UNIVERSITY OF CAPE TOWN

Digital literacy:

A case study of digital readiness and technology adoption at a theological college in Cape Town, South Africa.

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Abstract

Technological innovations are rapidly transforming the way Higher Educational Institutions are delivering their core mission of teaching, learning and creative inquiry. A significant number of faculty are resistant to adopting new technologies. This study aims to explore the digital readiness and technology adoption of faculty and staff at a theological college and to understand the current digital practices and views of key stakeholders regarding the drivers and barriers of digital readiness and technology adoption.

The research aims were met through an extensive literature review and the implementation of a practical research study. A qualitative case study, using semi-structured interviews with key stakeholders was carried out.

The findings show that the concepts of digital literacy and digital readiness are often misunderstood. The main driver of technological adoption was COVID-19, while the main barriers were age and the digital divide. Management support was positive, but a clear vision and strategy for technology adoption was absent.

The findings offer valuable insight into technological issues that affects HEIs, especially theological education. While findings cannot be generalised, they may be relatable and applicable to other disciplines. Recommendations for future research and practice are proposed for faculty and the college to consider.

PLAGIARISM DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signed by candidate

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List of acronyms and abbreviations

A	attitude towards use
ACRL	Association of College and Research Libraries
AI	Artificial Intelligence
ALA	American Library Association
ANCIL	A New Curriculum for Information literacy
BI	Behavioural Intention to Use
CAQDAS	Computer-Assisted Qualitative Data Analysis Software
COVID-19	Coronavirus Disease of 2019
DKIS	Department of Knowledge and Information Stewardship
DL	Digital Literacy
4IR	Fourth Industrial Revolution
GWC	George Whitefield College
HE	Higher Education
HEI	Higher Education Institution
IL	Information Literacy
IoT	Internet of Things
JISC	Joint Information Systems Committee
LMS	Learner Management System
NMC	New Media Consortium
OER	Open Educational Resources
PEU	Perceived Ease of Use
PU	Perceived Usefulness
REACH-SA	Reformed Evangelical Anglican Church of South Africa
TAM	Technological Acceptance Model
TRA	Theory of Reasoned Action
TVET	Technical and Vocational Education and Training
UCT	University of Cape Town
UTAUT	Unified Theory of Acceptance and Use of Technology

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Chapter 1: Introduction and background to the study

The purpose of this study was to examine the digital literacy practices of faculty at a theological college with a view to getting a deeper understanding of the readiness of faculty and students to engage in a digitally mediated society. The introductory chapter explains the background, problem statement, purpose of study, research objectives, research questions, and the context and significance of the study.

The conceptual framework section is next. The research design section follows the conceptual framework. A brief outline of assumptions, delimitations, and limitations follows. The study methodology concludes the introductory chapter.

1.1 Background

The world is changing at a rapid pace. Technological innovations, especially digital technologies, are influencing all spheres of our lives (Schwab, 2017). Emerging educational technologies are expected to drastically change the way colleges and universities view their core mission of teaching, learning and creative inquiry (Alexander et al., 2019:6). Faculty and students alike will be required to be adept at the use of these new and emerging digital technologies. Students in particular are seen as early adopters of these technologies (Guri-Rosenblit, 2018: 93). It is assumed that because students are savvy users of social media tools, they will be able to use these tools for educational purposes. However, Ng (2012), found that unless students are made aware of the benefits of these tools and are instructed in their use, they will not employ the tools for academic purposes. Digital natives are supposed to embrace and thrive in a digitally mediated environment, but as research has shown, this is not the case (Honey, North, & Gunn, 2006; Coldwell-Neilson, 2010; Ng, 2012; Rubenic, Stricevic & Juric, 2013; Takavarasha, Cilliers & Chinyammindi, 2018; Abbas, Hussain & Rassool, 2019).

Guri-Rosenblit (2018) reported on a study done at Stanford University where 60% of a group of history students were unable to find relevant information online. Most student relied on Google and Wikipedia for their information. That study found that students were savvy with using digital media but were lacking critical thinking and problem-solving skills (Guri-Rosenblit, 2018: 94). The literature (Kim, Hong & Song, 2019) also shows that E-learning adoption and attitudes alone do not encourage academic achievement. The educational environment must encourage deeper engagement in educational activities. Students need opportunities or a purpose to use the educational tools (Kim, Hong & Song, 2019, 13). Students struggle to use technology effectively to enhance their educational experiences. The onus thus falls on

Higher Education Institutions (HEIs) to develop the digital skills of their students. Digital literacy, is defined as "the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers." (Gilster, 1997:33). However, one study by (Alexander et al, 2019:14) reported that this is becoming a challenge, as "merely maintaining the basic literacies by which students and instructors' access and evaluate information is no longer sufficient to support the complex needs of a digitally mediated society"**.**

This digitally rich learning environment demands that faculty buy into the adoption and use of technology. It further requires that faculty become adept at using these technologies in their classrooms. Despite the gains in digital literacy, further research in the digital readiness and technological adoption of faculty, staff and students is needed to uncover what factors would encourage adoption of educational technologies and explore the barriers to digital readiness amongst college teachers (Pelletier et al., 2021:8).

1.2 Problem Statement

Technological innovation in higher education challenged prevailing thinking about the way faculty teach and students learn in a digitally mediated learning environment (Alexander et al., 2019; Wineburg et al., 2016; Guri-Rosenblit, 2018; Kaeophanuek, Na-Songkhla, & Nilsook, 2018). Digital readiness has been found to enhance academic achievement (Kim, Hong & Song, 2019). However, Coldwell-Neilson (2017), contends that technology use does not mean understanding and may not contribute to transferable digital literacy skills. Similarly, Abbas et al. (2019) concluded in their study of the effects of digital literacy on academic performance, that digital literacy did not significantly affect academic performance. Yet, learning technologies, with extensive faculty involvement have been shown to improve the learning experience and skills of students at university (Schneckenberg, 2010). Guri-Rosenblit (2018) when exploring the role of instructors in a digital educational environment, points to the supporting role that faculty and instructors at HEIs need to play. Overall, the literature indicates that with the proliferation of emerging technological tools in Higher Education (HE), faculty will be under extra strain to support, guide and counsel students throughout their studies at HEIs.

Therefore, faculty needs to be digitally literate and ready to transform the way they engage with students in HE. Faculty are already grappling with the adoption of new technologies; however, some studies indicates that they find it difficult to see the value of these tools (Dougherty, 2015; Crews et al., 2009).

There is thus a need to investigate the readiness of faculty to operate in a digitally mediated educational setting.

1.3 Purpose of study

The purpose of this qualitative case study was to examine the digital readiness and technology adoption of faculty and staff at an Evangelical Theological College in Cape Town. This study explored digital readiness as the capacity to engage with online resources with knowledge about its usefulness and application to Higher Education.

The intention, therefore, was to focus on the digitally mediated learning environment and thereby advance an understanding of the issues surrounding the digital readiness of academic staff and to provide recommendations for improvement.

1.4 Research Objectives & Research Questions

Specific Research objectives:

- To determine the current digital literacy practices at the George Whitefield College.
- To identify the driving forces and barriers to Digital Readiness and technology adoption.
- To explore the stakeholder's (staff and faculty) views on Digital Readiness.

Therefore, this study will address the following research questions:

- What are the actual digital literacy practices at the George Whitefield College?
- What are the driving forces and barriers to Digital Readiness and technology adoption.?
- What are the views of stakeholders on the digital readiness and technology adoption of George Whitefield College?

1.5 Context of the study

George Whitefield College (GWC) is an evangelical theological college situated in Muizenberg, Cape Town, South Africa. It is the official feeder college of the Reformed Evangelical Anglican Church of South Africa (REACH-SA). The College aims to address the following statement "The church in Africa is growing, and a growing church needs trained leaders who can lead people to better understand God's Word and disciple their congregations to Christian maturity. The rate of church growth in Africa is exceeding the number of theologically trained church leaders available to disciple these churches" (GWC, n.d.). It offers training modules in: Doctrine, Biblical Languages, Church History and Biblical Theology.

It has a multicultural, multinational student population that includes students from fifteen countries in Africa, as well students from the United Kingdom (UK), Austria, Peru, Australia and Taiwan. Students come to college with diverse levels of digital skills and educational levels. Most have their own devices and are quite savvy in the digital space, however, as the literature points out (Gurr-Rosenblit, 2018:93), they might lack critical thinking and problem-solving skills.

The ten full time faculty includes men and women from South Africa and Australia, with specialists in Biblical Theology, Church History, Systematic Theology, Pastoral Theology, Biblical Languages and Biblical Studies.

1.6 Significance of the study

The demands experienced by faculty to operate in a digitally mediated educational environment justifies the need for a study into technology adoption and digital readiness. This research will benefit faculty, staff, and administrators at George Whitefield College. It is important for several reasons: firstly, it provides a critical review of the pertinent issues around digital readiness. Secondly, by obtaining the views of different stakeholders at the college on existing practices, a rich picture emerges, which in informs and enhances our understanding of digital readiness and technology acceptance at a theological college. Thirdly, by identifying the driving forces and barriers to the adoption of educational tools, the college's strategic plan could be updated.

Although the results of this research cannot be generalised, the conclusions of the literature review and empirical case study provides helpful insights to college management on the state of digital technology engagement of faculty and staff. It further provides recommendations in terms of technological development and training needed by faculty, as well as identifying the areas of difficulty and interest that needs to be revisited. Educational innovations will continuously challenge the way HEIs function, and this research benefited those interested in ensuring the effective adoption of technology by fully trained teaching staff.

1.7 Conceptual Framework and preliminary Literature review

The conceptual framework is generally seen as the central argument for a research project (Ravitch & Riggan, 2017:8). It serves as the architecture for a piece of research and incorporates the personal interests and goals, and identity and positionality of the researcher. The conceptual framework is strengthened by a literature review.

1.7.1 Theoretical Framework

A theoretical framework refers to the way a researcher integrates and situates the formal theories that guide and gives context to a study (Ravitch & Carl, 2016:86). This study uses the Technology Acceptance Model (TAM) as a lens to view the digital readiness and acceptance of technology in a HEI (Davis, 1986). Essentially, TAM models how users initially approach and finally decide to accept and use technology.

