organisation, curriculum, and procedures) of digital proficiency progress in children. They aimed at constructing applicable digital literacy levels in official education, as well as recognising crucial processes and features of digital competency improvement in schools and play a part in developments in the quality of education in an information social order. Consequently, the current study focuses on grade 12 learners to extend digital literacy knowledge beyond teachers and place learners within the eye of scholarly analysis.

Feerrar (2019) aims at developing or expanding digital literacy programs in the face of challenges with traversing wide-ranging definitions for digital literacy itself. To respond to this encounter, Feerrar (2019), intended to disseminate the procedure for emerging a mutual context for digital literacy at one organization, counting drawing on themes within soliciting campus feedback, making revisions, and existing frameworks. As digital equipment persists inspiring research, learning and teaching, universities and colleges are evolving and increasing digital literacy plans to confirm that students can not only utilize digital tools but also critically create and consume a range of content.

Gibson and Smith (2018) intended to present the needed abilities desired by both students and pupils to sail across their information journey and discuss how teachers can maintain the development and acquisition of these abilities. The study investigated digital literacies (preparing students and pupils for their information journey in the 21st century). Digital gadgets are part of everyday life for many children and some, it is their initial literacy experience. Young children are involved in a variation of multimodal multimedia applications from an early age. It is vital that teachers assist them in coping with the information they obtain and how they depict themselves online (Gibson and Smith, 2018). However, grade 12 learners at Centocow high school are delayed in terms of exposure to digital tools and the utilization of digital platforms. Nevertheless, the present study explores how learners manage information currently.

Children's experience towards innovative technology permits them admission to a superior choice of writings. They rapidly improve expertise and abilities to sail across other procedures of communication expertise and internet sites. However, grade 12 learners at Centocow high school do not have access to a wide range of internet sites because they do not have enough digital gadgets to utilize. As a result, it limits the choices of texts or information to choose from when completing assignments or projects. Accordingly, the current study explores how learners access digital tools presently.

2.2.1. Digital literacy

Digital literacy is an individual's capability to establish, discover, analyse, 0value, and utilize the necessary information through digital advancements or technologies. It comprises a working knowledge of numerous technologies and an understanding of how they can be utilized (Krishnamurthy and Shettappanavar, 2019). Digital literacy also talks about the creation of content and contains texts in digital designs such as tweets, emails, blogs and generating broadcasting platforms such as podcasts and videos (Heitin, 2016). Digital literacy, according to Lynch (2017), is the capacity to find, create, share, evaluate and utilise information found online. It is a skill that allows someone to interact and "understand information, however, presented" in the age of multimedia (Bazela, 2017).

Pade-Khene (2018), in her research entitled "implanting transfer of knowledge in digital citizen commitment in South Africa: developing digital literacy offers a case for

evolving initiatives of digital literacy in South Africa. According to the author, the method for transferring knowledge and emerging digital literacy that was recognized in this article offers a policy for future application of digital citizen commitment creativities in resource-constrained settings. Thus, the present study seeks to find out the digital literacy perceptions of grade 12 learners at Centocow High School and the challenges they face in acquiring digital literacy competencies.

Steyn (2018) evaluates varying opinions concerning digital literacy interferences for South African entrepreneurs. The research outcomes stipulated that most entrepreneurs now have admission to information technology experts who can support them to become more digitally literate. Numerous technological advancements are being established, such as the Microsoft Office package; however, these technological advancements should concentrate on digital literacy training interferences and should be and easily accessible and simple to everyone. Accordingly, the current study investigates the accessibility of digital tools for grade 12 learners at Centocow High School.

Timmis and Muhuro (2019) examine rural students' digital conversions within South African higher education. The above-mentioned authors recognised the challenges in accessing digital or technological tools in rural areas and the significance of mobile phones for growth. For rural students to be effective digital practitioners in universities, higher education should recognize previous information forms and digital experience and concentrate on increasing individual and mutual agency in assisting evolutions as tools for influencing decolonised digital learning (Timmis and Muhuro, 2019).

2.2.2. Digital literacy skills and practices

Digital literacy practices involve social networking, the use of web pages and being able to include visual elements such as videos, searching and sharing information or content on the web and in databases, also communicating in chat rooms (Combes, 2016). Consequently, the present study uses the lens of gender, age, economic status, satisfaction, motivation, and associated factors to view the perceptions, attitudes, fears, and emotions of grade 12 learners in the landscape of digital literacy.

Kaeophanuek, NaSongkhla, and Nilsook (2018) stated that digital literacy skills include a wide range of capabilities, knowledge, attitude, behaviours, and skills necessary for them to utilize and work with digital devices such as tablets, smartphones, desktop

laptops and computers as a network of technologies in performing tasks competently and effectively. Digital literacy skills simplify utilizing electronic information resources in solving academic problems such as doing assignments, conducting research, and getting familiar with general life activities in society. These skills can contribute to learners by enabling them to obtain e-books, e-journals or online novels, newspapers, magazines, and other creative writings for their recreational reading. Accordingly, the present study investigates the frustrations, perceptions, and expectations of grade 12 learners concerning digital skills and practice.

Marsh, Hannon, Lewis and Ritchie *(*2017) studied young children's commencement into family literacy practices in the digital age; their discoveries put forward that children who were occupied in a variety of programmes and practices, including a wide range of meetings with other family members who scaffolded their education and pleased in the technological capabilities of their children. The article proposes that, in the light of socio-cultural expansions in the new media age, a transformation in concentration from 'family literacy' to 'family digital literacy' is essential.

Njenga (2018) analysed digital literacy in the pursuit of an inclusive definition to bring to the fore the greatest precarious issues of socio-economic digital literacy development. Highlighted matters demonstrate that digital literacy is not observed in segregation, but rather in terms of its results. Therefore, the present study seeks to determine if digital skills and practices of grade 12 learners at Centocow High School are hindered by socio-economic developments.

Chetty *et al.* (2018) investigated joining the digital divide by evaluating digital literacy; this study recommends monitoring digital literacy oversight and organization to notify the progression of the existing digital literacy. The author stipulated that digital literacy would continue to be a vibrant conception. Therefore, it needs a fundamental set of scopes and detecting the most suitable means for accomplishing digital literacy practices.

Terras and Ramsay (2016) evaluated family digital literacy practices and children's mobile phone use. The research found that parents normally express their concerns about the nature in which their children use mobile phones; however, parents themselves frequently use a variety of insecure internet activities and unnecessary usage of the phone at home. Parents have specified their concerns regarding the likely

undesirable influence of technological advancements. Therefore, according to the authors, parental awareness is recommended regarding their inspiration towards digital literacy skills and practices of their children in the setting of internet protection and the acceptance of decent digital literacy practices.

2.2.3. Access to digital tools

Learners only get exposed to computers in public libraries and when they visit cities, which are also very far from them in terms of proximity (McGlynn-Stewart et al., 2019). Therefore, the observation called for this study based on digital literacy since learners need and will continue to need digital literacy for both academic and general life activities. Grade 12 learners at Centocow High School hardly access digital tools because the school does not possess any digital tools. They are also located far from the city where they can make use of such tools and get used to them.

Oyedemi and Mogano (2018) examined technology access amongst first-year students at a countryside South African university. The study concentrated on the digital willingness of students before their university admission, as numerous universities offer computer and internet access. Quaicoe and Pata (2018) examined basic educators' perspectives on digital learning and teaching in Ghana. The study exposed that digital culture factors, personal and digital attitudes directly affected digital activities. Regarding environmental factors, only schools' digital schedules had an impact on teachers' digital action. However, the teacher's digital skills and insights affect learners' digital perspectives.

Ng'ambi *et al.* (2016) investigated how technology enhances learning and teaching in South African higher education, and their study recognised that South Africa's institutions of higher education have shifted from being merely accountable for both their own comparatively deprived information communication technology infrastructure and learning with "unrestricted" educational resources that are open, easy, and obtainable within and outside the institution. Though social media and mobile remain apparent now more than ever, learning and teaching practices in South Africa's higher education's learning and teaching practices are mainly unaffected.

Adukaite, Van Zyl, and Cantoni (2016) in their research entitled "the part of digital technology in the education of tourism: a case study of South African secondary schools, discovered that information communication technology is still partial in its

incorporation as an academic support tool. The key difficulties for integration contain the absence of teachings, technology anxiety, resources availability of resources, and learner resistance to using their mobile devices.

Centocow High School is a public secondary school in the rural Harry Gwala District and is classified under quantile two as a no-fee institution. Hence, they may not successfully utilize digital devices compared to their peers in other South African, global cities and environments. The school does not possess any digital tools from the department of education such as computers, laptops, or tablets. Teachers still use manual teaching methods and do not have overhead projectors and laptops. Therefore, learners still hardly access digital tools.

2.2.4. Gender effect on digital literacy

Krishnamurthy and Shettappanavar (2019) investigated digital literacy amongst feminine postgraduate students of Karnatak University in India to determine literacy of using digital resources by female postgraduate students of Karnatak University, Dharwad. Their study found that being digitally literate is a need for women empowerment, which help to build women empowered societies. It found that digital literacy is becoming as vital as other traditional literacy skills. Special attention must be needed to inspire women to obtain technological skills and help them stay updated with developing technologies. Appropriately, the current research also regulates the level of students' digital literacy expertise, regularity of internet use by gender and related characteristics.

Krishnamurthy and Shettappanavar (2019) sought to discover awareness of diverse databases and their understanding with numerous search approaches to retrieve e-resources. Over the past few years, it has been an understanding that is mutual that male students possess extra confident approaches concerning technology and utilize technology extra actively and have developed digital literacy self-efficacy. Henceforth, male students achieve better compared to their female peers (Siddiq and Scherer, 2019). A lately published meta-analysis on gender and approaches to technology partially approves this view by disclosing that there is a small but important positive outcome to boys, proposing that boys have higher digital literacy and embrace more complementary approaches concerning technology than girls (Cai, Fan and Du, 2017).

The little contribution of girls and women in computer-related professions and computer science courses, as well as the carrying out of educational computer use in primary and secondary education, lead to many studies investigating the differences between girls and boys in computer access, use, abilities, and attitudes (Punter, Meelissen and Glas, 2017). Perceived masculinity of computers, boys feel more encouraged to explore various uses of computers, thereby increasing their knowledge and confidence (Punter, Meelissen and Glas, 2017). Consequently, the current study finds out the disposition of rural grade 12 learners to digital literacy based on gender.

Nowadays, people are compulsory to utilize a variability of electronic resources that are electronic. Information literacy is becoming progressively significant to perform tasks and solving problems encountered by information users. The current study highlights the difficulties students encounter in retrieving information and acquiring digital literacy competencies. The study has revealed that girls mostly utilize computers for school projects whereas boys also use computers for free-time activities. Seok and DaCosta's (2017) research results revealed that gender was an important analyst of digital propensity, with males showing a stronger propensity for information and communication technology. The mean of males' digital propensity was significantly higher than that of females.

Çam and Kiyici (2017), analysed the digital literacy levels of potential educators in terms of gender. Their findings specified that prospective male teachers' visual and computer literacy levels were higher than that of future female teachers.

Mudhai, Wright and Musa (2016) studied gender and precarious media information literacy in the digital age in Kenya, South Africa, and Nigeria. Their research results indicated that some activists are benefitting from the accessibility, uniqueness, and practically sudden influence of social media as a means of mobilising resources and distribution of information to the target audience. Within South Africa, it was found that the roles and plight of mothers who struggle to mould members of society need further attention. Through minor stages and with an insignificant financial plan, the media graduate has arranged community mass media to create a change at a very simple and confined level.

2.2.5. The effect of children's characteristics on digital literacy skills

Recently, there has been an ongoing debate highlighting the necessity for emerging digitally proficient literate, skilled, and proficient societies in a continually fluctuating online and technological environment (Martzoukou, Fulton, Kostagiolas and Lavranos, 2020).Therefore, it has been identified that geographical location might also play a part- since the urban-rural perspective of children's informative experiences is shaped through parent commitment in children's early education, which can positively impact academic consequences (Clarke, Kozoil & Shendan, 2017). Action research was done by Yamac and Ulusoy (2017), to examine the sound effects of digital storytelling in refining the writing expertise of third-grade students registered in rural primary schools. Their study specified that digital storytelling enriched students' philosophies, sentence fluency, word choice, organization, and resolutions concerning writing excellence.

Mnyanda and Mbelani (2018) showed that many learners are becoming digitally literate, regardless of their rural-urban location or socio-economic status. Nevertheless, digital literacy is not used as a base to advance literacy as promoted in the new assessment policy statements and curriculum. Hence, studies investigating home environment effects have identified parental traits that might play a fundamental role in encouraging children's digital literacy and improvement (Van Bergen, Van Zuijen, Bishop and De Jong, 2017). The authors further explain that within a family environment where the children grow up in, parents' scholastic fulfilment, how often parents read and expose themselves to digital tools and reading materials have an impact on how their children interact with digital tools and reading materials.