Key internal beliefs, attitudes and intentions influence the decision-making process. These include; Perceived Usefulness (PU), Perceived ease of use (PEU), attitude towards use (A) and behavioural intention to use (BI). Researchers are cautioned to take note of its limitations and weaknesses when using this model (Ajibade, 2018; Benbasat & Barki, 2007; Malatji, Eck & Zuva, 2020). Notwithstanding its restrictions, TAM remains a very popular model because of its flexibility, simplicity and the extensive body of research that proved its high validity (Mulero and Adeyeye, 2013; Alharbi & Drew, 2014; Bere & Rambe, 2016).

1.7.2 Literature Review

The literature review is an analysis of relevant research. It is a complex undertaking and is usually expected to be done before the researcher starts research, but it is an incomplete and ongoing process (Galvan & Galvan, 2017:11). It needs to communicate to the reader that the researcher has read widely and with the necessary depth.

For this study, the researcher explored, analyzed and critiqued the following areas which are going to be presented in detail in chapter two : the digital readiness of students (Honey, North & Gunn, 2006; Abbas et al., 2019; Demier & Yurdugil, 2015), the adoption of technology by faculty (Bere & Rambe, 2016; Al-Awidi & Aldhafeeri, 2017; Demir & Yurdugül, 2015), emerging digital technologies (Al-Emran, Elsherif & Shaalan, 2016; Crompton & Burke, 2018; Sung, Chang & Lin, 2016), the driving forces of digital readiness (Schwab, 2017; Watty, McKay & Ngo, 2016), educational technological innovations (Kilfoil, 2015; Alexander, Adams Becker, & Cummins, 2016), and barriers to technology adoption (Crews, Brown, and Miller, 2009; Dougherty, 2015; Guri-Rosenblit, 2018:95; Al-Zahrani, 2015; Kaeophanuek, Na-Songkhla, & Nilsook, 2018),

The literature reflects a complex understanding of the key concepts of information literacy, digital literacy and digital readiness. The Technological Acceptance Model (TAM), a simple and well documented model, was chosen as the theoretical lens that undergirds this study. The rationale being that TAM can be used to explain issues of internal beliefs, mindset and intention to accept and use technology

1.8 Overview of Research Design

This study utilised a qualitative research design. Qualitative research is an inquiry process that explores social or human issues within a strict methodological approach (Creswell & Poth, 2018:326). This process is interpretive, and the researcher aimed to capture the authentic responses of subjects to stay true to “specific social-historical contexts" (Neuman, 2012:89). The researcher builds a genuine picture of the way the subjects see, view, approach and experience the world and construct meaning of their experiences along with phenomena within it (Ravitch & Carl, 2016:7). Qualitative research is thus warranted when researchers need to achieve a deeper understanding of the phenomenon, issue or case under study, because "qualitative research-rich complexity of the phenomenon, deepens our understanding of how things work" (Trochim & Donnelly, 2008:143).

The case study research method was selected to collect primary (empirical data) about the digital readiness of faculty. A case study is a detailed study of a specific phenomenon, subject, group, place or event. This method was chosen as it allows intensive study of a relatively small number of situations or cases. It further enables the researcher to document a complete description and understanding of the concepts being studied, despite the small numbers of persons involved in the case study (Struwig & Stead, 2013:7). It allowed the researcher to select one case (George Whitefield College) carefully and to explore digital readiness and technology adoption in depth, and to follow the unfolding of many complex features across time and placing the case within a specific historical and cultural context (Neuman, 2012:21). The means of collecting data was via semi-structured interviews. The sample was the full-time faculty and staff identified by the researcher.

Sampling refers to actions made in relation to from where and from whom a researcher will gather the data needed to answer the research questions. In this study the researcher employed a purposive sampling strategy. This strategy also known as purposeful sampling, is the primary method used in qualitative research and allows the researcher to choose participants based on specific criteria. Participants may have unique experiences, exclusive knowledge about a phenomenon, and live or work at a specific place (Ravitch & Carl, 2016:128). The faculty and some administrative staff at George Whitefield College were selected to participate in the study, as the primary stakeholders, they provided expert witness to the investigation into digital readiness at the college.

1.9. Assumptions, delimitations, and limitations

1.9.1 Assumptions

An assumption of this study was that data on the state of digital readiness can be ascertained from a case study methodology using questionnaires and semi-structured interviews. Also, the researcher assumed that all participants answered the questions truthfully and completely during the interviews.

1.9.2 Limitations and delimitations of the study

The participants were not fully representative of the population. Another limitation of this study is that the data is confined to members of one college. Perceptions may vary from faculty of other theological colleges. Findings may not be applicable across generations.

Having worked in the Library and Information sector for more than 26 years, the researcher has inherent biases, be it unconscious or conscious, from his workplace experience.

1.10 Organisation of the study

Chapter One	Included in this chapter is the background to the study, the problem statement, purpose, objectives and research questions, importance of the study, research design, assumptions, delimitations and limitations of the study
Chapter Two	Contains a comprehensive literature review and conceptual framework dealing with the digital literacy practices and digital readiness of faculty and related concepts.
Chapter Three	Describes the research design and methodology of the study. It includes a description of the instrument used to gather the empirical data, the procedures followed, and the determination of the sample selected for the study.
Chapter Four	This chapter provides an explanation of the analysis of the data and a discussion of the findings. It describes the participants and discusses the following themes: technological awareness, the current state of technological knowledge and skills, current practices, management support, drivers and barriers to technology adoption and training needs for technology.
Chapter Five	This chapter summarises the study with the following sections: discussion of the results, conclusions based on the results, recommendations and conclusions.

Chapter 2 Conceptual Framework and Literature Review

2.1 Introduction

This conceptual framework and literature review will examine relevant literature to further the researcher's understanding digital literacy and readiness. Further, it is hoped that the review will contribute significantly to the understanding of how Higher Education Institutions (HEIs) operate in the digital space and set light on the digital practices of these institutions. It will also explore in what way the driving forces are setting the agenda for HEIs in the adoption of digital technologies. More importantly, this review will investigate how faculty are experiencing the demands of a digitally mediated educational environment. The aim is thus to provide a critical understanding of the key issues associated with digital literacy and will provide the focus and justification for a study on digital readiness and technological adoption at a theological college.

2.2 Conceptual framework

Ravitch and Riggan (2017:8), posits the conceptual framework as the overarching argument for a research project. It serves as the architecture for a piece of research and incorporates the personal interests and goals, identity and positionality of the researcher. The conceptual framework is strengthened by a literature review. Some authors claim that the literature review, theoretical framework and conceptual frameworks are basically the same thing, and much confusion exists (Ngulube, Mathipa & Gumbo, 2016:44). Ravitch and Riggan (2017:9), disagrees, and sees the conceptual framework as the superstructure of a study. For this study the conceptual framework is a mechanism that helped the researcher to decide on the topic of study. It also assisted to craft an argument for the topic and methods. The following subsection discusses digital literacy concepts and TAM.

2.2.1 Digital literacy (DL)

One of the earliest definitions of DL emphasize understanding and using information from a wide variety of sources and different formats accessible by means of computers (Gilster, 1997). However, digital literacies need to be thought of as more than computer literacy, as the concept covers a range of practices, including computer literacy, information literacy, media literacy, communication literacy, visual literacy and technology literacy (Brown & Mayisela, 2015:4). This definition aligns with the view of Eshet-Alkalai (2014:94), who suggested that digital literacy should be seen as more than the ability to utilize computer technology, as it includes a large variety of complex cognitive, motor, sociological, and emotional skills.

Another author referred to digital literacy as the multiplicity of literacies associated with the use of digital technologies, a broad term that encompasses technical, cognitive and social-emotional aspects of online and off-line learning with digital technology (Ng,2012:1066). Similar to information literacy, DL is also defined as a set of skills. Eshet-Alkalai (2014:102) calls it a "survival skill" in the digital era. The author further explains it as constituting a system of skills and strategies employed in the digital milieu. Essentially, when users engage a variety of digital literacy types, they enhance their performance and "survive" the challenging terrain within their digitally mediated environment (Eshet-Alkalai, 2014:102). A more recent study also emphasizes the skill part of DL, proposing three skill indicators; information skills, digital skills and digital transformation (Kaeophanuek, Na-Songkhla, & Nilsook, 2018: 293). It is thus apparent that DL is a complex and divergent concept (Alexander, Adams Becker & Cummins, 2016:1; Mayisela, 2018:243), and the literature offers no shared understanding of what DL is (Coldwell-Neilson, 2017:75). For this study digital literacy refers to the multiplicity of literacies associated with the use of digital technologies (Ng,2012:1066).

2.2.2 Digital Competency

Adding to the complex and challenging understanding of DL is the concept of digital competency (Ilomäki, et al., 2011; Spante, Hashemi, Lundin & Algers, 2018). The semantic confusion is further evidence of the diverse meaning of digital literacy. Digital literacy is seen as an important competency for graduates that enter the workspace (Julien, 2015:2144). In this way, digital competency is just one of several terms that have been used to describe the skills and proficiencies needed to use digital technologies. It is considered a broader, more multifaceted term than digital literacy, more than just knowledge and skills. It functions on a more complex level and employs psychosocial resources (including skills and attitudes) in specific digital settings (OECD, 2005:4). Digital Competency, therefore, should be seen as consisting of both the digital skills together with the social and emotional aspects needed to fully engage with digital devices (Ilomäki, et al., 2011:2).

2.2.3 Digital readiness

More importantly for this study is the concept: digital readiness. Within the digital literacy paradigm, the question of the digital readiness of all the role players in education is paramount. Particularly, because of findings that digital natives, although being savvy with social media, were unable to translate these competencies into tangible educational success.

For this study digital readiness will generally be seen as the means and application of digital processes and tools (Nation et al., 2018:95). Readiness evokes a sense of preparedness to do something. In terms of

technology, readiness can be viewed as a developmental phase that describes inclination, willingness, and preparedness to execute an action (Naution et al., 2018:95). In the educational environment readiness is seen as the extent to which a learner is ready to engage in a learning endeavor (Academic Readiness: Definition & Assessment, 2016). For this study, readiness is seen as the preparedness of college faculty with the knowledge, skills and attitudes to partake fully in the digitally mediated education milieu (Hong & Kim, 2018:304).

A few studies have examined the concept of digital readiness and proposed a definition for it. In one such study, digital readiness is defined in terms of the ability to interact knowledgably and safely with online technology (Horrigan, 2014:2). In another study, involving college students, Kim, Hong and Song, (2019:5) saw digital readiness as the technology-related knowledge, skills, attitudes and competencies that students use to engage with digital tools to achieve their educational goals and objectives while operating in a digitally mediated educational environment. For this study, digital readiness is defined as the inclination and willingness of individuals or organizations to embrace and adopt technologies and the readiness to develop innovative opportunities that will help them realize their aims and objectives at a much faster pace than usual (Nasution et al., 2018:97).

2.2.4 Theoretical Approach

A theoretical framework refers to the way a researcher integrates and situates the formal theories that guide and gives context to a study (Ravitch & Carl, 2016:86). The theoretical framework for Grant and Osanloo (2014:13) is seen as consisting of "the selected theory (or theories) that undergirds the researcher's thinking with regards to how they understand and plan to investigate a topic, as well as the concepts and definitions from that theory that are relevant to the topic." These authors assert that the theoretical framework is an important part of the dissertation journey, one which must be attended to as soon as a research topic is decided upon. In this section the researcher will discuss the Technology Acceptance Model (TAM) as a possible theoretical model for this study.

2.2.4.1 Technology Acceptance Model (TAM)

This study uses the Technology Acceptance Model (TAM) as a lens to view the digital readiness and acceptance of technology in a HEI. Davis (1986) developed TAM as an adaptation of the Theory of Reasoned Action (TRA). Davis had envisioned that TAM would set light on the users' acceptance of information systems or technologies. TRA was used as a theoretical source for identifying the causal connections between perceived usefulness and perceived ease of use, attitude of users, their intentions and actual technology adoption behavior (Davis, Bagozzi and Warshaw, 1989:983).

In essence, TAM models how users initially approach and finally accept and use technology. The model suggests that when confronted with new technology, the user will have to make a few decisions about how and when they want to use the technology. This decision-making process is influenced by key internal beliefs, attitudes and intentions. The most important of these are Perceived Usefulness (PU) and Perceived ease of use (PEU) (Davis, Bagozzi & Warshaw, 1989:985). Perceived usefulness refers to the belief that the technology will enhance your job performance. Perceived ease of use refers to the degree that one believes the technology will require minimum effort to use (Venkatesh & Davis, 2000:187). The other variables are attitude towards use (A) and behavioural intention to use(BI).

TAM was updated several times, (Davis, 1989; Venkatesh & Davis, 1996). The final version of TAM found that both PU and PEU to have a direct influence on BI (Venkatesh & Davis, 1996). The attitude construct was dropped and additional variables such as experience and subjective norm were added (Turner et al., 2010:404).

Venkatesh and Davis (2000), after examining four longitudinal studies, argued for an extension of TAM and proposed TAM2, which incorporated cognitive and social influence processes as a means to quantity usage intentions and perceived usefulness.

Later revisions included TAM3; an integrated model of technology acceptance that combined TAM2 and the model of the determinants of perceived ease of use (Venkatesh & Bala, 2008). Venkatesh et al., (2003) suggested a unified theory that combined a synthesis of different acceptance models. This theory became known as the unified theory of acceptance and use of technology (UTAUT).

TAM is a very popular model because of its flexibility, simplicity and the extensive body of research that proved its high validity (Mulero and Adeyeye, 2013; Alharbi & Drew, 2014; Bere & Rambe, 2016). Importantly for this study, new constructs can be added easily to enhance a study's validity. Even with its limitations (Ajibade, 2018), TAM still offers a sound theoretical base to predict and understand a user's intention to accept the use of e-technology. In particular, the constructs (perceived ease of use and perceived usefulness) are used to explain technology adoption (Dlolo & Mafini, 2013).

This study therefore leans towards TAM as a theoretical lens because TAM has evolved to become the primary model in understanding human decision making towards potential adoption or dismissal of emerging technologies (Marangunić & Granić,2015:81).

The study, as much as TAM is the main model selected, it also considers the concepts discussed above, and is cognizant of the model's constraints (Ajibade, 2018; Benbasat & Barki, 2007; Malatji, Eck & Zuva,

2020). That is digital literature, digital readiness, and digital competency. This means that the study adopted a conceptual framework (Ngulube, Mathipa & Gumbo, 2016).

2.3 Literature Review

A review of pertinent research is a key component in building a case for an empirical study that leads to a theses or dissertation. The literature review is a complex undertaking and is usually expected to be done before one starts their research, but is an incomplete and ongoing process (Galvan & Galvan, 2017:11). It is a process that communicates to the reader that the author has read widely with the necessary depth. Some authors argue that it has a foundational function, in that it uncovers the theoretical framework to a study, while it integrates, synthesizes and critiques existing knowledge on the topic under scrutiny (Merriam, 2009:75). This study aligns with the understanding that literature review is an element of the conceptual framework and uncovers the topical research important for building the argument for the study as well as unearthing the theoretical lens to advance the argument (Ravitch & Riggan, 2017:9). The researcher will explore the following areas: Digital readiness of faculty and adoption of digital technologies, Digital technologies, Factors that influence faculty adoption of technology, Driving forces of digital readiness and Barriers to the adoption of technologies.

2.3.1 Faculty and adoption of digital technologies

In light of the above, Bere and Rambe (2016), exploring the acceptance and capacity of mobile instant messaging systems to enhance student performance at a South African university of technology, concluded that one way educators can contribute to the uptake of flexible mobile learning, is to create diverse learning environments that enhance learner control of learning. Further away, Al-Zahrani (2015) used an online survey-questionnaire and semi-structured interviews to investigate information and communication technology (ICT) training needs in Suadi HEIs. The author found that although faculty was aware of the need and benefits of integrating technologies, barriers like traditionalism and costs hindered adoption. Faculty identified the need for professional training as opportunities were almost non-existent. Another author found that faculty at community colleges were either already engaging or intend to engage with digital technologies (Dougherty, 2015).

In the same vein, Schneckenberg (2010) explored the role of eCompetence in faculty's adoption of eLearning strategies in higher education. This study claims that learning technologies can enhance the experience of students at universities and other HEIs. Similarly, researchers explored faculty training needs towards adoption of educational technology for teaching in terms of online tools, software tools and classroom tools (Crews, Brown & Miller, 2009), faculty perceptions on their readiness to teach online

(Martin, Wang, Jokiaho, et al., 2019), the readiness of teachers to implement a digital curriculum in schools in Kuwait (Al-Awidi & Aldhafeeri, 2017), online instructors' e-learning readiness and e-learning readiness of academic staff at university (Demir & Yurdugül, 2015).

The research is clear; the acquisition and proficiency in digital knowledge and skills of faculty is crucial for successful technology integration in HEIs.

2.3.2 Digital technologies

To enhance the learning experience of their students, educators need to be aware of the available technologies and their use in a digitally mediated learning environment. Faculty can employ digital technologies to create scenarios that simulate real-life problem solving and the development of marketable communication skills, key requirements for graduates (Dougherty, 2015:317). Mobile technologies in the form of smartphones and tablets have been shown to improve the learning experiences of students in HEIs (Al-Emran, Elsherif & Shaalan, 2016: 101; Crompton & Burke, 2018; Sung, Chang & Lin, 2016). Social media can further enrich the learning experience of students, but some faculty seems reluctant to use it. Lewis, Fretwell and Parham, (2013), found that up to 86% of faculty never use Facebook, Twitter or LinkedIn, and concludes that they can contribute significantly to their students' classroom experience by slightly adjusting their preparation and delivery approaches to their media savvy students (Lewis, Fretwell & Parham, 2013:31).

The high level of engagement with educational technology by students have underlined the role instructors play in encouraging the best practice use of digital tools (Hendersen, Finger & Selwyn, 2016:245). What is needed is to "foster greater understanding of the technologies available to academics and develop their capacity in using these technologies to ensure the perceived ease of use is suitable" (Watty, McKay & Ngo, 2016:10). This means that institutions need to develop the capacity of faculty so that they appreciate the possibilities and benefits of technologies and its impact on teaching and learning. This is done via the garnering of interest, raising awareness, building capacity, and providing appropriate support, resources, time and funding (Watty, McKay & Ngo, 2016:10-11).

2.3.3 Factors that influence faculty adoption of technology

While developing the capacity of faculty for technology use is considered imperative in HEIs enrichment programs, some issues needs to be addressed first. For example, Dougherty (2015) investigated factors that may influence faculty's adoption of digital technologies in their teaching. The author found that they are aware of the benefits, but are cautious, because they are uncertain of its complementary value. This

study underlined the necessity for appropriate training and professional support for faculty from their institutions.

Another study by Watty, McKay and Ngo, (2016), found that educator resistance was a key barrier to technology adoption. In this study faculty perceived the lack of capacity, training opportunities and institutional support as fundamental barriers to the adoption of technology (Watty, McKay & Ngo, 2016:1). Until faculty realize the role they need to play, students will continue to experience fragmented e-learning experiences at HEIs.

Kim, Hong and Song (2019) stressed that technology integration in courses and campus wide e-learning adoption should be the focus of faculty. The authors found that e-learning adoption and attitudes impacted on academic achievements. E-learning settings should emphasize learning assistance and community building. Furthermore, the supervision and teaching philosophy of instructors should guide the integration of e-learning tools and infrastructure in classroom settings.