Existing study on paternal intervention discloses that numerous paternities concurrently comprehend digital media and technologies as progressive yet inspiring (Kumpulainen and Gillen 2017). As a result, the present study employed the contexts of a rural school for an analysis of learners' perceptions, attitudes, and prospects for digital literacy. An understanding of the above is fundamental for any digital literacy intervention. Kumpulanainen and Gillen (2017) find that parental mediation is linked with several media devices in the home, education, the parents' gender, internet skills, cultural or socioeconomic background and computer approaches. Most paternities use constricting practices, while some draw in admission to digital devices that children desire to use as a reward and penalty system.

Hence, it was recognised that even with very young children, where the parent originally takes the instructor's part, this support fades as children quickly become capable in their favourite actions (Kumpulainen and Gillen 2017). In many cases, the emotions, anecdotes, and experiences of learners at rural schools in the framework of digital literacy and abilities are not known. Accordingly, the current study captures such rare emotions and narratives about the learners' feelings about missing out in the digital age. Çam and Kiyici (2017) investigated the prospective teachers' perceptions their income levels. Their conclusions detailed that personal income levels do not influence the digital literacy levels of prospective teachers. Likewise, the current study seeks to determine if the grade 12 learner's characteristics (including income) affect their digital literacy at Centocow High School.

Scott and Marsh (2018) investigated digital literacies in early childhood. They found that there is a general absence of development regarding children between the ages of 0-8 years' use of technology in the curriculum. According to the authors, there is still a lack of knowledge. It will be significant for academics over the coming years examining young children's digital literacy practices, both in homes, communities, and across their early years. As a result, the present study assesses the digital literacy of grade 12 learners at Centocow High School.

2.2.6. Challenges faced by learners when using digital tools

Technology has modified the methods people study, conduct businesses live, create, and manage information (Al-Qallaf and Al-Mutairi 2016). Therefore, learners especially from rural areas face the challenge of not knowing how to make use of digital tools. Numerous studies point out that the absence of access to resources, counting home access, is another difficult challenge that inhibits educators from integrating new technologies into learning (Ghavifekr, Kunjappan, Ramasamy and Anthony, 2016). Perhaps, the findings by the authors are similar or different from the context of a rural KZN school in South Africa.

Technological progress in media is changing the way educational institutions operate. This move requires members of the education society to not only possess abilities and skills associated with the use of technological tools but also awareness concerning the practices and norms of the suitable use of digital devices (Maphosa and Bhebhe 2019). Mashile's (2017) research indicated that insufficient computer resources were

one of the greatest obstacles to technology addition in classrooms, exposing learners to the inability of utilizing digital tools.

The main challenges that learners face are the absence of computers and inadequate digital tools, shortage of information, and teaching in how to use digital tools in classrooms. Noting inequalities in access to the transformative perspective of digital tools, as well as the fact that learners have no access to the World Wide Web is considerable (Nyahodza and Higgs, 2017). Lack of valuable understanding about the wider benefits has been identified to be the challenge that learners face when using digital tools (Brevik and Davies, 2016). Accordingly, the current study evaluates the receptiveness of grade 12 learners in a rural school to a proposition of digital literacy tools.

2.3. USE OF DIGITAL TOOLS

According to Compton-Lilly (2017), there is still a gap in internet usage since women and children experience a delay in the use of digital tools. The present study also seeks to identify the effect of gender on the digital literacy of grade 12 learners at Centocow High School. Therefore, gender is sensitive to the study because perhaps, digital literacy may be gender-based. Gebhardt, Thomson, Ainley and Hillman (2019) provided a comprehensive examination of the gender variances in the capabilities of teachers and students regarding computer usage.

According to Blikstad-Balas (2012), understanding literacy is performed through spheres;- mainly, the language practices infusing school frameworks that are intermediated access to the internet in classrooms. It also investigates how seminary learning might be shifting due to the overview of laptops or personal computers for higher secondary school students in Oslo, Norway. The current study narrows down to specific digital tools and not broad applications of the internet. Also, the present study emphasises learners' attitudes, perceptions, and literacy levels and usage of digital tools. It seeks to find out students' experiences when utilizing digital literacy tools in response to their information in rural school setting in South Africa.

Pant and Odame (2017) stated that the insights from the learners' experiences would help frame the strategies to approach digital literacy interventions, publicity, awareness, the teaching of digital skills, enlisting new adopters, and grooming acceptable digital practices in rural communities. The study was driven by the fact that

some students indicated that they had not used computers before and still must acquire basic skills like typing, keyboard and mouse usage. Finally, the current study will apply similar metrics where appropriate.

Padayachee (2017) investigated a snapshot survey of information communication technology incorporation in South African schools. The investigation found that the approval of technology remains low. According to the above-mentioned author, there is a lesser level of sharing information and ideas using digital tools. It was found that teachers are indeterminate using high opinion to the implementation of digital tools usage whereas being burdened by poor infrastructure and lack of skills.

Mhlanga and Moloi (2020) examined COVID-19 and the digital conversion of teaching in South Africa. They reported that in South Africa throughout the lockdown a diversity of the 4th industrial revolution tools was released from prime learning to upper and tertiary schooling where informative accomplishments substituted to distant education (online learning). These remarks point to the fact that South Africa commonly has some pouches of brilliance to motivate the education sector into the 4th industrial revolution, which has the potential to increase access. Access to education, particularly at a higher education level, has continuously been a contest due to the inadequate number of spaces accessible. Accordingly, the current study seeks to determine if grade 12 learners at Centocow high school use digital tools and their challenges in acquiring digital literacy competencies.

Tirado-Morueta (2018) investigated the socio-demographic division in the usage of the internet moderated by digital literacy backing, the data presented that the socio-demographic factors were related to the elementary points of admission and utilization of the digital tools. Similarly, the current study seeks to determine grade 12 learners' hindrances in utilizing digital tools and acquiring digital competencies. The aim of Jere, Jona and Lukose (2019) was to evaluate the current approaches that are being used for learning and teaching Mathematics and to generate a WhatsApp group for teaching and learning Mathematics. Likewise, the present study investigates digital literacy including social media among grade 12 learners; however, in a rural area since digital tools and any other developments take time to reach such areas.

Digital tools usage has become the forefront of access to information nowadays. It has required teachers to tap into digital learning styles to introduce their learners to digital

literacy. According to Matlala (2015), digital literacy can provide innovative ways for educators to involve learners in their subject matter and enable cooperative learning. There is no doubt that the use of digital tools has promoted the development and implementation of new innovative ways of sharing information as well as easily accessing it. The high school learners seem to be the main dominators of these services, facilities, and sources as they are well skilled with the new technologies and their applications in the present networked society.

2.4. PRINCIPAL MODEL UPON WHICH THE STUDY WAS CONSTRUCTED

The present study adopts Beetham and Sharpe's (2010) digital literacy model. The model clarifies that digital literacy includes the skills, knowledge, searching awareness, assessment and distribution of digital information to facilitate one's work. The above-mentioned model considers initiatives to create an advantageous learning atmosphere for students simply by bearing in mind the requirements and favourites subjects, including information communication technology, preparing the learning journey and technology used to access and showcase achievements.

2.4.1. Relevant theories/models and their weaknesses and reasons for not using them

Handley (2018) stated that the term digital literacies were explicitly used to distinguish between digital skills and literacies. Digital literacy is a contemplative ability on deciding when to utilize technologies. However, it was identified that Beetham and Sharps' 2010 model in a to some extent amended method (access, awareness, skills, practices, and identity moving up the pyramid). Jisc, (2014) seems like the inventor of the initial JISC framework produced by Helen Beetham and named the digital competencies framework. The model was subjective to the language of SCONUL's Pillars around information and media literacies, nevertheless, also caught additional technology stimulated languages such as communication and collaboration and was offered in a visually spoke design and engaging hub. However, Jisc's (2014) model is not suitable for the present research since it aims at improving the digital skills of people mostly in the higher education sector, helping policymakers develop policy, and informing education and teaching initiatives. Whereas the present study focuses on examining the digital literacy of grade 12 learners.

Handley (2018) preferred to use the JISC (2014) model, the reason being that it uses a combination of proficiency, addressing a variety of digital necessities of the educational workforce, provides admission to upkeep and materials of skills development, helps develop technical solutions to presenting the initiative, and most importantly, bringing a compact educational foundation to technological developments. Handley (2018) further stipulated that the combination of digital welfare into this context detects a different category of digital competence, the capability to cope with disputes concerning the use of digital technology, such as work-life balance.

Feerar (2019) stated that the JISC framework proposed to theorize digital literacy as a multi-layered, vibrant set of skills, attitudes and knowledge that may shift controlled by individual goals and context. The inter-related literacies show that Beetham and Sharpe's (2010) model became the comprehensive lens for the context, rather than a sole experience of explaining digital literacy. The structure shapes on models in the literature that replicate several of digital literacies whereas contributing additional optical importance on the shared proficiencies amongst these literacies. However, the sequence of standards in the JISC framework developed to contemplate the relations concerning the proficiency parts (which capabilities should be next to each other in the graphic) as well as the wider effective features of digital literacy.

Jisc's (2015) digital capabilities framework comprises a modification to corresponding parts to recommend how competencies support and shift to having information communication technology skills at the midpoint as an access point to other skills. Conversely, the current study's main aim is to explore the perceptions and attitudes of grade 12 learners at Centocow High School in a rural Harry Gwala district to use digital literacy and tools. Therefore, Jisc's (2015) digital capabilities framework could not be employed, as the contemporary study preferred a model that describes the development of digital literacy, skills, and practices in the acquisition of digital literacy competencies.

Bawden's (2008) digital literacy model that uses four digital literacy concepts, i.e., foundations, contextual understanding, fundamental experiences, and approaches and viewpoints were not identified as suitable for the current study since its main focuses were on factors that contribute to one's digital literacy and actual learning. However, the current study considers or explores perceptions and attitudes of grade 12 learners not only for effective learning but for general life activities. According to

Liu, Tretyakova, Fedorov and Kharakhordina (2020), the digital literacy development model established a moral education triangle consisting of the amalgamation of three education atmospheres, namely, practical, real, and neurocognitive. The examination of the investigation data confirmed that in the collective of the associated guides for diverse social groups of the people, school teachers, and professors of institutions of higher educational have reached a higher level of digital literacy.

Perez and Murray's (2010) digital literacy model merges skills, attitudes and knowledge in the perspective that replicate self-awareness and is determined to allow computer user to make their mark in the digital world, equip them with abilities to generate new skills and knowledge that form the basis for creativity. However, the current study seeks to find out the digital literacy of grade 12 learners and factors that might hinder them from acquiring digital literacy competencies. Therefore, Beetham and Sharpe's (2010) model looks at how an individual can become more proficient over time and ultimately realize a level of expert practice depending on individual motivation and context.

2.4.2. BEETHAM AND SHARPE'S (2010) DIGITAL LITERACY MODEL

The study adopts Beetham and Sharpe's (2010) digital literacy model. The model clarifies that digital literacy includes the skills, knowledge, searching awareness, assessment and distribution of digital information for the determination of facilitating and refining one's work. The above-mentioned model considers initiatives to create an advantageous learning atmosphere by students simply by bearing in mind the requirements and favourites subjects counting ICT, preparing the journey of learning and technology used to access and showcase triumphs. It was originated by Beetham and Sharpe (2010) with the idea that effective learning is built upon access, skills and practices that enable the improvement of attributes of operative learners in a digital age.

The model has been successfully applied by Montebello (2016) when investigating digital literacy in Post-Certification Healthcare Education. She discovered that this model could be beneficial as an instrument to plot out and monitor the tactical features involved in the advancement of digital literacy across an institution. The model is made up of the following variables: access and awareness - meaning that learners should be able to access and be aware of existing digital tools. Skills - meaning they should

acquire useful skills to effectively use digital tools. Practices - meaning learners should have ways of thinking and acting to acquire needed information in digital form or using digital tools in general. Lastly, identities - meaning learners should manage to identify the appropriate digital tool to utilize based on the information needed or general day-to-day activity. Thus, access and awareness relate to the research questions of the current study since it identifies the challenges experienced by learners in acquiring digital literacy competencies.

Beetham and Sharpe (2010) argue that they needed to understand technological innovation from the perspective of how learners respond to the technology-rich world they find themselves in, and specifically how people develop to be effective learners within these environments. All methodologies and theories have their weakness and limitations (Velte and Stawinoga, 2017). Effective digital literacy training is the spirit of learners since digital tools are just enablers, pushing the envelope of what learners can create. The current study plans to minimize that criticism by relating the most relevant variables of the model to the critical questions of the study. Also, the justification of the choice of model is based on its appropriateness, robustness, dependability, and applicability similarly, the variables and assumptions of the model address the research questions raised. A focus will be maintained on technical skills, environmental and cultural contexts as demanded by the research.

2.4.2.1. Originators of the model and how it was formulated

As indicated above, the adopted theoretical framework for the current investigation was Beetham and Sharpe's (2010) digital literacy model. It was originated by Beetham and Sharpe (2010) with the idea that effective learning is built upon access, skills and practices that enable the development of attributes of effective learners in a digital age. Beetham and Sharpe (2010) argue that they needed to understand technological innovation from the perspective of how learners respond to the technology-rich world they find themselves in, and specifically how people develop to be effective learners within these environments.

2.4.2.2. Core assumptions and arguments of Beetham and Sharpe's (2010) model

Beetham and Sharpe (2010) created a model showing how digital literacy can happen effectively. They look at digital literacy as a process where the user will have to use

the skills gained in the context of their current surroundings which gives this a circular structure where a user may progress and regress in literacies as technology changes. The model has been the basis for institutional models at Bath University, Cardiff University, University of Reading, Oxford Brookes University, and Leeds Metropolitan University (now called Leeds Beckett University) (JISC, 2014).

The model can be used as a hierarchy where a person moves from one model to the next as they become acquainted with certain software or become more competent in their skills (Beetham and Sharpe, 2010). It also allows flexibility in that it allows users to go through the hierarchy when a new technology is encountered, but it also allows the user to drop down levels if they feel that they need to learn new competencies, skills or encounter new technologies.

Effective digital literacy training is the spirit of learners since digital tools are just enablers, pushing the envelope of what learners can create. The current study minimizes that criticism by relating the most relevant variables of the model to the critical questions of the study. Also, the justification of the choice of model is based on its appropriateness, robustness, dependability, and applicability. Similarly, the variables and assumptions of the model address the research questions raised. A focus will be maintained on technical skills, environmental and cultural contexts as demanded by the research. Figure 2.1 below presents the illustration of the model:

Figure 2.1: Beethham and Sharpe's "pyramid model" of digital literacy development model (2010)

2.4.2.3. Core constructs / variables or attributes of Beetham and Sharpe's (2010) model

The model is made up of the following variables: access and awareness - meaning that learners should be able to access and be aware of existing digital tools. Skills - meaning they should acquire useful skills for the effective usage of digital tools. Consequently, the current study questions the digital literacy skills of grade 12 learners at Centocow High School. Practices - meaning learners should have ways of thinking and acting to acquire needed information in digital form or using digital tools in general. Thus, access and awareness relate to the research questions of the current research since it identifies the challenges experienced by learners in acquiring digital literacy competencies. Lastly, identities - meaning learners should manage to identify the appropriate digital tool to utilize based on the information needed or general day-to-day activity. As a result, the present study queries grade 12 learners' digital literacy access.

2.4.2.4. Attributes of the model related to research questions

Beetham and Sharpe's (2010) model recognises that learners can learn at different rates and is dependent on access to digital tools. Likewise, the current study seeks to find out the accessibility of digital tools by grade 12 learners at Centocow High School. Beetham and Sharpe (2010) also stated that 'digitally literate variations over time and across contexts' and it may adjust accordingly with the modifications of technology developments. Thus, relating to the current study since it also pursues to discover the perceptions of digital literacy skills of grade 12 learners at Centocow High School at Harry Gwala District. By seeking to find out learners' perceptions of digital literacy skills, the study will determine if grade 12 learners at Centocow High School will be able to be competent enough with the use of technology-based gadgets and digital tools.

The adopted model stipulates that digital literacy involves practical use of digital tool. The current study questions the effect of gender on digital literacy skills of grade 12 learners at Centocow High School (read full details on Section 1.5). This study will examine if learners' gender affects the practical use of digital tools or not as well as grade 12 learners' characteristic effect on the digital skills of the students, scrutinizing if their characteristics disturb them from being practically engaged with digital tools.

Digital literacies should concentrate on the teachers' and students' logic of belonging, or the ways people use strategies to collaborate and interconnect within their communities (Robertson and Lange, 2017). The model explains that learners should manage to identify the appropriate digital tool to utilize based on the information needed or general day-to-day activity. Moreover, the study requests to know the challenges that grade 12 learners face in acquiring digital literacy competencies. The adopted model can be beneficial as a tool to chart out and lead planned factors tangled in the development of digital literacy across an institution (read the full details of the model in Section 2.4.1). Consequently, the current study seeks to map grade 12 learners' perceptions and attitudes concerning digital literacy at Centocow High School (read the full details in Section 1.5).

2.4.2.5. Reported weaknesses of Beetham and Sharpe's (2010) model

Beetham and Sharpe (2010), considered that progresses are essential to the entire field and associations considering applied philosophies. Hence, they offered the next explanations to institutes bearing in mind how great to support their learners to learn and successfully study in a digital age of which the model does not mainly focus on: Firstly, to encourage practical access, students require preparation for their practice of learning with technology. The introduction is a significant step that students need for flexible access to orientation activities and resources. All methodologies and theories have their weakness and limitations (Velte and Stawinoga, 2017).

Secondly, to ensure publicity of succeeding skills improvement, digital literacies should be identified in teaching and learning approaches, contextualised for the discipline, fixed in the program, and planned across all programmes. Thirdly, emerging essential abilities into actual individual practices need supportive students to make decent selections about how and where to study. Institutes could support this phase by reconfiguring campus spaces to improve web connectivity and supporting a variety of social learning accomplishments (Beetham and Sharpe, 2010).

According to the above-mentioned authors, creating environments that inspire learners with actual individual practices to innovatively appropriate their use of technology might include planning syllabuses that inspire investigative, experimental utilization of technology. Fifthly, students are clear that most of their technology use for learning is defined by the tutors and courses. For that reason, a powerful influence

of context means that teachers and their institutions need to take the lead in developing their learners.

2.4.2.6. How reported weaknesses of the Beetham and Sharpe's (2010) model will not affect the current study

Beetham and Sharpe (2010) explain digital literacy progress in exercise. They refer to digital literacy as an unceasing improvement procedure. It can be outlined over a continuum. People become extra capable over time and ultimately reach a level of proficient exercise dependent on separate inspiration and perspective. Regardless of some of the reported weaknesses of the model, it can be beneficial as an instrument to map out and lead the planned aspects tangled in the growth of digital literacy through an institution. Firstly, all models, theories and methodologies have their weaknesses and limitations (Tournier, 2020; Littleton and Rienties, 2020). Beetham and Sharpe (2010) approve that the model can be realistic across postgraduate education from beginner to professional to creating effective and efficient use of digital literacy in everyday activities and making digital literacy an intrinsic part of one's identity (Montebello, 2016). In addition, the adopted model is robust, proven to be resilient and adaptable in diverse learning environments (Littlejohn, Beetham and McGill, 2012).

Maphosa and Bhebhe (2019) adopted Beetham and Sharpe's 2010 digital literacy model in their study that evaluated digital literacy. The model successfully mapped digital literacy as a progress process from admission and efficient abilities to advanced level competencies and character. Parry, Luke, and Smith (2017) used Beetham and Sharpe's 2010 model while doing "the phoenix project, interactive learning". They clarify the focus on the student's learning needs and the educator's teaching activities. The systematic application of the core constructs of the model to underpin the current study's study questions and the design of the data collection instruments led by the model's variables is strategic and appropriate to maximise the benefits of the model.

Carpenter and Lertpratchya (2016) did a qualitative and quantitative study of social media communicators: An extension of role theory to digital media workers. As a result, they discovered that societies tackle imprecise times by inserting their self-assurance in the capability of digitally literate workforces. The authors explored how

communicators of social media navigate the role of stress factors of this industrialized administrative situation.

Leonard *et al. (*2016) used both quantitative and qualitative approaches to retrieve data and evidence when investigating that digital natives require basic digital literacy skills. Their study highlights how achieving essential digital literacy and information communication technology support, trains students to manage educational activities accomplishing skills that improve employability. The above-mentioned authors stated that digital natives' theory within a South African setting demonstrates that there is a necessity for support programmes that will teach students basic digital literacy skills.

2.5. SUMMARY OF THE CHAPTER

The main aim of this chapter was to review existing literature on digital literacy and associated themes to the purpose of the current study and its research questions. Beetham and Sharpe's (2010) model was acknowledged as the most convenient model to explain digital literacy in the current study. Previous studies and related theoretical models in the landscape of the digital literacy of various population groups were reviewed. However, it was noted that the most robust, resilient, and applicable to grade 12 learners in a rural environment or geographical location is Beetham and Sharpe's (2010) model. Equally, the adopted model seamlessly underpins the research questions of the study and helps shed new theoretical light on its application in a developing country context. After all, its adoption was aimed at creativity and innovation to achieve insightful results and add depth to the study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. INTRODUCTION

This chapter involves the process and overall strategy in which the research was undertaken. It lays out how the data was collected, specifies the study plan, research design, research methodology, the study area, data collection methods, the considered population and sample size determination.

3.2. RESEARCH PARADIGM

Research paradigms conduct systematic encounters through their principles and assumptions (Park, Konge and Artino, 2020). For example, positivism rest on the hypothetic-deductive technique to authorize hypotheses that are frequently stated quantitatively. Practical relations can be derived between explanatory and causal features (independent variables) and results (dependent variables). Nevertheless, positivist research does not continuously count on quantitative methods. According to the authors, a primary goal of the positivist review is to make descriptive relations or causal relationships that eventually lead to the expectation and regulation of the phenomena in question.

According to Su (2018), positivism is a major paradigm of academic inquiry, it presents an elementary world view cooperatively held by a community. The involvement of the research process characteristically contains a variety of data. Positivism relates to the importance of what is given in general, with a stricter focus to reflect uncontaminated data and facts without being influenced by clarification of human bias. Positivism follows logical realism, searching for agreed truths through justification by empirical confirmation (Pringle and Booysen, 2018). Positivism brings about foundationalism and experimentation, positivists place worth on independence and proving or disproving hypotheses (Ryan, 2018).

Hughes and Sharrock (2016) stated that positivist investigators work around an inflexible ontology that is certain on the fact that there is knowledge and reality that exists. They aim at uncovering, recognising, and studying a reality through natural laws by which it is governed. The researcher and research process is objective and value-free, participants are research subjects and objects of study.

According to Creswell and Poth (2016), post-positivism takes a systematic method to the investigation. It employs a theoretical lens of social science. Post-positivism does not believe in severe reason and moderately identifies that all effects and causes are a possibility that may or may not occur. However, according to the author, it has fundamentals of being empirical, logical, and deterministic based on a priori theories, researchers view the investigation as a series of logically connected phases. It believes in multiple viewpoints from participants rather than a single authenticity.

Meanwhile, interpretivism claims that knowledge and fact are subjective, socially, and historically positioned, based on people's practices and their understanding of them. Researchers can on no occasion be separated from their own beliefs and values, so these will certainly display how they gather, understand, and examine data (Ryan, 2018). Interpretivism propositions a possibly ground-breaking logical alternate that highpoints the source of entrepreneurship in people rather than in abstract markets, highlighting emergence rather than presuming opportunity existence (McChesney & Aldridge, 2019). The Interpretivism paradigm relies on the profound understanding of a notion and discovers the understanding of the world in general and develops independent denotations of people's experiences in the direction of certain objects or things (Rahi, 2017).

Accordingly, interpretivism familiarises a relative ontology in which its phenomenon may have numerous clarifications rather than a fact that a method of measurement can determine. Practically, with the interpretivism perspective, investigators tend to gain a more profound understanding of the phenomenon and its complication in its exceptional perspective instead of trying to generalise the base of understanding for the whole population. It is initially fixed in the fact that approaches used to understand knowledge associated with social and human sciences cannot be the same as its usage in physical sciences since people understand their world and then perform grounded on such understanding while the world does not.

The study sought to find both quantitative and qualitative information from participants since the study required respondents' perceptions and their level of digital literacy. Because the reason of explanation did not prevent the merging of quantitative and qualitative research design on the realists who declared that an untrue opposition occurs between quantitative and qualitative approaches and that researchers should

make the most effective usage of both paradigms to recognize educational and social phenomena (Onwuegbuzie, 2000).

The current study uses the interpretivism research paradigm because it believes in multiple realities constructed on a social basis. The aim of interpretivism investigation is not to find out the worldwide context and value-free knowledge but to recognize the individuals' clarifications about the societal phenomena. The classical / purist view states that the interpretivist paradigm should traditionally be linked to qualitative methods and should adopt a qualitative approach. The view is misleading (Owuegbuzie and Leech, 2005). Hence interpretivist approach does not mean that a researcher should only use one approach (Onwuegbuzie, 2000). Interpretivism is an epistemological point that prioritises participants' independent understandings and considerations of social phenomena and their activities (Ngcobo, 2020).

3.3. RESEARCH DESIGN

Research design defines the procedure of gathering and construing data with clear objectives, it is an overall strategy like how to respond to the research question set by an investigator (Rahi, 2017).

There are four types of research designs used in the social science field: experiments, case studies, surveys, and field studies. The experiment technique includes the adjustable analysis where the impression of one variable can be understood with other variables. Experiments are mostly used when investigators examine reason and consequence relationships among variables. The survey design is widespread in social sciences and related to the logical research approach.

A case study design is a printed description of a situation or problem. It offers small group problems or focuses on a particular issue; it has a preference when the investigator has slight control of events. Field studies, as an alternative to questioning participants, come to an extraordinary test site arrangement to be studied, the investigators observe participants in their natural environments (Graney, Giesy and Clark, 2020).

The study used a survey method to collect the required data from grade 12 learners at Centocow High School in Harry Gwala District. O'Leary (2014) emphasizes that researchers can obtain hundreds of individuals to complete the survey in a

comparatively short period. According to Vaske (2019), data composed from surveys can provide many variables and many respondents. This suggests that energy and time are essential in running preliminary analyses to identify any problems, cautiously entering the data into a database, examining the validity and reliability of the data and converting the data to generate guides of the fundamental perceptions.