2.3.4 Driving forces of digital readiness

The major driving force for digital readiness is the advent of the fourth industrial revolution (4IR) and the realization of the internet of things (IoT), that radically redefined the relationship between things and people (Schwab, 2017:18). The IoT targets the inefficient interactions between people and their homes, affecting, for instance, the management of our health, domestic energy consumption, and the way we learn, and much more (Horrigan, 2014:12). In this environment, advanced digital information skills are indispensable. The focus will be on educational institutions to provide graduates with the appropriate skills. As noted by Dougherty (2015:1), the modern labor environment needs graduates that can communicate at a higher level and possess above average problem-solving skills while operating in an ever increasingly complex environment, where new and emerging internet and digital technologies dictate their progress and success. The emphasizes will be on lifelong learning and the readiness to acquire and use technology for personal, and professional requirements. While, students and faculty may operate in diverse environments, appropriate digital tools may allow them to fashion their technological milieu to their educational requirements (Watty, McKay & Ngo, 2016:12).

2.3.4.1 Educational technological innovations

Educational technology has been transforming the way education is presented and experienced. In some ways, learning with technology can lead to more meaningful educational experiences (Kilfoil, 2015:3). A regular publication, The *NMC Horizon Report* (2016), predicts the effect emerging technology will have on

the colleges and universities around the world. In particular, it identifies solvable, difficult and wicked challenges across a five-year time frame. It concludes that colleges and universities need to become more proficient in integrating technology into the curriculum. More specifically, HEIs need continued improvement in their course design, course materials and the relationships between learners and teachers (Alexander, Adams Becker, & Cummins, 2016:2). Martin, Wang & Sadaf (2020), concurs, and suggest improvement in the areas of online teaching: course design, course communication, time management and technical support. Blended learning, a solvable challenge, is particularly relevant for rural and remote students. Also, blending formal and informal learning could support the development of skills to meet twenty-first century requirements (Coldwell-Neilson, 2017:79).

2.3.5 Barriers to adoption of technologies

With the proliferation of educational technology, one would expect the widespread adoption of these tools in HEIs. However, this is not always the case, especially in Southern Africa, where attitudes and perception of students towards technology use and adoption was found to be diverse. Ooko, (2016), found that while a positive attitude may enhance understanding and acceptance of technology, negative attitudes remained a solid barrier to the use and adoption of technology. Also, ownership of devices and access to the internet were common obstacles to adoption amongst poor students (Mphahlele, Mokwena & Ilorah, 2021:9).

Watty, McKay and Ngo (2016:10), in their study of accounting educator resistance at an Australian university, found that time was the single most important barrier to technology adoption. Another study exploring faculty training needs towards adoption of educational technology for teaching (Crews, Brown, and Miller, 2009:13), agrees. They concluded that time pressure was a major concern. With already heavy workloads of lesson preparation, lecturing and assessments, educators are expected to use innovative digital tools to augment traditional teaching and now needs to find extra time to prepare and learn the new material to incorporate it with new educational technologies. Teaching becomes more challenging due to a lack of development opportunities, unfamiliarity with new technology and ever decreasing available time.

Other constraints include the lack of capacity and financial means of HEIs (Dougherty, 2015:317), the reluctance of faculty to engage in online teaching (Guri-Rosenblit, 2018:95), the prevailing conservatism in education, and the high cost of follow-up with current technology (Al-Zahrani, 2015:54), the absence of transparent policies and technical support (Kaeophanuek, Na-Songkhla, & Nilsook, 2018), unbundling of the professional responsibility and intellectual property concerns (Guri-Rosenblit, 2018:95).

2.4 Summary

This chapter has explored the relevant literature to further the researcher's understanding of digital literacy concepts and setting the argument for a study on digital readiness. The literature reveals a complex and fluid environment, with no agreed definitions on the key concepts of information literacy, digital literacy and digital readiness. Although key driving forces were found; advanced digital, communication and critical thinking skills for students, and innovations in educational technologies and better integration of technologies into the curriculum. Many barriers still exist that can curtail the adoption of technology in education. The literature stressed the importance of support for staff, specifically dealing with heavy workloads and the lack of staff developmental opportunities.

This investigation also explored and explained the theoretical lens that undergirds this study. The Technology Acceptance Model (TAM) is a simple and well documented model with high validity and is well suited to this study.

While this chapter set the foundation for this study. The next chapter will allow the author to arrive at a deeper understanding of how the stakeholders view digital readiness and more specifically how academic staff are integrating technology into their teaching and learning practices. It will detail the research methods to be used to gather empirical data, including details on the research strategy, data collection techniques, sampling methods and the role of the researcher.

Chapter 3: Research Methodology

3.1 Introduction

The purpose of this chapter is to present the research methodology for this qualitative case study regarding the digital readiness and technology adoption of faculty within a theological college setting. This approach allowed for a deeper understanding of the current digital practices at the institution and how academic staff are coping in a digitally mediated environment. The applicability of a qualitative case study approach for this study are discussed in-depth in this chapter. The research design, research paradigm, methodology, population and sampling, data collection, data analysis procedures and ethical issues forms part of the framework of this chapter.

3.2 Research Design

The Research design refers to the methodology, philosophy and methods chosen to explore an area of research. It is the actual planning and execution of a project and provides the blueprint to decide on what data to collect and how to analyze it (Leedy & Ormrod, 2013:74).

3.3 Philosophical Perspectives

Philosophical assumptions are the abstract ideas and believes the researcher has, and which influence the way they approach a research project (Creswell &Poth,2018:16). Interrogating one's philosophy about research is an important part of undertaking rigorous research that will stand up to academic review and scrutiny. For the purpose of this study, the researcher will explore the four main factors that generally guide research; ontology, epistemology, methodology and axiology. Whereas, ontology is concerned with the nature of reality, epistemology deals with the nature of knowledge and methodology explores the; why, what, from where, when and how data is collected and analyzed, while axiology relates to the role of values in research. These concepts are interrelated and influence each other. Sarantakos (2013:28), claims that one's ontology shape the reasoning of one's epistemology, and epistemology mediate the nature of methodology and methodology, in turn, suggests suitable research methods, designs and instruments. For this study the researcher has chosen constructivist perspective.

3.3.1 Ontology

Ontology is the philosophical study of being or reality. It is concerned with what constitutes reality; basically, what is (Scotland, 2012:9). For the researcher it is the explorations into the nature of reality, specifically what it means to be or exist (Lapan, Quartaroli & Riemer, 2012:7). Grix (2004) as cited by Mack (2010:11), suggests it is the "… claims and assumptions that are made about the nature of social reality,

claims about what exits, what it looks like, what units make it up and how these units interact with each other." What is reality and how can we understand it? In the qualitative paradigm, the ontological assumption is that there is not a single truth or reality, but multiple, differing realities (Ravitch & Carl, 2016:6). This study leans towards a relativist ontological stand.

Not only are the researchers faced with multiple realities, the participants of the study as well as the readers of the investigation also face a variety of realities. The researcher will thus be guided by their view of reality in the way they engage, understand and report on these multiple realities in the study (Creswell & Poth, 2018:21). According to Sarantakos, (2013: 27), when dealing with the nature of reality the researcher will be confronted with two ontologies; a realist and a constructivist. Depending on the researcher's view of reality, a realist ontology will lead to an empiricist epistemology, a quantitative methodology, a positivist paradigm and a fixed design. Alternatively, a constructionist ontology will give rise to an interpretivist epistemology, a qualitative methodology, several paradigms to choose from and a flexible design (Sarantakos, 2013:28). This study will adopt a relativist ontological stand. The reason for this is that in the constructivist paradigm, reality is socially constructed, and participants experience reality relative to the contexts they live in (Lapan, Quartaroli & Riemer, 2012:22). This is the case in this study.

3.3.2 Epistemology

Epistemology is concerned with the nature of knowledge and ways of knowing and learning about social reality. It answers the questions; what is the nature and forms of knowledge, how is knowledge created, acquired and communicated? (Mack, 2010:5; Lapan, Quartaroli & Riemer, 2012:7). It is concerned with what it means to know, that is, the view of how we acquire knowledge. It points to the relationship between the would-be knower and what can be known (Scotland, 2012:9), and as such reflects the views of what can be known about the world and how it is known. Ultimately, in a study like this, it is concerned with how the researcher acquires knowledge; how they know reality.

Creswell & Poth, (2018:21), state that the researcher needs to be clear about what their views of knowledge and how his knowledge claims are justified. Qualitative research is normally conducted close to where participants live and work. Subjective views, which are known through the subjective experiences of the participants, are collected. Intimate knowledge of the context of the research will aid the researcher's understanding of the views of the participants (Creswell & Poth, 2018:21). This study adopted a constructivist epistemology or paradigm.

3.3.2.1 Constructivism

For this study, the researcher decided that the appropriate paradigm for this qualitative case study will be interpretivism (also referred to as constructivism). It is regarded as the opposite of the positivist paradigm and seen as a reaction to positivism.

Constructivism refers to the individual's ability to construct meaning while interacting with the world around them. Lapan, Quartaroli and Riemer (2012:8), argues that for interpretivist, there is no single, unitary reality apart from our observations. Participants experience multiple realities. In addition, because of their uniqueness, individuals cannot be aggregated or averaged to explain phenomena. What they are alluding to is that people see social reality differently. People will interpret events differently resulting in multiple views (Mack, 2010:6). Indeed, viewed in this way, reality is seen as being mediated by our senses, therefore, without consciousness the world is meaningless. It is also individually constructed (Scotland, 2012:11).

Uniqueness concerns the researcher as well, and can influence research. The interpretive researcher's main task is to understand phenomena by assessing it's meaning, and the value participants assigned to it. They do so by asking open-ended questions, in their quest to build knowledge (Lapan, Quartaroli & Riemer, 2012:70). Interpretivism has its roots in *Verstehen* (understanding) of social life. It proposes an interpretive position and is contrasted with *Erklären* (explaining)where the focus is on causality. Verstehen relates to views, opinions, and perceptions of how people experience and express daily life (Sarantakos, 2013:30).

3.3.2.2 Limitations of constructivism

Whereas positivist researchers use scientific procedures for empirical verification, constructivists cannot generalize study results (Mack, 2010:10). Also, the validity of the interpretivist approach can be questioned, therefore this paradigm rejects a foundational base to knowledge as done by positivist researchers (Scotland, 2012:12). The ontological assumption of the interpretivist world view is subjective. Qualitative research is by nature subjective. For this reason, the researcher brackets their assumptions, by acknowledging their values, political and ideological views and how it may impact on knowledge and social reality (Mack, 2010:8). Also, because knowledge is created, its transferability is limited. In addition, the autonomy and privacy of participants may be compromised, participants also have limited control and is vulnerable. (Scotland, 2012:12).