A survey was adopted because it is less expensive and slow to survey than is the overall population, or it may be impossible to survey the entire population (Matiwane, 2017). Matiwane (2017) also adopted a survey design when investigating user insights of education students with exceptional reference to the excellence of service at Walter Sisulu University Library, Butterworth, South Africa. Budhu (2017) also adopted a survey design when researching academic information needs and information-seeking behaviour of Haythorne Secondary grade eight learners using the Msunduzi Woodlands Branch Public Library, Pietermaritzburg.

3.4. RESEARCH APPROACH

According to Creswell and Poth (2016), qualitative research is a positioned action that discovers the observer in the world. It contains a set of explanatory material practices that make the world noticeable. Qualitative studies turn the world into series of representations, counting field notes, conversations, interviews, memos, evaluations and photographs to the self. It studies things in their natural settings, trying to make sense or construe phenomena in terms of the senses people bring to them.

The main differences between traditionalists are at the level of the logic of explanation (Smith and Heshusius, 1986). Yet, the logic of justification does not command what definite data gathering and data analysis techniques should be consumed for. The classical/purist view states that the interpretivism paradigm should traditionally be linked to qualitative methods and should adopt a qualitative approach. The view is misleading (Onwuegbuzie & Leech, 2005). Accordingly, the situationist view is for a combination of some approaches for the data collection on the fact that features from dissimilar research can be combined in one research paradigm (Wildermuth, 1993).

In line with the arguments of Onwuegbuzie (2000), Onwuegbuzie and Leech (2005) and Wildermuth (1993), the adopted paradigmatic framework is integrated with qualitative and quantitative approaches. Considering that the fundamental issue is to address the study's critical questions and the situational / realists view is deemed

appropriate for methodological innovation to arrive at new results. Hence interpretivism approach does not mean that a researcher should only use one approach (Onwuegbuzie, 2000).

The current study used quantitative and qualitative approaches to address the research questions (Beck, 2014). The present study seeks to find quantitative and qualitative information from participants since the study will seek respondents' perceptions and their level of digital literacy. The logic of justification did not prevent the combining of quantitative and qualitative research design on the realists who declared that an untrue opposition occurs between quantitative and qualitative approaches. Researchers should make the most effective usage of both paradigms to recognize educational and social phenomena (Onwuegbuzie, 2000).

3.5. TARGET POPULATION

The population is a procedure of choosing a sample of components from a large group of residents to study their beliefs and attitudes (Rahi, 2017). The study's target population is grade 12 learners at Centocow High School, specifically because they are the ones who face challenges of not being able to utilize digital tools when they reach tertiary institutions. As a result, they end up failing to complete their assignments and projects due to a lack of skills or abilities to use digital tools. However, only learners above 18 years will be encompassed in the research.

The reason for the current study to specifically focus on grade 12 learners is because there is an expanding necessity for students to have digital abilities to well engage with their learning, and to contribute to a speedily shifting work environment after their graduation. For that reason, it has meant that there is an increasing examination of digital literacy of grade 12 learners. The importance has been positioned on implanting technology into the education core curriculum, thus enriching the curriculum and learning process. The population of grade 12 at Centocow High School is plus or minus 105 learners.

3.5.1. Sampling procedure

Probability sampling is also known as 'random sampling' this is a sampling that permits every single piece from the creation to have an equivalent coincidental of attendance in the sample. In the context of probabilistic sampling, all units of the target population

have a non-zero probability to take part in the study (Martinez-Mesa, Gonzalez-China, Duquia, Bonamigo and Bastos 2016). It involves, simple random sampling, stratified sampling, cluster sampling and systematic sampling. Creswell and Poth (2016) describe simple random sampling as a kind of probability sampling in which the components constituting a population are allocated numbers. Stratified sampling is a method of sampling that includes the separation of a population into smaller groups known as strata. In stratified random sampling, the strata are formed based on members' common characteristics (Sharma, 2017).

Cluster sampling involves a collection of features residing in one geographical region called a cluster. The cluster sampling technique is used when the features of a population are spread over a wide geographical area, then the population is separated into sub-groups named clusters on the foundation of their geographical allocation. The systematic sampling technique is operationally more suitable than simple random sampling. It also guarantees that for each component to have the same probability of presence in the sample. In this method of sampling, the primary component is chosen with the assistance of haphazard figures and the outstanding component is nominated automatically according to a prearranged design (Enahoro and Aniesedo, 2020).

Non-probability sampling is a sampling procedure that determines a foundation for any estimation of the probability that fundamentals in the universe will have a chance to be involved in the study sample (Etikan and Bala 2017). Non-probability sampling entails quota sampling, accidental sampling, purposive sampling, and snowball sampling. Quota sampling is when the sample selection is at the convenient door of the examiner, any person or individual inaccurately seen with the same features will be asked to partake in the research. It will flow in the same routine until the preferred number is achieved (Etikan and Bala, 2017).

Accidental or convenience sampling selects the cases at hand until the desired number of people/items is reached (Wilson, 2016). Purposive sampling is selected based on the researcher's knowledge of the population and the objectives of the research. Snowball sampling is functional when samples with the target features are not easily reachable. This research describes snowball sampling as a purposeful method of data collection in qualitative research (Naderifar, Goli and Ghaljaie, 2017).

Non-probability and probability sampling will be used in the present study. The sample sizes and sampling techniques will be separated according to qualitative and quantitative aspects. The study uses purposive sampling to collect qualitative data since it is a strategy in which sets of people or events are selected deliberately to provide important information that cannot be obtained from other choices. Random sampling is used to collect quantitative data because it is most widely used, and it is effective in social sciences or descriptive research.

In conducting this study, a non-probability sampling technique is employed, specifically, purposive sampling to collect qualitative data in the current study from grade 12 learners at Centocow High School at Harry Gwala District, since it is a strategy in which sets for people or events are selected deliberately to provide important information that cannot be obtained from other choices. Moreover, random sampling will be used to collect quantitative data, because it is most widely used, and it is effective in social sciences or descriptive research.

3.5.2. Sample size

Ten learners are interviewed purposively to participate in the study for qualitative data, the top achievers of all grades 12 classes. Because numerous methodologists approve 10-15 as an adequate sample size for qualitative interviews (Patten, 2016). 82 learners are randomly selected to participate in the study for quantitative data, using the lottery method. The justification for the choice of 82 participants is based on published sample size determination tables by Krejie and Morgan (1970). The table below determines sample size selection for a given population:

Table 3.1: Table for determining sample sizes by Krejie and Morgan (1970).

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

3.6. DATA COLLECTION INSTRUMENTS

An interview is a verbal conversation between two people with a determination of gathering information for the research (Neuman, 2014). There are various instruments of collecting data, a semi-structured interview is a form of a survey that combines open questions that prompt discussions, with the opportunity for the interviewer to additional discover answers (Mann, 2016). Semi-structured interviews are a vocal interchange where one individual “the interviewer” tries to acquire information from another person by probing questions, it reveals in a relaxed custom setting, participants have the chance to discover concerns they feel are important. (Mann, 2016).

Whereas, according to Levis *et al.* (2018), structured interview follows the prearranged as well as a consistent list of questions and are costly and more time-consuming than checklists and rating scales. Their screening performance is also usually no better and

often much worse than inexpensive paper and pencil valuation procedures. According to the above-mentioned author, structured interviews are approximately comparable to checklist and ranking measures in terms of trustworthiness and information yield. However, they lack the psychometric development and normative standardization of many rating scales and are probably not the best choice if the goal is descriptive only.

Investigation on the dependability and rationality of structured interviews for youngsters will indisputably endure for many years. It appears improbable that many new interview agendas will be established, but slightly that research will concentrate on the handful of interviews previously obtainable (Kallio, 2016). Research using structured interviews will also have to face many unresolved glitches and subjects (Shapka, 2016). This study uses semi-structured interviews to get answers from grade 12 learners at Centocow High School. However, due to the pandemic (COVID-19), telephone interviews will be done to avoid a face-to-face interaction between the researcher and the participant from whom information is to be collected.

A questionnaire is a set of organized questions in a particular format designed to specifically get answers from individuals or the participants (Flick, 2015). The study uses questionnaires to collect quantitative data because their main objective is to obtain relevant information that is reliable and valid. It is a way of gathering information used often in research that draws on quantitative and qualitative data sources and analysis (Bartram, 2019). Questionnaires are written in many different methods, to be used in many different circumstances and with many different data-collection means (Brace, 2018). A semi-structured questionnaire is a combination of unstructured and structured questions, approximately of the questions and their order are resolute in improvement, although others progress as the interview proceeds.

This study uses questionnaires and semi-structured interviews to get answers from grade 12 learners at Centocow High School.

3.7. DATA COLLECTION TECHNIQUE

Questionnaires were distributed to 82 grade 12 learners at Centocow High School. To elude face to face interviews to decrease the spread of COVID-19, interviews were audio recorded, and information was kept safe for future references. A request for consent to audio-record interviews was written and e-mailed to the school and

approval was received. The investigator used sanitiser on her hands before and after laser printing and packing the questionnaires in the boxes. Boxes of questionnaires were sent by the researcher to Centocow High School at Harry Gwala District in KwaZulu-Natal, South Africa. Class teachers assisted the researcher to allocate questionnaires to learners.

Hand sanitiser was provided to learners by the researcher and sprayed before embarking on the process of gathering and completing the questionnaires. The audio recording was also done on the same day, and as a result, all data were collected on the same day due to time constraints and COVID-19 restrictions.

3.8. DATA ANALYSIS

The study used narrative analysis on qualitative data, it is the analysis of visual, written, or audio data. It covers diversity from authentication to consideration. Narrative analysis is a method that treats stories not only as representations of events but as narrative events in them.

Descriptive analysis was used to analyse quantitative data and includes grounded theory, narrative analysis, and phenomenology. The grounded theory incorporates numerous methods, including objectivist and constructivist ethnicities, and frequently requests researchers to theorize a procedure and perhaps recognise its contexts and consequences.

3.9. VALIDITY AND RELIABILITY

Cronbach's alpha is used to measure the reliability of the questionnaire in the study. The reliability index range is between zero ($\alpha=0$) to one ($\alpha=1$), a high alpha value means higher reliability (Reddy, Sharma and Chaudhary, 2020). Meanwhile, the validity of the present study is ensured by doing a pre-test on grade 12 learners. The procedure will involve grade-level learners that utilize Bulwer public library within Dr Nkosazana Dlamini Zuma Municipality, to check if the instruments or questions to be asked are suitable for the actual population. Research questions are concise to avoid ambiguity and respondents' confidentiality will be assured.

The questionnaire design supports asking simple, clear, and relevant questions that are appropriate for grade 12 learners. Also, on interviews, questions will be suitable for respondents' level of study and will not seek to reveal the respondent's identity in

any manner. For the qualitative method (interviews), reliability is measured by the consistency of data that will be achieved when the steps of the research are verified through the examination of data. The validity of the qualitative method can be affected by the researcher's perception of the findings; however, accurate analysis of data ensured trustworthiness criteria to achieve the reliability of the interview schedule and results (Benard, 2017).

3.10. ETHICAL CONSIDERATIONS

Regarding ethics, the present study protects participants' anonymity and ensures not to reveal their identity in any manner. Gatekeeper's approval was sought and adhered to the ethical protocol at UKZN. The current study ensured the non-violation of any rights of the participants. The age group of the grade 12 learners at Centocow High School is between 18 and 21 and does not need parental consent as per South Africa law.

3.11. SUMMARY OF THE CHAPTER

This chapter presented a path through which the research was conducted. It therefore, talk over the research approaches that were used during the process of research. Interpretivism research paradigm was adopted and survey research design. The study used qualitative and quantitative research approaches, it mainly targeted grade 12 learners at Centocow High School in Harry Gwala District. Non-probability sampling was adopted, and purposive and simple random sampling was used to collect data. Questionnaires and interviews were used as data collection instruments, 10 learners were interviewed, and 82 learners were given questionnaires.

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1. INTRODUCTION

This chapter entails the analysis of the data that was collected and the findings. It represents how various participants of the study answered the research questions. The study's main purpose was to explore the perceptions and attitudes of grade 12 learners at Centocow High School at Harry Gwala District to use digital literacy and tools. It desired to explore the perceptions of grade 12 learners at Centocow High School to digital literacy skills. It also examined the effect of gender on digital literacy skills. The study investigated the effect of grade 12 learners' characteristics on their digital literacy skills and identified the challenges of grade 12 learners in acquiring digital literacy competencies.

A questionnaire was distributed amongst grade 12 learners at Centocow high school and interviews were conducted. The responses varied according to respondents' personal views. Quantitative data were analysed on SPSS, whereas qualitative data were analyzed using descriptive analysis. The quantitative data were presented accordingly using tables and graphs as per questions asked, whereas qualitative data was presented in narrative form. The purpose of this chapter is to accurately present research outcomes in a logical order using both illustrations (tables, charts and graphs) and text (Gissane and Runswick, 2017).