For this case study the researcher employed an interpretivist paradigm to investigate and understand the digital readiness and technology adoption of faculty in a theological college. The interpretivist researcher's belief is that the social world cannot be interpreted through physical laws. For the researcher realities are social constructions of an individuals' mind, and therefore different, multiple realities are constructed within the different contexts within which participants live. Key to this is the assumption that a participant's experience can only be understood from the perspective of that participant. Therefore, with the emphasis on understanding experiences from the individual's standpoint an interpretivist paradigm is best suited for this study (Lapan, Quartaroli & Riemer, 2012; Scotland, 2012).

3.3.3 Research Methodology

Sarantakos, (2013:29) defines research methodology as a strategy of inquiry that translates ontological and epistemological principles into a set of directions of how research should be conducted. Similarly, Lapan, Quartaroli and Riemer (2012:70) views it as a blueprint or set of decisions. They further assert that research methodology are the procedures used to administer an investigation and provide a condensed understanding to others which is subject to inquiry, critique, and replication or adaptation to settings. Ultimately it is concerned with why, what, from where, when and how data will be gathered and interrogated (Scotland, 2012:9).

A qualitative framework was chosen for this study. In general, qualitative research is an inquiry process that explores social or human issues within a strict methodological approach (Creswell & Poth, 2018:326). The purpose of this study is to explore the digital readiness and technology adoption of faculty at a theological college, using a case study method

This process is interpretive and the researcher aims to capture the authentic responses of subjects to stay true to "specific social-historical contexts" (Neuman, 2012:89). The investigator aims to build a genuine picture of the way his subjects see, view, approach and experience the world and construct meaning of their experiences along with phenomena within it (Merriam, 2009:14; Ravitch & Carl, 2016:7). Qualitative research is warranted when researchers need to achieve a deeper understanding of the phenomenon, issue or case under study (Trochim & Donnelly, 2008:143). For the current study, the researcher explored subjects' experiences of the digital literacy practices at a college (the case of study). By obtaining the views of a diverse group of stakeholders, a rich picture emerged, making it possible to compare theory to practice. A few authors have proposed some basic characteristics of qualitative research that a researcher must be aware of (Merriam, 2009:13-19; Creswell & Creswell, 2018:181-182; Creswell & Poth, 2018:43-44). These include a natural setting. Qualitative researchers normally study phenomena in its natural

setting. This study takes place, as far as possible, face-to-face at the George Whitefield College in Muizenberg, Cape Town, South Africa. Secondly, the researcher is the principal investigator. Thirdly, inductive and deductive data analysis. The researcher adopted an inductive process as proposed by Merriam (2009:15), where the observations and intuitive gleanings of the researcher are used to build themes, categories, typologies or theory about the topic under investigation. Ravitch and Carl, (2016:249) cautions the researcher not to dismiss the inseparability of the two processes. They contend that most research benefit from a strategic integration of both inductive and deductive coding processes. Fourthly, focus on meaning and understanding. Fifthly, emergent design, meaning, that as the researcher gets a deeper understanding of the phenomena under investigation. The data collection may shift, or the questions may change to accommodate the perspective of the participants under study. Ravitch and Carl (2016:9) agrees when they say that "people's experiences and perspectives are deeply embedded in the contexts that shape their lives, and how people experience aspects of their lives, and the world is subjective and can change over time." Lastly, reflexivity, the researcher needs to understand and mitigate against inherent bias they bring to the study (Ravitch & Carl, 2016:15).

3.4 Targeted Population

The targeted population refers to those groups of participants that may exhibit the characteristics, which the researcher is looking for, and from whom the researcher will choose a small sample and who the researcher thinks will make a meaningful contribution to the study. (Lapan, Quartaroli & Riemer, 2012:83).

Selection criteria for this study were based on each participants' potential to add to the understanding of digital readiness and technology adoption at a higher education institution. According to Leedy and Ormrod (2013:215), subjects can be selected because they may serve a particular purpose. Or they may be selected because they have unique experiences, exclusive knowledge about a phenomenon, and live or work at a specific place (Ravitch & Carl, 2016. :128). The faculty and staff at George Whitefield College were selected to participate in the study because, as the primary stakeholders, they will provide expert witness to the investigation into digital readiness at the college.

Nine participants were interviewed, with six (66.6%) faculty and three (33.3%) non-teaching staff members (the IT manager, the help desk technician and an administrative assistant).

3.5 Sampling procedures

Sampling refers to actions made in relation to from where and from whom a researcher will collect the information needed to answer his research questions (Ravitch and Carl, 2016:126). The qualitative

researcher is more interested in selecting participants that can clarify and deepen the understanding of a phenomenon of interest to the researcher. Generally, a researcher has a population in mind when they embark on a research project but would only be able to collect data from a sample of the population. This decision is guided using a particular sampling method.

The two basic sampling techniques are probability and non-probability (Merriam, 2009:77). Probability sampling (simple random, cluster, stratified, systematic and multistage sampling) is the preferred method for quantitative studies. Non-probability sampling (including convenience and purposive sampling) is the favoured technique for qualitative research (Neuman, 2011:241-273).

For this study, a purposive sampling strategy was employed. This technique, also known as purposeful sampling, allows the researcher to collect data from sources, participants or cases that are relevant to the topic under investigation. Essentially, the researcher is looking for participants who can best answer their research questions. The reason for choosing this strategy was because the researcher wanted participants who are currently in full-time employment at the college and who engages with students, faculty and staff daily at GWC.

3.6. Research Instruments

The method chosen to collect data is as important as choosing a suitable research instrument. This study was concerned with capturing qualitative data, which was primarily collected using interviews. Interviews allowed participants to voice their opinions, views and experiences fully, while allowing the researcher to ask probing questions.

3.6.1 Interviews

The purpose of a case study was to describe, illuminate or provide insight (Lapan, Quartaroli & Riemer, 2012:251). Normally this will mean interviewing key informants in an environment about specific issues surrounding the case study. Stake (1995:67) describes an informant as “someone who knows a lot about [the case] and is willing to chat.” In other words, the interview is a structured conversation between the researcher and subject, during which meaningful stories are constructed (Neuman, 2011:342; Ravitch & Carl, 2016:146). Participants are encouraged to respond to questions from the researcher in their own words and to express their unique experience about the issues under investigation. In addition, face-to-face interviews allow for the recording of non-verbal communications like facial expressions and gestures that further enriches the qualitative aspect of interview data (Jupp, 2006: 157).

During this conversation the researcher established trust by sharing information about himself with participants to put them at ease and to establish trust and rapport. This allowed the researcher to discuss digital readiness and technology adoption issues in depth with the various stakeholders identified above.

For this case study, a semi-structured interview was chosen. Some questions were prepared beforehand and structured around the research questions. However, the interviewer remained open to new issues uncovered and followed up with questions to glean more information from participants depending on their responses and willingness. Qualitative interviewing, using semi-structured questions, allowed the researcher to organize and guide the interview, following a "unique and customized conversational path" with each subject or group of subjects, using probing and follow-up questions as required (Ravitch & Carl, 2016:154).

Interviewing different stakeholders yielded rich data that allowed for cross-comparisons of responses, encouraging diverse perspectives of similar digital readiness and technology adoption issues to emerge (e.g., views about digital literacy, perceived barriers, technology support needed, etc.). All interviews were recorded. This allowed the researcher to concentrate on the interview and further ensure that the data analysis is based on accurate data (transcripts). Transcripts are considered more valuable than interview notes and is indispensable for rigorous data collection and analysis (Ravitch & Carl, 2016:159).

It was envisioned that by exploring the diverse stakeholders' views of digital readiness and technology adoption, ranging from those who provide IT support (2) and Faculty (which included the academic training support (1) general faculty (4) a head of department (1)) and general administration (1), a rich picture will emerge that can enhance the ability of the college to respond to issues of digital readiness and technology adoption from a position of informed understanding of the issues of digital readiness. [Appendix D: interview Guide]

3.7 Data collection procedure

For this study at the college the following steps were taken:

1. Invitation to participants and informed consent signed.
2. In-depth (semi-structured) interviews held at convenient place for participants.
3. Interviews were recorded and transcribed within a day of interviews.
4. Follow-up; retuning a copy of transcript to participant for member-checking, and verify content.

a. [Formative analysis – researcher gets a sense of what data means and can tweak and refine interview questions going forward (Ravitch & Carl, 2016:225).]

5. Compare findings:
    a. contrast different staff groupings,
    b. literature review findings against case study findings
6. Describe data
7. Group themes and issues
8. Perform analysis – interpret what happened

3.8 Data Analysis

For the qualitative researcher data analysis is a continuous, deliberate and logical process of inquiry throughout the research process (Ravitch & Carl, 2016:217). Large amounts of textual data in the form of transcripts, field notes, observations are often produced during qualitative research and the process of systematically preparing and analysing the data is usually a laborious and time-consuming practice (Burnard, et al., 2008:429). For this reason, several computer-assisted qualitative data analysis software (CAQDAS) packages are available to lessen the burden of making sense of data (Merriam, 2009:195; Wong, 2008:18). One popular programme is NVivo, developed by QSR International (Melbourne, Australia), a major qualitative software developer (Wong, 2008:15).

However, computer programs do not analyse the data, they simply make the process easier, more flexible, accurate and inclusive (Burnard, et al., 2008:429). The researcher still has to "synthesize the data and interpret the meanings that was extracted from the data" (Wong, 2008:14). Ravitch and Carl (2016:259) warns researchers to proceed with caution when employing software. They advise that inexperienced researchers take some time to learn the manual techniques of data analysis, and to use software to aid the organization and sorting of the data. Thematic content analysis was used to encode the transcribed data. This will be discussed more fully in chapter four.