The chapter entails, response rates, questionnaires and interviews results and a summary. It offers and examines data collected from the respondents. This research utilized quantitative and qualitative methods to gather and analyse data. The researcher used figures, tables, and explanations to analyse and organise data into simpler accounts. Perron, Victor, Hodge, Salas-Wright, Vaughn and Taylor (2017) stated that the purpose of data analysis and presentation of findings in research is to summarise the information collected to formulate an answer to the research questions. Results are presented using tables, graphs, and textual analysis. The presentation of the findings is not divided into two segments or studies along the lines of quantitative and qualitative methods used but are integrated. The advantage of this approach is that the reader can easily follow the analysis methodically while adding breadth and texture to the research in line with Creswell's (2009) and Okafor, Chiu and Feinn's (2020) recommendations.

4.2. RESPONSE RATE

Response rate “means the amount of the nominated sample that completed the questionnaires (Copeland, Yoon and Zhang, 2020). High standards of ethics of COVID-19 were followed to keep both the researcher and respondents safe. Social distance was observed, masks were worn, and hands were sanitised. The recorded response rate was 100% because an arrangement for the data collection process was made prior and learners were willing to participate. 10 learners were interviewed purposively to participate in the study for qualitative data and 82 learners were randomly selected to participate in the study for quantitative data.

All 82 participants were given questionnaires fortunately answered and returned them. All 10 participants were successfully interviewed. Nevertheless, Ramshaw contends that a 40% response rate is satisfactory for examining and disseminating the results that are thoughtful and comprehensive of the inhabitants. Babbie and Mouton (2001) propose that a return rate of 50% in questionnaires is acceptable when analysing data and reporting. Overall, the response rates meet the needs of the study.

4.3. DEMOGRAPHIC PROFILE OF RESPONDENTS

Demographic information is the features of a population. Features include age, education, race, gender, profession, and occupation (Shtompel, 2020). In the current study, respondents’ demographic information involved gender, age group and education (the major subjects participants do at school).

4.3.1. Gender of respondents

Both males and females participated in the study; however, the results showed that there were more female participants than males.

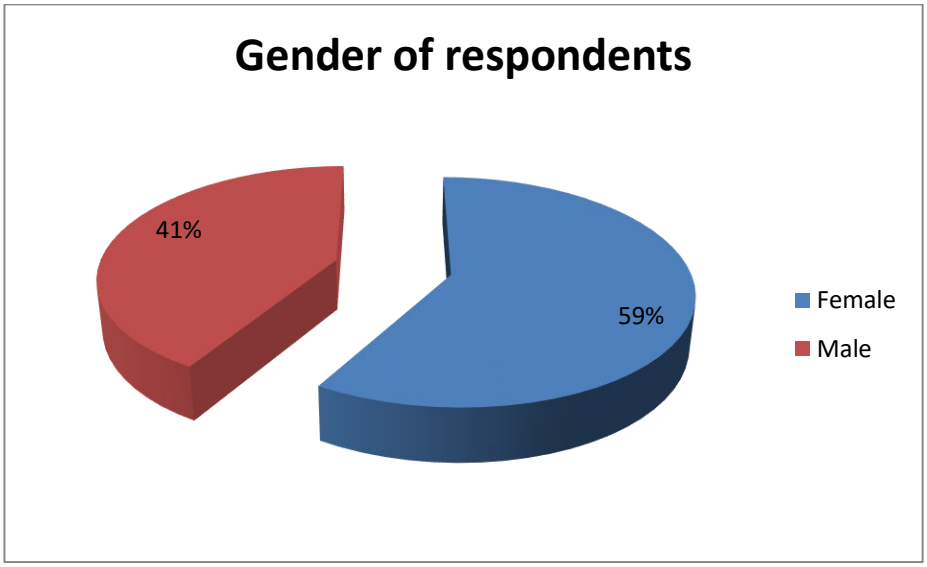

Figure 4.1: Gender of respondents

As shown in above Figure 4.1, the sample encompassed more female students (48/59%) than male, (34/41%) respondents, of which makes a total of 100%. Within the qualitative data, seven (70%) were females, whereas three (30%) were males.

4.3.2. Age group of respondents

Each respondent out of 82, was required to indicate his/her age group, findings are reflected in Figure 4.2 below. There was also qualitative data collected through interviews of which the findings are reflected in the narrative description below.

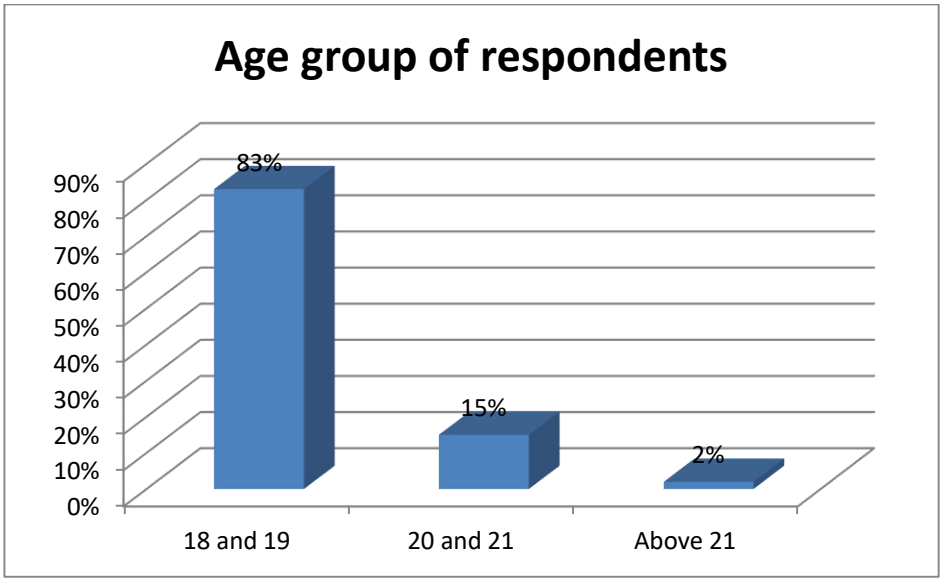

Figure 4.2: Age group of respondents

The results shown in Figure 4.2 above indicate that most of the respondents' age range was 18 and 19 (62/83%), whereas 12 (15%) of respondents indicated that their

age is 20 and 21. The least represented age was the age range above 21 with only two (2%). The results of the age group within the qualitative data indicated that out of 10 interviews undertaken, eight (80%) was between the age of 18 and 19. Whereas, two (20%) was between the age of 20 to 21.

4.3.3. Subjects done by respondents

Respondents were asked to indicate the subjects they do at school. Their responses are provided in Figure 4.3 below.

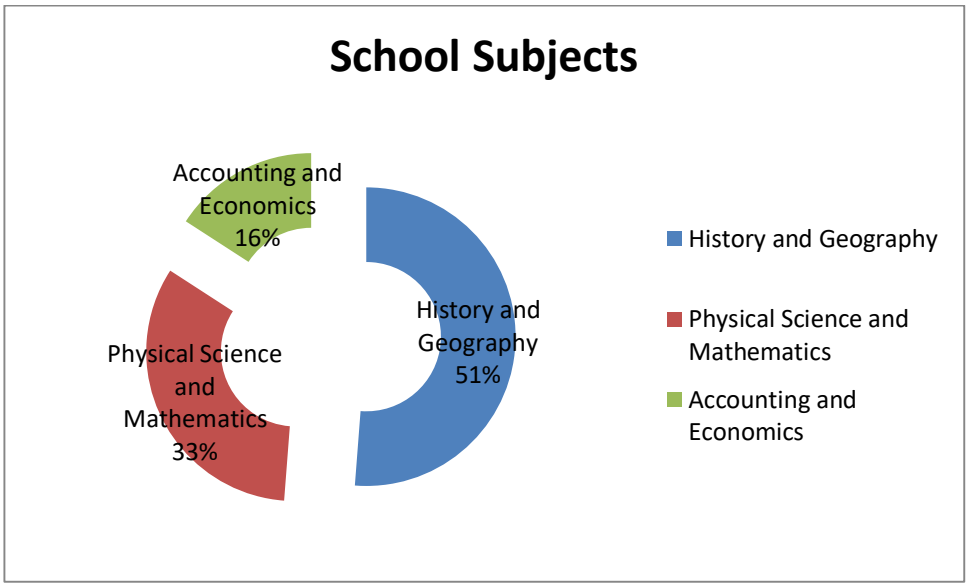

Figure 4.3: School subjects

The results showed that 42 (51%) of respondents are doing history and geography as their major school subjects. The following uppermost number was 27 (33%) of respondents doing physical science and mathematics. The slightest major school subjects were accounting and economics, with 13 (16%) respondents. The full details are found in Figure 4.3 above.

4.4. BACKGROUND INFORMATION

Respondents had to answer questions that intended to find out their contextual knowledge with regards to digital literacy. Background information specifies the core of the problem being investigated and its scope (Mekons, 2018). Leaners were asked about their understanding of digital literacy and digital tools. They were asked about the access to digital tools and availability of internet access to support their usage of digital tools.

4.4.1. Respondent's digital tool ownership

This question was asked to discover if grade 12 learners at Centocow High School possess any digital tools, be it a smartphone, computer, or laptop. The results are presented in Figure 4.4 below.

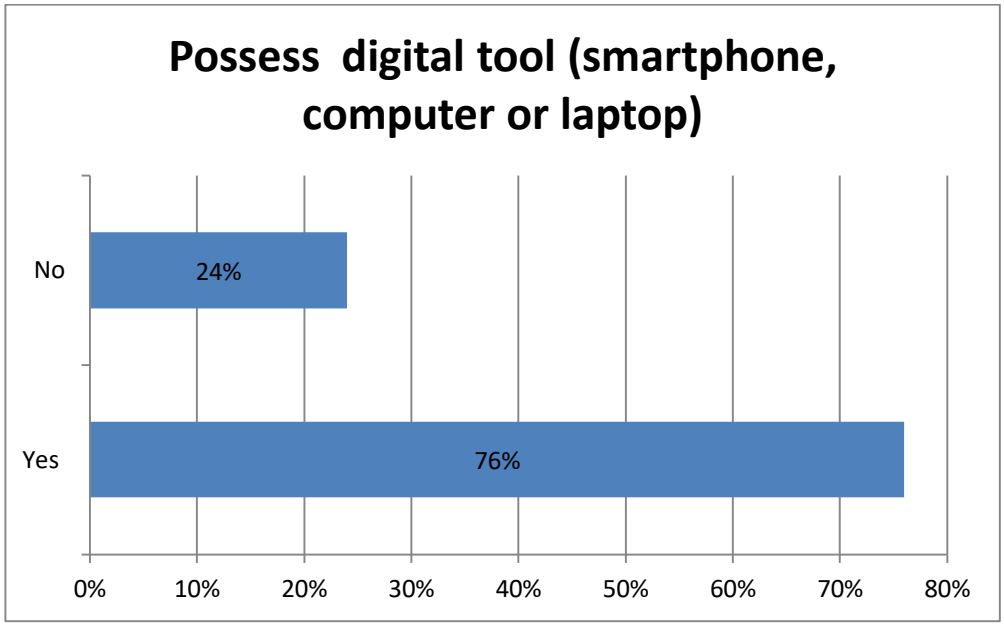

Figure 4.4: Digital tools possessed by Grade 12 learners at Centocow high school

The results revealed that 60 (73%) of grade 12 learners at Centocow High School possess digital tools. While 20 (24%) indicated that they do not have any digital tools.

4.5. RESULTS

This section determined the more detailed information concerning literacy of grade 12 learners at Centocow High School in rural Harry Gwala District, Kwa-Zulu Natal, South Africa. The study's validity and reliability were ensured by doing a pre-test on grade 12 learners who did not participate in the study. Both questionnaires and interview guides were pre-tested on grade 10 and 11 learners from Centocow High School at Dr Nkosazana Dlamini Zuma Municipality, Harry Gwala District in South Africa. The study used narrative analysis on qualitative data and descriptive analysis was used to analyse quantitative data. For the full details, see chapter 3, section 3.9 (Data analysis methods).

Results of the quantitative strands were presented first, followed by that of the qualitative strands. Results were integrated for both quantitative and qualitative to not split the study into two, since it is a single study (Okafor, Chiu and Feinn, 2020).

Consequently, where relevant, quantitative findings are followed by qualitative results regarding the same questions for ease of reading as well to outline where both results complement one another or conflict to showcase in-depth analysis.

4.5.1. What are the perceptions of digital literacy skills of grade 12 learners at Centocow High School at Harry Gwala District?

The perceived usefulness of digital tools to grade 12 learners' studies was investigated. Results are displayed in Figure 4.5 below.

4.5.1.1. Usefulness of digital tools to grade 12 learner's studies

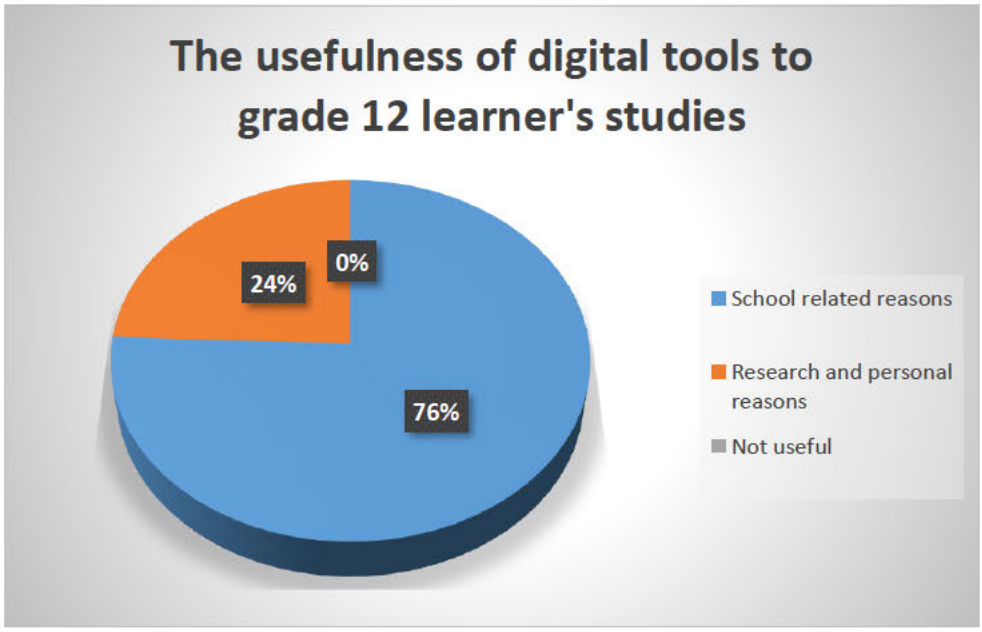

Figure 4.5: Usefulness of digital tools to grade 12 learner's studies

The results indicated that 62 (76%) respondents revealed that they perceive digital tools as useful to them for school-related reasons. 20 (24%) of respondents indicated that they perceive digital tools as useful for research and personal reasons. None of the respondents indicated that digital tools are not useful to them.

4.5.1.2. Do you think having a tablet or Wi-Fi will assist your digital literacy?

The interview asked if learners think that having tablets or Wi-Fi at school will assist their literacy.

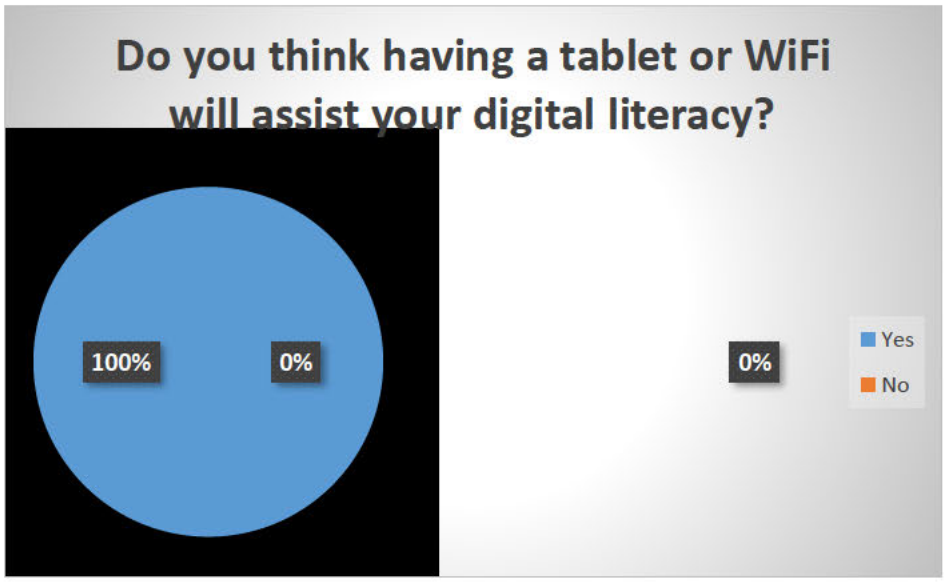

Figure 4.6: Having a tablet or Wi-Fi in assisting learner's digital literacy

The results indicated that all 10 respondents (100%) indicated that yes, they think that if they can have electronic gadgets or Wi-Fi at school, they will be able to uplift their digital literacy.

4.5.1.3. How can you be motivated to use digital tools (such as PowerPoint, Microsoft Word, and email)?

The interview revealed that all respondents (100%) indicated that they can be motivated to use digital tools by the availability of digital tools at their school as well as information on how to use them because they are less knowledgeable on how to use them since they do not have a computer lab or library at school. Some of the significant statements from the interviews are given below:

First respondent: *"Having to write school assignments".*

Second respondent: *"Lack of knowledge and information in books".*

Third respondent: *"Want to get more knowledge".*

Fourth respondent: *"School assignments and having to download music".*

Fifth respondent: *"To learn something, do schoolwork and find more knowledge".*

Sixth respondent: *"If I can have the teacher to guide me".*

Seventh respondent: *"If I can get assistance from teachers".*

Eighth respondent: *"I can be motivated if there is Wi-Fi at school".*

Ninth respondent: *"Availability of digital tools at schools like tablets and computers".*

Tenth respondent: *"If we can get knowledge of using tools".*

4.5.1.4. What are some of the things that can calm your fears, worries and anxiety about a lack of digital tools in your locality?

The interview results revealed that all 10 respondents (100%) revealed that their fears, worries, and anxiety related to digital literacy can be assisted by receiving training on the utilization of digital tools. Respondents stated that they need lessons that will guide them on how to use digital tools since some of them have never used certain gadgets before, i.e., computers or laptops. Some of the relevant raw statements from the interviews are below:

First respondent: *"Maybe if we can be taught how to use them".*

Second respondent: *"If there can be someone more knowledgeable than me, to guide and teach me".*

Third respondent: *"If teachers can help us on using digital tools".*

Fourth respondent: *"If I can be taught how to use them".*

Fifth respondent: *"Maybe if we can have Wi-Fi at school".*

Sixth respondent: *"If I was given a tablet or airtime and somebody to assist me".*

Seventh respondent: *"If we can receive computer training".*

Eighth respondent: *"Maybe if teachers can teach using computers at school".*

Ninth respondent: *"If we can have access to Wi-Fi at school, we can use digital tools more than we do because we lack money to buy data bundles".*

Tenth respondent: *"If there is someone to help me".*

4.5.2. How do grade 12 learners at Centocow High School at Harry Gwala District get access to digital tools?

Grade 12 learners at Centocow high school were asked how they access digital tools. See the questionnaire in Appendix 1 for full details of the question asked. The results are presented in Table 4.2 below.

Table 4.1: Respondent's access to digital tools (N= 82)

Access to digital tools	Number of learners	Percentage
Home	40	49%
Library	23	28%
Internet Café	17	21%
Other	02	2%
Total	**82**	**100%**

The above table shows that most of the respondents (40/49%) access digital tools at home. The next topmost number was that of learners who access digital tools at the library (23/28%). Followed by 17 (21%) respondents who indicated that they access digital tools at internet cafes. Two (2%) indicated that they access digital tools in other (not listed on the questionnaire).

4.5.2.1. When was your first experience with a digital tool (email, Google, YouTube videos, online gaming, Tik Tok, and Instagram)? What tool was it? Where was this experience? How easy to use did you find the tool? Can you share some of the experiences?

In the qualitative interviews, six (60%) of learners indicated that they specifically access digital tools at home (smartphone). However, four (40%) indicated that they only access digital tools at libraries or internet cafes because they do not have them at home. Six respondents (60%) revealed that it was not hard for them to use digital tools (smartphones) at home because there was also assistance from family members, and they were using them for researching school assignments or topics. However, the other four (40%) of respondents specified that they found it hard to use digital tools in libraries and internet cafes since they were expected to search for information on computers in response to their assignments.

The first respondent: *"In 2018, I was using TikTok at home. It was easy for me to use it and I can explain to another person how to use it".*

Second respondent: *"I started last year in 2020, I needed something from Google. I used my cell phone at home, I got the*

information I was looking for and can share that with another person".

Third respondent: *"I started in 2019; I was doing tasks at home. I found it hard for me to use the tool. I wrote my search query and found a lot of information that was not relevant to what I needed".*

Fourth respondent: *"I was using YouTube, downloading movies. This experience was at home, and it was easy for me to use it".*

Fifth respondent: *"My first experience was in 2014, it was hard for me, I was researching schoolwork at the library as usual."*

Sixth respondent: *"My first experience was when I went to the library because I was given a project, I found the staff helpful because they explained everything to me".*

Seventh respondent: *"It was at home I was trying to search for an assignment that I was given at school, it was hard for me because I didn't know how to use it but luckily there was someone to help me".*

Eighth respondent: *"My first experience was when I was doing a school project at the library, it was hard, but they helped me. I can now do it alone and explain to others".*

Ninth respondent: *"It was when I was downloading music on YouTube at home; it was not hard for me because they were helping me".*

Tenth respondent: *"My first experience was when I was searching for pictures on Google at the library for my project; it was hard for me because I was getting pictures that are not relevant to what I want".*

4.5.3. How does gender affect the digital skills of grade 12 learners?

The effect of gender on digital skills of grade 12 learners at Centocow High School was asked, the results are given in Figure 4.7 below.

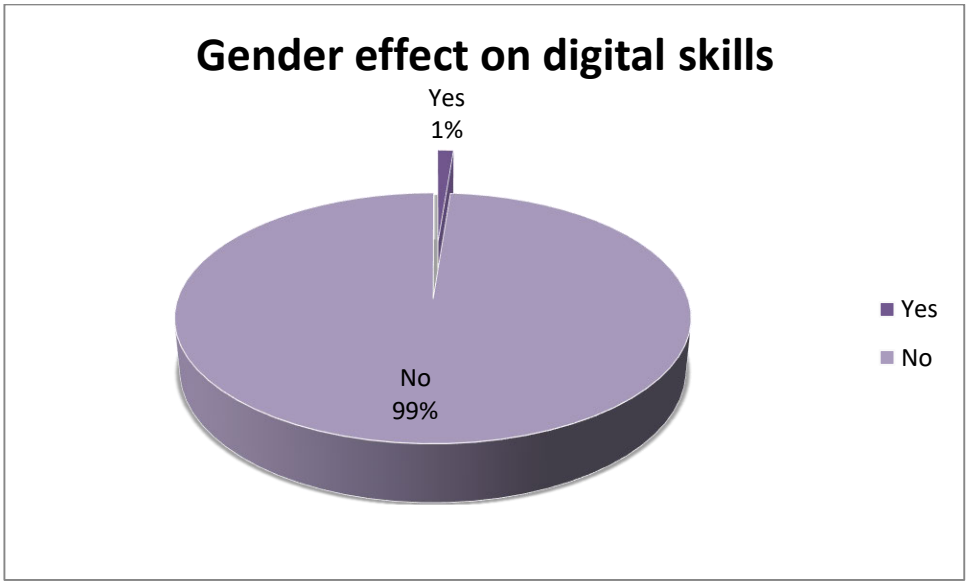

Figure 4.7: Gender effect on digital skills

The results disclosed that 81 (99%) of grade 12 learners at Centocow High School said that gender does not affect their digital skills. However, one (1%) of respondents revealed that gender affects her digital skills. She further explained that her parent is not working, therefore, cannot afford to buy digital tools for her, and if she was a male, she would have looked for a job and bought herself a digital tool.

4.5.4. How do grade 12 learners' characteristics affect the digital skills of the students?

Grade 12 learners' characteristics (where they stay or live, their family's financial state and how learners feel) were questioned if it affects their digital skills. The results are exhibited in Table 4.2 below.

Table 4.2: Learner's characteristics' effect on their digital skills (N=82)

Learner's characteristics' effect on their digital skills	**Number of learners**	**Percentage**
Geographical location (where learners live)	49	60%
Family's economic status	29	35%
No effect	03	4%
How leaners feel	01	1%
Total	**82**	**100%**

The above table shows that the majority, 49 (60%) of respondents' digital skills is affected by their geographical location (where they live), respondents further disclosed that they live very far from internet cafes and libraries. 29 (35%) respondents' digital skills are affected by their family's economic status. Whereas three (4%) revealed that their characteristics do not affect their digital skills. The least one (1%) expressed that their digital skills are affected by how they feel.

4.5.5. What challenges do you face as a learner in your location as you use digital tools? Do you get any support for using digital tools from teachers or school librarians?

In the qualitative interviews, five (50%) of participants indicated that they are unable to use digital tools and type. Whereas three (30%) participants revealed that they lack assistance at school on the utilization of digital tools. One (10%) indicated that they do not have money to buy data bundles since they do not have digital tools and WiFi access at school. Another one (10%) revealed that they face the challenge of acquiring wrong information whenever they search on digital tools in response to their information needs. Some samples of what the interviewees said are below:

The first respondent: *"I can't type, I can use Google on the cell phone, but I cannot use computers and laptops".*

Second respondent: *"I face the challenge of not being able to use digital tools".*

Third respondent: *"I don't have challenges because if I have money to buy data bundles, I can successfully use a cell phone".*

Fourth respondent: *"Not being able to type and use digital tools".*

Fifth respondent: *"We don't get help from teachers with digital tools; we get it in libraries if you visit".*

Sixth respondent: *"I don't have much information about digital tools, and I don't get support from anyone".*

Seventh respondent: *"Challenge of not knowing how to use digital tools and no support at school".*

Eighth respondent: *"I face a challenge of getting wrong information from digital tools and being unable to access them at school".*

Ninth respondent: *"We don't how to use digital tools and we don't have support at school since we are not taught computer skills".*

Tenth respondent: *"I can't type assignments on the computer; I need help at the library if I visit because I can't do it on my own".*

4.5.6. What are the challenges of grade 12 learners in acquiring digital literacy competencies?

Grade 12 learners at Centocow high school were questioned about challenges they face when using digital tools or acquiring digital literacy competencies. Their responses varied and are presented in Table 4.3 below.