3.9 Validity and Reliability

Member checks (respondent validation) entailed asking participants to review and verify the contents of their transcriptions (Merriam, 2009:217). Peer review or peer data analysis review of emerging findings (Ravitch & Carl, 2016:260). In addition, an audit trail provided a detailed record of data gathering and

analysis methods, (Lapan, Quartaroli & Riemer, 2012:481), it allowed other researchers to check that the data analysis process led to trustworthy and valid interpretations (Struwig & Stead, 2013:181).

3.10 Axiology

Axiology is the philosophical study of values. It refers to the role of values in research. Qualitative research, as opposed to quantitative research, is value-laden. This can be seen as a limitation to the validity of the study. To counter this, the researcher needs to identify key values that might affect the study. For Creswell and Poth, (2018:21), this means the researcher has to report the values, biases and the value-laden nature of data. In this process, known as identifying one's positionality, the researcher positions themselves in terms of the context and setting of the research.

3.10.1 Ethical considerations

An important consideration for the researcher is the issue of ethics in research. Research ethics demand that participants and the data collected be treated with respect and honesty. Creswell and Poth (2018:54), concur, they implore researchers to show the necessary reverence for individuals and uphold welfare and justice where needed. An ethical approach also means researchers' behaviours are guided by a code of conduct to ensure that strict ethical protocols are upheld (Struwig & Stead, 2013:68). A code of ethics and supervisor oversight provide exemplary behaviour for a researcher, but it ultimately depends on the researcher's moral code, integrity and values (Neuman, 2011:143).

Creswell and Creswell (2018:92), recommends that researchers distribute informed consent forms to participants that explain in plain and simple language the requirements and time commitments for the study. The form must include the identity of the researcher, the purpose of the study, the undertaking that data collected would be kept confidential and would be anonymised, that participants can withdraw at any point during the study. Informed consent is the key component of any research project. Lapan, Quartaroli and Riemer, (2012:33), says that informed consent means that participants know what to expect (informed) and agree to partake (consent). For this study the letter of invitation and request to participate included the same information listed above (Appendix B).

To assist researchers to deal with ethical issues, most research organisations require ethical clearance before the data collection phase of a study. Generally, research plans need to be submitted to an institutional review board (IRB) from where the researcher is receiving his qualification (Creswell & Creswell, 2018:91). This is to ensure that in the process of gathering data no participants are placed under undue risk in the study.

For this study the researcher sought ethical clearance from the University of Cape Town before embarking on data collection. The Faculty of Humanities at UCT delegates responsibility to ensure ethical conduct during research, to each department within the faculty. For this research the Department of Knowledge and Information Stewardship (DKIS), ethics review committee reviewed the study and vetted all the instruments for quality and ethical integrity, before ethical clearance was granted.

3.11 Summary

This chapter outlined the research method used to answer the research questions. It included the procedures followed to conduct the study. The aim of this study was to understand the digital readiness and technology acceptance of faculty at a theological college. A discussion of the research design, the sampling and protection of study participants, data collection, interview questions, data analysis and research ethics outlined the specifics of how the study was conducted. The next chapter will focus on the data analysis process and describe the findings of the research.

Chapter 4: Presentation of Findings

4.1 Introduction

This chapter contains the findings of the case study described in the previous chapter. This study examined the digital readiness and technology adoption within a theological college setting. The research concentrated on three groups of stakeholders: faculty, students and staff at the George Whitefield College. This chapter is organized in terms of the interview guide developed to answer the specific research questions. The findings resulting from the answers were divided into seven themes; Technological awareness, Skills acquisition, Current practices, Management Support, Drivers of technology adoption, Barriers to technology adoption and Training needs for technology. For each theme a description will be provided, followed by an appropriate quote from the data.

4.2 Description of participants

Nine participants were interviewed. Table 1 presents the demographics of the participants as described in chapter three of this study. All the stakeholders of GWC are represented in the sample, with six (66.6%) faculty and three (33.3%) non-teaching staff members.

Table 1: Demographics of participants interviewed

Participants	Age	Education	Race	Gender	Mode
Participant #1	35-45	MA	Black	Male	In-person
Participant #2	35-45	PhD	Black	Male	Zoom
Participant #3	55-65	PhD	White	Female	Zoom
Participant #4	35-45	PhD	White	Male	In-person
Participant #5	45-55	MA	Black	Male	Zoom
Participant #6	35-45	-	Colored	Male	Zoom
Participant #7	45-55	PhD	White	Male	Zoom
Participant #8	35-45	BA (Hons)	White	Female	Zoom
Participant #9	25-35	Diploma	Black	Female	In-person

4.3. Data Analysis

This process allowed the researcher to become familiar with the data, coding, categorizing and developing themes from the analyzed data.

4.3.1 Become familiar with the data

Due to time constraints, the researcher decided to forego the use of a CAQDAS and tackled the data analysis manually. This meant reading and re-reading the transcripts. The main aim was to become very familiar with all the data. After transcribing the interviews, the researcher spent time reading each of the transcripts. During the first reading the aim was just to find out what the participants were thinking about. This entailed marking, underlining, circling words or making notes in the margins about issues that emerge from the transcripts. The researcher then wrote a reflective memo after getting familiar with each transcript.

The next stage was to reduce and organize the data into meaningful pieces. The data was analyzed with the research questions in mind. Using the reflective memos and research questions the first five transcripts were coded using both inductive and deductive thematic analysis. Not every piece of the text was coded, only those that was deemed relevant or contained relevant data about the research questions. Aided by some ideas about coding from the literature, new codes were generated or modified using highlighters and pen and paper.

After the initial batch, the rest of the transcripts were coded using Microsoft Word and Excel to identify and extract codes to be further analyzed. Questions or clarifying seeking questions were added to the interview guide after the seventh interview. This stage of the coding process provided 263 codes.

4.3.2 Search for themes

The next stage in data analysis for this study was to reduce the number of codes and to look for patterns that can be organized around themes. Nine themes were identified. These were: awareness, skills acquisition, current practices, management support, driver of technology adoption, barriers to technology adoption, training, technology adoption and future vision.

The themes were then reviewed and modified. Two themes seemed related; skills acquisition and training and it made sense to combine the two. However, it was realized that skills acquisition referred to something that had happened already and that training pointed to some future action. Also training theme should be discussed after the current practices theme to show the reader why the researcher decided on the training theme. After revision of the themes the data was organized into seven themes;

Technological awareness, Skills acquisition, Current practices, Management Support, Drivers of technology adoption, Barriers to technology adoption, Training needs for technology.

Defining themes helped the researcher to think about the relationship between the themes. A mind map was constructed to analyse and explained the relationship between the themes. At this moment it was still a fluid construct and may change as the research is written up.

4.4 Themes that emerged from the data analysis

The following section will describe the seven themes that emerged from the data analysis. The first theme is technological awareness.

4.4.1 Technological awareness

This theme dealt with the awareness of digital technology at the college amongst faculty and staff (Figure 4.1). Sub-themes include; technological innovations, digital literacy, digital readiness and social media.

Figure 4.1: Word Cloud: Technological Awareness. Source: researcher

4.4.1.1 Technological innovations

Technological innovations are used to describe the knowledge of stakeholders about innovations and digital technology. Most of the participants focused their answers of the technology used in the classroom.

These include most of Google and Microsoft applications like Google Classroom (a learning management system), and Google Meets.

> *"You can use the video platform for free, their document processing suite, we can use that Microsoft does the same thing so you'll get Office online for free. You get Outlook emails so that's similar to Gmail. So, what you what Google gives you Microsoft gives you*." (Participant #7, p3, 9).

> *"there's a lot more that you can do with those kind of learning platforms, in terms of communication, as well as students and staff sharing and hosting groups." (Participant #2, p2, 24).*

The ability to Live streaming YouTube videos was seen as a useful innovation for education by two of the participants. Others referenced online educational resources as technological innovations. One shared their view of the online resources they use, which includes; HaithiTrust (a digital library platform), Internet archive and Open Library *"… have a lot of good historical and theological works free works available free online."* (Particpant#8, p3, line5).

> *"… include online teaching and learning tools like Zoom and Google meets. Also live streaming, YouTube videos that can be inserted into class lectures online. (Participant #1, p2, 5).*

> *"then I would go to specific websites, maybe where you can just find theological material. So like for example, You, you … we talk about the gospel coalition, basically for theological issues. Uhmnn." (Participant #9, p3, 24).*

The online mode of teaching was also seen as a major innovation, because it allows lectures, meetings and conferences to happen despite not being able to meet in-person.

> *"what about online system... like having things happen online, like, lectures, meetings, conferences, uhmnn, and like what we do right now, we're not sitting face-to-face, but we can still do this meeting online." (Participant#9, p3, 8).*

> *" … technological impact equals improved scholarship. That's probably improved scholarship just generally because there's better access to more sources." (Participant#3, p3, 31).*

Some participants shared further detail of what they liked about online learning, particularly as it related to theological education. Noteworthy, innovations included theological-specific technologies like Logos and the library of Christian Classics. Logos is particularly helpful;

> *"the Logos Bible Software, so they quite comprehensive they have eBooks, … they have platforms for conferencing, you know church, hosting church, streaming church services,"* (Participant #2, p2, 8).

Some participants mentioned how technology can influence academic relations and student potential across the continent.

> *"to have a far and wider reaching impact … a vast number of students across the continent,"(Participant #6, p2, 23).*

> *"a huge impact in theological education across the world, and especially across Africa, where previously, the model for theological education has always been residential" (Participant #4, p2, 14).*

> *"much more internationally connected because of modern digital technology" (Participant #5, p2,26).*

> *"we can we can be in touch with other theological students from around the world, you know, you can just go on zoom, then you are discussing theological issues with someone in America" (Participant #9, p4, 9).*

4..4.1.2 Digital literacy

This sub theme dealt with the participant's perception of the concept of digital literacy. Two of the participants were unfamiliar with the concept, and had to think about it first. One stated bluntly; *"Well I haven't come across a definition of digital literacy" (Participant #1, p1, 18).*

> *"Now, I don't know what is, what is it? So maybe I know -about literacy then we're talking about the ability to use those equipment "(Participant#9, p2, 23).*

Another participant made the connection through the 'literacy' concept and defined DL as the ability to use web/internet academic resources.

> *"… it's being able to use online resources, online academic resources." (Participant #6, p1, 18).*

The other participants defined digital literacy in terms of the ability, knowledge, access to or confidence in the use of technology. These technologies were in the form of computers and online resources. One faculty member described digital literacy as competency and knowledge about digital resources. For them it was a way of connecting and being productive at work.

"... understanding of digital literacy, … digital literacy is being aware of, or having available knowledge on how to use technology (Participant #2, p1, 16).

"when I think digital literacy is the ability to be able to use from computers and online and internet resources, where you can navigate in a way that makes your work, simple. …, so it's the ability to be able to use digital platforms for personal growth and personal use (Participant #3, p1, 28).

"Digital literacy, just in general, is about how confident and capable one is using technology. I think in a digital age, yes (Participant #4, p1, 28)

"it's how to function, how to operate an internet how to access information using digital sources, how to search, how to basically how to use the digital databases and things like that (Participant #5, p1, 15).

"That's almost like defining, like a language literacy. Uhmm, for me the term is like a basic concept or knowledge of using a IT resource or online service or basic understanding of any IT resource (Participant #7, p1, 10).

"… your ability to communicate through digital means … that would include your ability to work with digital platforms as well." (Participant#9, p2, 6).

4.4.1.3 Digital readiness

How would you define digital readiness? The question explored the participants' knowledge of digital readiness. Most of the participants described digital readiness in terms of personal or institutional willingness to engage with digital technology. For one participant, it was the ability to read online books, for another it was attitude towards technology.

"We'll I think that means; the ability or the capacity of someone to read books, but on a digital format," (Participant#1, p1, 32).

"*… I imagine it means how capable one is and how, … the attitude one has towards using technology, and, how ready one is for innovation*." (Participant #4, p2, 6).

Some participants shared that it was a foreign concept, but described it as being able to know your way around digital resources.

"… well it's to be able to … use, digital resources, and … to know your way around … digitized resources, information." (Participant #8, p1, 26).

"I haven't heard that term before. But I imagine it means how capable one is and how, the attitude one has towards using … you know the digital world is in technology, how, how ready one is for innovation … (Participant #4, p2, 8).

"Readiness? If you can use the technology or platform with confidence, and you have no doubts in your ability to use a platform or any digital ... uhmm" (Participant #5, p1, 27).

For many participants, it was about having technology available and knowing how to use it. One participant believed it was the role of the college to provide the technology and to ensure users were properly trained to fully utilize it. Another participant shared a similar view that the college should be able to provide the equipment and infrastructure to utilize available digital technology.

"When I say digital readiness will be in terms of the institution where it has put systems in place that makes whether working online, for example, easy for the stuff, like things like …" (Participant #3, p2, 3).

"…you need access to it first of all, and then you need the know-how of how to use it. For a college like this. It's one thing to have digital technology available out there in the world but are you equipped at the college, to be able to, … to be able to use databases and so on." (Participant #5, p1, 27).

4.4.1.4 Social media.

Participants described the role of social media in response to the question: 'What role, if any does social media play in the preparation and delivery of lectures?' Some Participants expressed caution towards the use of social media. One participant does not engage with social media anymore. They found that, because they had a multicultural, multi-ethnic friends circle things said on social media could sometimes lose its meaning and could be easily misunderstood and create unnecessary tension.

"… I'm no longer on social media, so that's a conscious decision, due to the phenomenon that's increasingly being called context collapse. It was just increasingly too difficult to communicate effectively to any one context, because you're always liable to be misunderstood by some, and I found that just distracting and unhelpful," (Participant#8, p3, 13).

Another participant shared that they had been conditioned to view social media as wicked and were discouraged to use it. She, however, admitted that social media have some benefits.

"The problem is; as theological students were always taught that social media is not very godly … I think you can get different views from social media that can help you to engage with the world." (Participant#9, p4, 33).

It is useful to gauge the thinking and mood of people. Also, it gives an idea of the different world views people have. One participant described social media as the way most people receive their daily news or other popular information. They find it useful to scan social media to find the unfiltered thoughts and views of people. As a tool, it can be particularly helpful with sermon preparation.

"... and I guess that helps you to think about how to address issues. For me, for at least if I'm going to be preaching, for instance, or thinking about a specific topic, it is helpful for me to know what people generally think." (Participant #1, p3, 1).

Another, concurred, that social media was a good tool to keep track of what happened in the digital space, but that it was not their aim to be a digital influencer.

"I would sometimes screenshot things from Facebook, from discussions that I've seen and, obviously I would anonymize things. But, certainly it is a, it can be good way to be aware of what's happening in the digital space. I certainly don't think; I have no interest to be an online influencer." (Participant #8, p3, 22).

Another found the use of social media helpful to communicate with students and maintain relationships when everything went online. It is particularly helpful for research purposes and they have used illustrations from Tik-Tok and Instagram. They found it relevant to their teaching about connecting with people from different backgrounds, and across cultural and ethnical lines.

"I've even used illustrations from Tik-Tok or Instagram, because that's relevant to what I'm teaching, I'm teaching people how do you connect with people of different contexts." (Participant #2, p4, 22).

However, some participants believed that students wasted valuable time on social media, especially those students struggling to use other digital technologies. These students, it was felt, could have used some of the time spent on social media to learn how to use technology, maybe by watching a video of an appropriate topic on YouTube or learn to use some of Microsoft applications.

"They are very, very literate, because, based off the traffic usage and the file logs. You can see there's a lot of social media activity happening … at a portion of the student body. That usually,

most of the time have problems trying to work [their academic course work] … if you can go on Facebook and you can spend 15 minutes on Facebook. You can go on your computer and spend that 15 minutes to learn Microsoft Word." (Participant #7, p12, 12).

This theme showed that participants saw the benefit of online teaching and learning, but many were not familiar with the concepts of digital literacy and digital readiness. Social media was seen as beneficial with cautious engagement.

4.4.2. Current status of technological knowledge and skills

This theme dealt with participants' perception of their acquisition of technological skills. Sub-themes included: knowledge and skills transfer, collaborated/ shared learning, self-learning and formal instruction

4.4.2.1 Digital knowledge and skills acquisitions

Most of the participants acquired digital/ technology skills with a combination of self-learning and cooperative learning. Two participants admitted their lack of appropriate technological skills and found it both limiting and frustrating. One participant focused on their own lack of technological skills. The respondent is acutely aware of their shortcomings in relation to using digital/online resources. Another participant expressed themselves as having a low skills base. Being unfamiliar with technology creates stress and feelings of inadequacy.

"I'm limited myself as a person, I don't know. I don't know much of technology. I still need to catch up," (Participant #6, p2, 35).

"… I have very little skill on that. No one's ever sat down and told me, it's overwhelming and hard and irritating. So I would say I'm probably like on the lower side of technological skill." (Participant #9, p6,24).

4.4.2.2 Collaborated/ shared learning

Four participants indicated that peers assisted them when trying to master new technologies. One participant at college learned to use theological tools with the help of other students. Another shared their trial-and-error learning style. They would trouble shoot a learning project, basically break it down (deconstruct), learn the component parts and then put it together again. They complemented this with occasional questions to peers about digital technology to build on their skill. For one faculty member, peer learning appears to be an important component in their digital skills acquisition.

"… but I think here at college I learned to use more., how do you call it, specific software's for theology, such as Logos, err and I learned to use them here err we I mean like friends sharing these err knowledge about these software's "(Participant #1, p3, 27).

"So I think in terms of acquiring them, it was just me being myself and trying to break computers, but ended up not breaking them, knowing so much information about them. So that's how I specifically acquire them." (Participant #2, p4, 8).

"… in terms of faculty, there has been a support system, at least a peer to peer supporting you, when you are struggling to use the digital platforms at the college… I remember a couple of my colleagues just helping me to navigate it." (Participant #3, p4, 18).

Some participants spoke about the support from other faculty members and how during online teaching they missed out on this important relational sharing and learning experience. One participant found it extremely challenging to operate from home in online teaching mode, because at college (during face-to-face lectures), they could pop into another faculty member's office to ask for help with a digital technology problem.

"When we worked at the college I could run to a colleague's office and say, hey just show me something for two minutes, and that's how I gained. how I gained, I gained knowledge now I'm stuck at home." (Participant #6, p4,35).

4.4.2.3 Self-learning

This sub-theme relates to the perception of participants that they learned about technology on their own. Six participants spoke about how they basically taught themselves through trail-and-error about emerging technologies. One participant had their first contact with computers at bible college and basically taught themselves to use digital technologies. Another participant talked about being self-taught through trial and error. They learned through the sink or swim method.

"So what does … self-taught myself? No one really sat me down to teach me about how to use anything. I would in the evening, I was giving myself time to be working with the computer, like in the evening specific times. And then that use is how I got to know how to use computers, which then led me into the understanding and the use of digital. (Participant #, p1, 31).

"I was one of those people who are thrown in the deep end and unnecessary sink or swim. and I managed to, there was never an agreement on how to use technology, I never had a course on how to use a computer." (Participant #3, p4,16).

Participant #7 spoke about being mainly self-taught, with some formal computer training at a Technical and Vocational Education and Training (TVET) college. Persevering with trouble shooting abilities were their main method of learning skills. One participant had some IT training at university but were basically self-taught. They felt they had an aptitude for technology and is curious about any new emerging digital technologies, which they would try out to find how it works. When they are confronted with a technology challenge, they troubleshoot until they find a solution. Similarly, participant #8 was also self-taught, they had some IT training at university. Their technical aptitude makes it easy to acquire skills.

"do it yourself and keep doing it until you get right type of thing. So it's more of a troubleshooting, as you go along, and then I learn to know the skill." (Participant #7, p7, 12).

"I've always had an interest in technology, and I did a bit of IT at university. So, I guess, that gave me a bit of an edge in terms of technology, but it's just something that I'm always excited about new tech, always wanna try it out myself." (Participant #5, p4, 28).

"… basically, I just tried to work things out myself, researching online and asking friends. That's how I've learned most things." (Participant #8, p7, 34).

Participant #9 completed a basic computer course, but mostly self-taught by exploring the use of laptop and online resources independently.