Table 4.3: Challenges faced by grade 12 learners at Centocow high school at Harry Gwala District, KwaZulu-Natal, South Africa when they use digital tools (N=82)

Challenges faced by grade 12 learners	**Number of learners**	**Percentage**
Lack of resources	30	37%
Retrieving wrong information	29	35%
Poor network and electricity uncertainty	11	13%
Lack of training on digital tools	09	11%
Fear and anxiety	03	4%
Total	**82**	**100%**

The above table shows that 30 (37%) of respondents face a challenge of lack of resources. 29 (35%) presented that they retrieve wrong information when they use digital tools. 11 (13%) revealed that they experience poor network connection and unreliable electricity due to load shedding. Nine (11%) exposed that the challenge they have is lack of training on utilization of digital tools. The smallest amount, three (4%) of respondents exhibited that they feel fear and anxiety when they must utilize digital tools.

4.6. ADDITIONAL INTERVIEW ANALYSIS

Some of the additional responses from the interviews that are relevant but not presented earlier are found here.

4.6.1. Do you use social networks e.g., Facebook, WhatsApp, Twitter, Instagram, etc.)? Do you find them easy or hard to use them?

All 10 (100%) respondents revealed that they do use social networks but, nine (90%) indicated that they first found it easy to use them. Whereas one (10%) stated that they found it hard for them to use digital tools and social networks because they hardly use them.

The first respondent:	*"Yes, and I find it easy for me to use them".*
Second respondent:	*"Yes, I use WhatsApp and it is easy for me because I get everything I want".*
Third respondent:	*"Yes, it is easy to use them".*
Fourth respondent:	*"Yes, it is easy to use because I get all information, I need from it".*
Fifth respondent:	*"Yes, it is easy now easy now, but it was hard at first".*
Sixth respondent:	*"Yes, I find it easy if I understand how to use it".*
Seventh respondent:	*"Yes, I use them and find it easy for me to use".*
Eighth respondent:	*"Yes, it is easy for me to use them".*
Ninth respondent:	*"Yes, it is hard for me because I don't use them often, so I lack knowledge whenever I get a chance of using them".*
Tenth respondent:	*"Yes, I find it easy".*

4.6.2. Are you afraid or feel any fear when you must use digital tools?

Seven (70%) of respondents indicated that they are afraid of using digital tools because they do not have enough knowledge on how to use them and feel that the information retrieved will determine their marks if they are using them for school-related purposes. However, another three (30%) of respondents revealed that they do not feel any fear when they must use digital tools because they know how to use them.

The first respondent:	*"Yes, I am afraid of using a computer, I don't know how to use it".*
Second respondent:	*"Yes, because I have never used it before, I don't have much knowledge about it".*
Third respondent:	*"No".*
Fourth respondent:	*"No, because I can use digital tools".*
Fifth respondent:	*"No".*
Sixth respondent:	*"Yes, I do because my result depends on it, and I need to pass a year to pass school and further my studies and get a decent job".*
Seventh respondent:	*"Yes, I am not familiar with using digital tools".*
Eighth respondent:	*"Yes, I am scared of using digital tools because I don't know how to use them".*
Ninth respondent:	*"Yes, because I lack knowledge".*
Tenth respondent:	*"Yes, I hardly use them, so I forget how to do some other things on my own".*

4.7. SUMMARY OF THE CHAPTER

The chapter presented the research findings. In summation, the study found that the majority of grade 12 learners at Centocow High School at the rural Harry Gwala District in KwaZulu-Natal, South Africa possess digital tools (smartphones). The results showed that those digital tools are perceived as useful to them since they utilize them for school-related reasons, research, and personal reasons. However, the study found that most of the respondents, among others, face the challenge of retrieving wrong information when they use digital tools to seek information. It was also exposed that most learners lack training on the utilization of digital tools; as a result, some feel fear and anxiety. One respondent revealed that "*I am afraid of using a computer; I don't*

know how to use it". Therefore, indicating that learners do not have digital literacy competencies.

CHAPTER FIVE: DISCUSSION AND INTERPRETATION OF FINDINGS

5.1. INTRODUCTION

This chapter deliberates the study's outcomes in response to the research problem, questions, objectives, and the literature reviewed. The research aimed to explore the perceptions and attitudes of grade 12 learners at Centocow High School in a rural area at Harry Gwala District to use digital literacy and tools. Hence, usefulness, environmental effects, and challenges learners face to utilizing digital tools were identified.

The critical questions of the research were:

- What are the perceptions of digital literacy skills of grade 12 learners at Centocow High School at Harry Gwala District?
- How do grade 12 learners at Centocow High School at Harry Gwala District get access to digital tools?
- How does gender affect the digital literacy skills of grade 12 learners?
- How do grade 12 learners' characteristics affect the digital skills of the students?
- What are the challenges of grade 12 learners in acquiring digital literacy competencies?

This chapter presents the interpretation and a description of the significance of the findings and explains new insights based on the problem investigated in response to the outcomes presented in the prior chapter.

5.2. SUMMARY OF THE FINDINGS

The presentation below is framed based on the research questions. In other words, each research question is outlined, and corresponding core results are summarized.

5.2.1. What are the perceptions of digital literacy skills of grade 12 learners at Centocow High School at Harry Gwala District?

Results revealed that most grade 12 learners a Centocow High School have limited digital literacy skills though, perceive digital tools as useful for school-related reasons, research and personal reasons. The findings further discovered that all grade 12 learners at Centocow High School perceive that the availability of digital tools and Wi-

Fi access at the school can improve their digital literacy skills because they lack digital tools. Learners perceive that they lack digital skills because they do not have digital tools and do not get any information or training on digital tools. Reason is, that it was perceived that training on how to use them can assist in calming the anxiety that learners face due to lack of knowledge and skills whenever they must utilize digital tools.

5.2.2. How do grade 12 learners at Centocow High School at Harry Gwala District get access to digital tools?

The findings exposed that the majority of grade 12 learners at Centocow High School access digital tools at home, at libraries and in internet cafes. The outcomes showed that most accessed digital tools by grade 12 learners as Centocow High School are “cell phones” since they access them at home. However, it was identified from the data that learners hardly access computers because they do not have a computer lab or library at school, and they are far from public libraries. Whenever learners need to access digital tools other than cell phones, they are expected to travel to the town to access libraries and internet cafes. However, some learners cannot afford to pay for transportation to libraries and internet cafes, so they are delayed with digital literacy.

5.2.3. How does gender affect the digital literacy skills of grade 12 learners?

It was found that gender does not affect digital literacy of grade 12 learners at Centocow High School since the results showed that learners’ gender had nothing to do with their digital literacy. Learners revealed that they all have inadequate access to digital tools and do not get any training at school regardless of their gender.

5.2.4. How do grade 12 learners’ characteristics affect the digital skills of the students?

From the data, it was identified that learners’ characteristics do influence their digital literacy because the majority of grade 12 learners at Centocow High School revealed that they are geographically located far away from centres that provide access to digital tools (libraries and internet cafes). It was also identified that grade 12 learners at Centocow High School have to use their own money to travel to town: therefore. some learners “family economic status” does not allow that. Hence, they experience delays in digital literacy.

5.2.5. What are the challenges of grade 12 learners in acquiring digital literacy competencies?

It was found that learners lack money and transportation to the libraries and internet cafes. Learners do not have access to digital tools at the school (Centocow High School). Therefore, many learners end up not being familiar with the utilization of digital tools. The findings exposed that learners come across challenges of inability to use digital tools (they even lack the basic digital literacy skills). The results also revealed that learners have a challenge of not receiving any digital literacy support from the teachers at school. As a result of lack of a knowledge and skills, grade 12 learners at Centocow High School end up retrieving wrong information when trying to utilize digital tools in response to their information needs.

5.3. DISCUSSION OF THE FINDINGS

The outcomes or discoveries of the study are discussed below;

5.3.1. Demographic profile of respondents

This section discusses the respondents' points of view regarding their concerns with their demographic features, specifically, gender, age, and education (major subjects they do at school).

5.3.1.1. Gender, age group and school subjects done by respondents

Most of the respondents were female, and the minority was male. The uppermost number of respondents was individuals between the age of 18 and 19, followed by those between 20 and 21. Nevertheless, there were a minimal number of respondents who indicated to be above the age of 21. The outcomes exposed that the highest number of grade 12 learners at Centocow High School was doing history and geography as their major subjects at school, followed by those that were doing physical science and mathematics. It was found that the smallest number of grade 12 learners at Centocow High School indicated that they were doing accounting and economics.

The study found out that learners have various information needs that require a internet connection for them to complete their school assignments and gain practical know-how on digital tools. Konca (2021) discovered that parents usually limit the digital

literacy time of the children, or do not accompany them during the use of digital technologies, therefore, children end up not knowing how to use digital tools and being unable to access information required for their school projects. It seems that if learners can be more exposed to the usage of digital tools their ability to acquire information online can be improved, as well as their digital competence in the information society.

5.4. DIGITAL TOOL OWNERSHIP

It was pleasant to discover that the majority of grade 12 learners at Centocow High School owned digital tools (smartphone, computer, or laptop). However, the minimum number of them disclosed that they do not have any digital tools. It seems the learners who own digital tools learn to use them from their family members and by trial and error or from peers (Tejasvee, Gahlot, Poonia and Kuri, 2021). The informal context of ownership of tools by proxy or family may have implications for the ethics of using digital tools, resulting in abuse, cyberbullying, and negative use. The design of the devices with the diffusion of smartphones and their affordability may see many rural communities and families able to afford basic digital devices, making more tools available for use and possibly driving up the rates of digital literacy.

5.5. USEFULNESS OF DIGITAL TOOLS TO GRADE 12 LEARNER'S STUDIES

A wide variety of respondents specified that they observe that digital tools are beneficial to them for educational-related reasons. However, findings also indicated that several grade 12 learners at Centocow High School use digital tools for research and personal reasons. As a result, none of the respondents indicated that digital tools are not useful to them. Hence, these findings made it clear that digital tools are very useful to grade 12 learners at Centocow High School.

Konca (2021) revealed that the parents and home settings play an important part in children's interference with digital technologies. Therefore, the household framework should be taken into deliberation for supporting young children's learning and development through digital technologies. Hence, the current study found that some learners lack access to digital tools; therefore, cannot utilize them for their school related queries and end up obtaining poor marks on their projects or school tasks.

Hakimi, Eynon and Murphy (2021) indicated that lack of confirmation mainly for preschool and school-aged children and unrelated societies have a wider effect on the

learning and educational ecosystem. Likewise, the current study suggests a more interconnected approach, where the digital literacy-based lessons are recognized, where unequivocal engagement with digital tools will be considered in school with the school curriculum.

Markopoulos and Giannakos (2021) stated that there is a need for designers of technology to recognize their intentional users in human-computer interaction and ergonomics fields. Child–computer interaction is the scientific investigation area that distresses the occurrences near the collaboration between children, computational and communication technologies. Hence, the current study looked critically at perceptions and the challenges of digital literacy of grade level students in a rural area.

5.6. ACCESS TO DIGITAL TOOLS

Most of the population showed that they access digital tools at home. The next highest number was that of learners who indicated that they get to use digital tools at the library, which requires them to take taxis to the library since they live far and do not have any library at the school. Findings also revealed that some grade 12 learners rely on internet cafes for accessing digital tools, which is also very far from them; as a result, they use taxis to reach them. The least number of respondents indicated that they access digital tools in other places (not listed on the questionnaire).

Therefore, it was identified that even though learners have access to digital tools at home, there are still many learners who depend on libraries and internet cafes to access such tools since they are not available at the school.

5.7. SUMMARY OF THE CHAPTER

All in all, the study revealed that grade 12 learners at Centocow High School at Harry Gwala District are geographically located far from centres of digital tools such as libraries and the internet cafes. Hence, they are not familiar with the tools since they only use “cell phones” in their homes. The study found out that there is no Wi-Fi access at the school, so even the learners who possess digital tools had to use their pocket money to buy data bundles to utilize digital tools for searching various search engines for information in response to their information needs.

CHAPTER SIX: MAIN FINDINGS, CONCLUSIONS AND RECOMMENDATION

6.1. INTRODUCTION

This chapter reveals the study's ultimate conclusions in response to the research problem and objectives. The research intended to explore the perceptions and attitudes of grade 12 learners to digital tools at Centocow High School in rural Harry Gwala District. The chapter aims to unpack conclusions and recommendations based on the data presented and analysed in chapters four and five.

6.2. SUMMARY OF THE THESIS

Chapter one of the thesis delivered an overview of the study, it offered the context of the study, the problem statement, the foundation of the study, the study objectives and the research questions asked. Chapter one offered limitations of the study and definitions of relevant terms used. The study adopted Beetham and Sharpe's (2010) digital literacy model. The model clarified that digital literacy includes the skills, knowledge, searching awareness, assessment and distribution of digital information to facilitate and improving one's work.

The above-mentioned model considers initiatives to create an advantageous learning atmosphere by students simply by bearing in mind the requirements and favourites subjects including ICT, preparing the learning journey and technology used to access and showcase achievements. It was originated by Beetham and Sharpe (2010) with the idea that effective learning is built upon access, skills and practices that enable the development of attributes of effective learners in a digital age. Significantly, the setting of the study was defined, that is, Centocow High School in Harry Gwala District.

Chapter two contained the literature review. A summary of previous studies done on digital literacy, digital literacy skills and practices and an overview of challenges faced by learners when using digital tools were given. The chapter also unpacked the adopted theory and how it underpinned the research.

Chapter three unpacked the research methodology used in the study. The research adopted both qualitative and quantitative research approaches. Interpretivism research paradigm was used, because with interpretivism perspective, researchers tend to gain a deeper understanding of the phenomenon and its complexity in its unique context instead of trying to generalise the base of understanding for the whole

population. The study's target population was grade 12 learners at Centocow High School at Harry Gwala District, Kwa-Zulu Natal, South Africa. A survey research design was adopted. The study adopted both probability and non-probability sampling procedures, hence purposive and simple random sampling were used. Ten learners are interviewed purposively to participate in the study for qualitative data, the top achievers of all grades 12 classes. 82 learners are randomly selected to participate in the study for quantitative data, using the lottery method.

Data was collected through interviews and questionnaires. Cronbach's alpha was used to measure the reliability of the questionnaire in the study. Whereas the validity of the research instrument was confirmed by doing a pre-test on grade 12 learners. The reliability of interviews was measured by the consistency of data that was achieved when the steps of the research were verified through examination of data. While validity was based on the researcher's perception of the findings, accurate analysis of data was guaranteed and trustworthiness criteria to achieve the reliability of the interview schedule and results (Benard, 2017).

Chapter four encompassed the research results. The collected qualitative data from grade 12 learners at Centocow High School, rural Harry Gwala District was examined and were presented in tables and graphs as per questions asked. The quantitative data is presented in a narrative form.

Chapter five presented the summary of findings presented in chapter four. It also discussed findings, the usefulness of digital tools to grade 12 learner's studies, and access to digital tools. Briefly, the study found out that the majority of grade 12 learners at Centocow High School at the rural Harry Gwala District in KwaZulu-Natal, South Africa perceive digital tools useful to them for school-related reasons, research, and personal reasons. However, the study found that most of the population, among others, face the challenge of retrieving wrong information when they use digital tools to seek information. It was also exposed that most learners lack training on the utilization of digital tools; as a result, some feel fear and anxiety.

6.2.1. Main findings and conclusions

The main findings and conclusions of the study are presented. The conclusions are mapped to the research questions.

6.2.1.1. What are the perceptions of digital literacy skills of grade 12 learners at Centocow High School at Harry Gwala District?

The study found that grade 12 learners at Centocow High School perceive digital tools as useful for their school-related, research, and personal reasons. The outcomes further exposed that all grade 12 learners at Centocow High School do not have digital literacy skills, they are unable to utilize digital tools. However, perceive that if there can be access to digital tools and Wi-Fi at the school, there can be huge progress on their access and knowledge of utilizing digital tools. All in all, the above research question exposed that grade 12 learners perceive digital tools as very useful to them even though they lack access and skills of using digital tools.

6.2.1.2. How do grade 12 learners at Centocow High School at Harry Gwala District get access to digital tools?

The results uncovered that most grade 12 learners at Centocow High School access digital tools at home, at libraries and in the internet cafes. The findings presented that the most used digital tools by grade 12 learners at Centocow High School are “cell phones” because they access them at home.

6.2.1.3. How does gender affect the digital literacy skills of grade 12 learners?

The study found that gender does not affect the digital literacy of grade 12 learners at Centocow High School as the results displayed that learners’ gender disregard their digital literacy. In other words, gender does not play a role in the level of digital literacy. In addition, the findings exposed that all grade 12 learners at Centocow High School have insufficient admission to digital tools and do not obtain any teaching at school irrespective of their gender.

6.2.1.4. How do grade 12 learners’ characteristics affect the digital skills of the students?

It was recognized that learners’ characteristics affect their digital literacy because the majority of grade 12 learners at Centocow High School indicated that they are physically distant from centres of digital tools (libraries and internet cafes). It was recognized that grade 12 learners at Centocow High School have no choice but to use their money to travel to the town to access digital tools. Therefore, some “family’s

economic status" inhibit learners' access to digital tools. As a result, they lag with digital literacy.

6.2.1.5. What are the challenges of grade 12 learners in acquiring digital literacy competencies?

The study revealed that grade 12 learners at Centocow High School are unable to familiarize themselves with digital tools. Because they do not have access to libraries and internet cafes since access to such tools is not available at their school. Thus, they must use their money and transportation to reach libraries and internet cafes. Hence, the results exposed that learners experience challenges of being unable to utilize digital tools. The results: moreover, revealed that learners have a challenge of not getting any digital literacy training or lessons at school.

It has been noted that most studies on digital literacy do not often focus on grade 12 learners in rural areas. It would be valuable for additional investigations like this one to be completed in the context of high schools' perspectives. By so doing, providing access to digital tools and the deployment of computers and digital tools and lessons can be better designed, considered, and implemented based on the crucial components in the ecosystem of high schools located in rural areas. For instance, an understanding of the learners' perceptions helps frame best fitting digital literacy interventions at rural schools.

It was found that 49 (60%) of respondents' digital skills is affected by their geographical location (where they live), respondents further disclosed that they live very far from internet cafes and libraries. 29 (35%) of respondents' digital skills are affected by their families' economic status. Whereas three (4%) revealed that their characteristics do not affect their digital skills. Only one (1%) exposed that their digital skills are affected by how they feel.

6.3. RECOMMENDATIONS

The current study recommends that the Department of Education (Further Education and Training phase) introduce a subject or lessons on digital literacy so that learners can have an idea and expertise on the utilization of digital tools. The reason being, the world is becoming more and more digitally competitive, making the learning process harder for learners in rural areas with a lack of digital literacy and a lack of access to

digital tools. Selwyn, Nemorin, Bulfin and Johnson (2017) stated that attention should be drawn to the rising opinion that digital literacy abilities are authoritative for educators and students to be useful in autonomous digital societies.

The present study stresses the essential need for concepts of digital literacy to be implied from the perspective of “literacies”. Present literacy considerations have extended the outdated explanation that embraces writing and reading (perhaps likewise containing proficiency), to embrace creative, interpretive abilities or experiences through a variety of written texts (Imms and Kvan, 2021). Ferrari (2012) stated that digital competence is both a requirement and a right of citizens if they are to be functional today. A set of knowledge and attitudes should be compulsory to approach digital information efficiently, ethically, and effectively.

Hence, the current study calls for a right or an entitlement that puts upon educators the responsibility to nurture and develop several abilities in students so that they can take part in social, cultural, economic, and intellectual life (Julien, 2018). Thus, becoming active citizens in this environment, the teacher’s role becomes challenging and increasingly more important. Every educator must understand that digital literacy is essential if we want our citizens to participate in today’s modern world (Reimers, 2020).

The results of the current study illustrate that there should be more computer-based lessons at the high school level to lessen the problems of digital literacy skills for learners under marginalized schools. Puthaprasert and Supising (2021), stated that the digital literacy skills of administrators at marginalized schools encouraged students within these schools.

Laidlaw *et al.* (2021), stated that current children are rising in a post-typographic era, where mobile electronic devices and digital texts are increasingly present. Therefore, parents and educators should play a role in assisting children to shift into new digital practices and new text forms to ease the sense of doubt. Likewise, the current study recommends that teachers and parents should encourage learners and assist them in using and familiarizing themselves with digital tools.

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APPENDIX A: INTERVIEW GUIDE FOR LEARNERS

Interview guide for learners

Title: Digital Literacy among Grade 12 Learners at Centocow High School at Harry Gwala District, Kwa-Zulu Natal, South Africa

Dear respondent

I am Thandeka Precious Gamede, a Master of Information Studies student at the University of KwaZulu-Natal. I am conducting a study on **Digital literacy among grade 12 learners at Centocow high school at Harry Gwala district, KwaZulu-Natal, South Africa.**

As part of the requirements for the completion of the Masters' qualification, I humbly ask for your participation in my research project by answering the following few questions. It is 100% guaranteed that all information provided will be used for research purposes only. This study will make sure that privacy is observed meaning that your name and surname will not be used. Your input will be seriously appreciated.

For any queries, do not hesitate to contact us:

1. Researcher: Thandeka Precious Gamede
   Email: tgameder@gmail.com
   Cell: 072 799 2110

2. Supervisor: Dr Gbolahan Olasina
   Email: olasinag@ukzn.ac.za
   Tel: 033 260 5285

Thank you in advance

- Describe your personal experience with digital tools (such as Google, social networks and creating and sharing content on the Web.
- Do you use social networks e.g., Facebook, WhatsApp, Twitter, Instagram etc.)? Do you find them easy or hard to use them?

- When was your first experience with a digital tool (email, Google, YouTube videos, online gaming, Tik Tok, Instagram)? What tool was it? Where was this experience? How easy to use did you find the tool? Can you share some of the experiences?
- Are you afraid or feel any fear when you have to use digital tools?
- What conditions influence you towards the usage of digital literacy tools. How can you be motivated to use digital tools (such as PowerPoint, Microsoft Word, email? How can you be motivated to use digital tools?
- Do you think having a tablet or Wi-Fi will assist your digital literacy?
- What challenges do you face as a learner as you use digital tools? Do you get any support for using digital tools from teachers / school librarian?
- What are some of the things that can calm your fears, worries and anxiety about a lack of digital tools in your locality?

APPENDIX B: RESEARCH QUESTIONNAIRE

College of Humanities: School of Social Sciences

Department of Information Studies

Research Questionnaire

Title: Digital Literacy among Grade 12 Learners at Centocow High School at Harry Gwala District, Kwa-Zulu Natal, South Africa

Dear respondent

I am Thandeka Precious Gamede, a Master' of Information Studies student at the University of KwaZulu-Natal. I am conducting a study on **Digital literacy among grade 12 learners at Centocow high school at Harry Gwala district, KwaZulu-Natal, South Africa.**

As part of the requirements for the completion of the Masters qualification, I humbly ask for your participation in my research project by completing this questionnaire. It is 100% guaranteed that all information provided will be used for research purposes only. Confidentiality and anonymity will be observed. Your contribution will be greatly valued.

For any queries, do not hesitate to contact us:

3. Researcher: Thandeka Precious Gamede
   Email: tgameder@gmail.com
   Cell: 072 799 2110

4. Supervisor: Dr Gbolahan Olasina
   Email: olasinag@ukzn.ac.za
   Tel: 033 260 5285

Thank you in advance

Instructions

i) Please tick or mark with an "x" the applicable answer(s)
ii) Use spaces provided to write your answers.

SECTION 1: DEMOGRAPHICS

1. **Gender**

Male ☐ Female ☐ Choose not to answer ☐

2. **Age group**

18 and 19 ☐ 20 and 21 ☐ Above 21 ☐

3. **Subjects**

History and Geography ☐ Physical Science and Mathematics ☐

Accounting and Economics ☐

SECTION 2: BACKGROUND INFORMATION

4. **Do you have a smartphone, computer or (laptop)?** ☐ Yes ☐ No

5. **Where do you get to use digital tools e.g., computers, tablets, iPad, iPod, or electronic games?**

   At home ☐ At the library ☐ At the internet cafes ☐

   Other ☐

6. **Do you think digital tools (such as laptops, desktops, smartphones, etc) are useful for your studies? Provide reasons for your answer**

   ……
   ……
   ……
   .....

7. **What do you think or observe about your digital literacy skills (are you able to type using a desktop or laptop; able to produce text, images and audio using a smartphone; are you able to use email, Google) as a grade 12 learner at Centocow High School at Harry Gwala District?**

   ……
   ……
   ……
   ……
   ……

8. **What difficulties do you face when you have to use digital tools e.g., email, Google, smartphones?**

   ……
   ……
   ……
   ……

9. **Does your environment (such as family or where you stay or live, how you feel, grade level affects your knowledge of digital tools? Explain**

   ……
   ……
   ……
   ……

10. **Do you think your gender affects your digital skills? Explain**

    ……
    ……
    ……
    ……

THE END

THANK YOU FOR YOUR TIME AND COLLABORATION, YOUR PARTICIPATION IS HIGHLY APPRECIATED!

APPENDIX C: CERTIFICATE OF EDITING

Certificate of Editing

Authors names:
Thandeka Precious Gamede

Date issued:
17 December 2021

Thesis title:
Digital Literacy among Grade 12 Learners at Centocow High School at Harry Gwala District, Kwa-Zulu Natal, South Africa.

This document certifies that the above mentioned thesis was proofread and edited by Emend.it. The document was edited for proper English language, grammar, punctuation, spelling, and overall style by one or more of our professional editors. The editor endeavored to ensure that the author's intended meaning was not altered during the review. All amendments were tracked with the Microsoft Word "Tracking Changes" feature. Therefore, the authors had the option to reject or accept each change individually.

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