"I learnt. Uhmnn, … When was it, in ... 2009. Yeah, 2009 I actually attended a course, a computer courses … I then started exploring myself when I was using the laptop more and more … So mostly, it's about exploring on my own, you know when you get a device you just explore." (Participant #8, p6, 31).

4.4.2.4 Formal instruction

Three participants spoke of the role of formal instruction in the acquisition of technology skills. One participant who grew up in city said that IT instruction was part of their school curriculum. Another shared details of their formal training which has been ongoing since secondary school. As a faculty member they had received in-service training with regards to technology use in education from several institutions.

"I was initially a secondary school teacher, way back when. [laughing] My initial training and everything was through my school. And then at every university or every college that I taught at, with the exception of the current one, George Whitefield College, I've always … there's always been ongoing tech, technology training for faculty. [ok] So, I … So I've always been able to; … if it's, for example, research methodology, and they would have been taken through a training in using the latest data collection or data analysis tools even if it wasn't necessary relevant for me." (Participant #4, p4,15).

Participant #5 described their familiarity with technology from a young age, through their formal training received during Postgraduate studies, and training in the use of research tools and databases.

" I suppose many of the skills just came as a result of using computers from a young age and one thing I must say, at least for postgraduate students, is in your methodology training to learn how to search databases to think how to search, well, how to access sources that are available but not always clear on how to access them, which databases should you look to other accessible at the college to make people aware." (Participant #5, p4, 16).

In summary, whereas a few participants received formal instruction in technology at a secondary or tertiary institution, most of the participants acquired their digital knowledge and skills through a combination of independent and collaborative learning.

4.4.3 Current practices

Current practices describe the way faculty prepare and teach using available technology. It also explains practices, processes and methods involved in learning and assessment.

4.4.3.1 Teaching (faculty) purposes

Most of the participants use Google Classroom for projects and lecture notes, also most of the resources needed by students are uploaded to Google Classroom. Google groups are used to make notes and have chats amongst students and lecturer. In the online mode, Zoom is the preferred tool for online video lectures. Email and WhatsApp are used for communication or to clarify content on Classroom. One participant shared their use of Google Classroom and Zoom as part of a blended approach to teaching. They pre-record lectures via Zoom and then load it to Google Classroom for students to interact with in their own time. The content is then discussed when the class meets online for their lecture.

So I use blended, … a blended mode, where I will record content via zoom, and then I'll upload that on Classroom. And then we also meet via zoom and discuss it." (Participant#8, p5, 23).

Another participant indicated that they use Zoom, Zoom Whiteboard and Microsoft PowerPoint. Most of their resources are uploaded to Google Classroom for students to engage with. They mainly use digital resources to prepare lessons. They are very confident in their ability to use the available technology in their teaching and does not pre-record classes. They do live classes which they record and then makes it accessible through Google Classroom. The students can then view these in their own time after class as revision. This is also their way of saving time and coping with the workload.

> *'…so I do use Zoom, …. I do use PowerPoint presentation … and I do use digital resources as well, like eBooks to Prepare my lessons …... So, I do live classes. And then I record those live classes, which makes it easier for me because I don't have to record videos beforehand." (Participant #4, p3, 10-14).*

Significantly, it emerged that some faculty were engaged in a sort of continuous reflection/review that led to better quality lectures and classes, which in turn led to better engagement from students and improved knowledge transfer from lecturer to student. Pre-recording lectures allowed one participant to review the way they sounded and moved when giving a lecture. Which resulted in continuous improvement of their teaching.

> *"using digital online teaching methods, you think hard about your content and your presentation of your content, because it is in your face, you can review it, you can check again and see what I can improve" (Participant #3, p3, 22).*

Technology use has also encouraged critical engagement with online resources. It forced one participant to learn more about the technology. Technology has made them better teachers by considering the different learning styles of students from diverse contexts.

> *"You have to think and learn about adult educational practices, and think about not only how to use the technology, but actually you have to understand more of the education theory and how different people learn in different contexts," (Participant #8, p8, 1).*

Some participants, however, still find it challenging to use online resources. One participant described how they still had to walk to the library to consult physical resources for lecture content, they summarize their research with pen and paper, before presenting it via Zoom to the class. Another participant details how his supervisor uses technology during their regular student and supervisor meetings. During this time, they share a document, connect on video call, and have the document open on his laptop while chatting and making changes to the shared document. This is a live process and saves a lot of time. This excellent

use of technology sharply contrasts with using paper. Printing a copy making changes and emailing a copy back to supervisor.

> *“We can use technology to have a shared document, where both of us, without being in person can look at. We normally connect, on a video call, and then on your computer you also have a document that he’s also looking at, at the same time, and we can comment there or have chats, about the document that we are sharing" (Participant #1, p5, 12).*

4.4.3.2 Assessment

This sub-theme described practices, processes and methods involved in assessment. The use of technology makes marking and other assessments easier. Feedback can also be more comprehensive, because comments are imbedded in the script. A physical page would not allow the same comprehensiveness.

> *“I can, in my own time, at my place, write down comments on a specific page. Gives like enough comments to the students about the specific feedback." (Participant #2, p5, 25).*

> *"quickly type responses rather than writing out in red pen for example. You can type and give more feedback more easily" (Participant #5, p3, 28).*

One participant emphasized the utilization of online assessment. It can be graded and processed easily. The flexibility provided by technology means they are not bound to location.

> “when you do assessments via technology, there's an element of you can mark those anywhere in the world.” (Participant #3, p3, 20).

In this sense, technology made life a bit easier. Another participant shared their perspective on the use of quizzes to gauge the learning of students and make sure they are learning and not just consuming information. They use a game-based learning platform called Kahoot for quizzes. This way, students get immediate feedback of the learning in a fun and competitive way.

> *“where you can get the students on their phones, to punch in like A, B, C, or D answers, and then you can actually have a live tally as to who's winning the quiz up on the screen, which is actually a lot of fun.” (Participant #8, p4, 10).*

'Well, we, I've never use quizzes or Google forms. Not to teach, I've used that of cause, but not to, not in my module but, I do use the … zoom whiteboard when I'm teaching…" (Participant #1, p3, 27)

"… my business to follow … new innovations in online learning, constantly looking at … the big issue, I think at the moment is getting feedback from students in online learning to the level that we have from face to face …" (Participant #4, p2, 14).

One participant acknowledged that they mainly use paper and pen in-class assessment but grant that there are benefits in receiving assignments and doing assessments online.

"then I just think from marking, it's much better to mark online, it's much better to have everything submitted in one place, which, you know - classroom generates its own mark lists at the end when everything's submitted." (Participant #6, p7, 21).

However, some see online assessment as risky for students because of possible equipment or hardware failure and losing internet connectivity. When this happens, students are left to figure things out for themselves, because lecturers are not available to answer questions because your computer acts up.

" also your computer can just freeze, and you don't know what to do. And there's is no lecturer to ask any question. And what if there's something that's not clear, you have to you have to figure it out on your own." (Participant #9, p6, 12).

Current practices indicated that faculty were forced to adopt a blended approach to teaching. With more time for reflection, better quality lectures meant improved learning experiences for students. Some participants struggled with technology adoption, most agreed on that assessment was easier and more comprehensive when done online.

4.4.4 Management Support

This theme described ways in which college management support staff and faculty to train and adopt technology. It includes the sub-themes of faculty perception and direction and strategy.

4.4.4.1 Faculty perception on management support

When asked about the role of college management in supporting and enabling the adoption of digital technology, most of the participants offered very brief and guarded answers. Two participants believed that the college management should provide the necessary infrastructure and technology access for faculty and students. In this regard they were very positive towards the support received.

"I think the college management team has … done an excellent effort of making the core network infrastructure, Wi-Fi access … readily available." (participant #8, p10,3).

One participant indicated that there was vast improvement in the provision of internet/Wi-Fi connection since he arrived in 2014, and that a healthy relationship existed between management and IT department. However, some participants expressed disappointment at the level of support provided, while at the same time acknowledging the challenges faced by the college.

"… I'd say it hasn't been at the level that I expect, well, I don't expect college to be as supportive you know. I don't know because, maybe there is a lack of human resources to help with that. We only have one IT guy, main IT guy. And he's got some people who help him but, I'm yeah I feel like it makes it hard for him to be, to help everyone when it comes to technology." (participant #5, p6, 16).

4.4.4.2 Direction and strategy

Several participants noted the need for a clear course and vision for technology adoption at the college. One participant expressed the lack of communication from management about the role and use of technology in teaching at the college. For another participant, indecisiveness and the lack of clear guidelines for technology integration needed attention. His experience was that interventions were mainly done in an ad-hoc or reactionary manner.

"… actually we, we need the college … to have a clear vision … for what we want, and resource that. Rather than just say; well we're going down this road, we're going to spend the money on the physical network infrastructure." (Participant #8, p12, 10).

"So I think, first of all, college management has to come up with a clear vision and strategy for digital integration, not just ad hoc or reactionary. And that needs to be communicated upfront." (Participant #3, 24).

One participant emphasized the need for encouragement and creating opportunities for personal and professional development, while providing direction and vision for faculty about technology adoption.

"So just having that kind of input, and then also obviously having just encouragement input, because obviously it's a new thing, it's difficult. Some of us struggle with it. So just to be an encouragement voice.… it would be good for them to communicate very clearly and motivates for

the use of digital literacy so like, why are we doing this, what are the benefits. This is why we feel we should do this; this is our vision for this." (Participant #7, p8, 30).

Most participants envisioned some form of faculty engagement to identify what technological skills or knowledge is needed.

"we just have to work out what we want and where we're going and where we are. What our skills are, what our skills need to be" (Participant #8, p12, 18).

This theme indicated that faculty and staff enjoyed a healthy work environment with adequate support from management. Some participants expressed the need for a clear and well-communicated vision and strategy for the adoption of technology.

4.4.5 Drivers of technology adoption

This theme dealt with the perception of participants regarding the drivers for use and adoption of digital technologies in education (Figure 4.2). It includes the sub-themes; Covid-19, lack of (digital) technology skills and knowledge and perceived usefulness of digital technology.

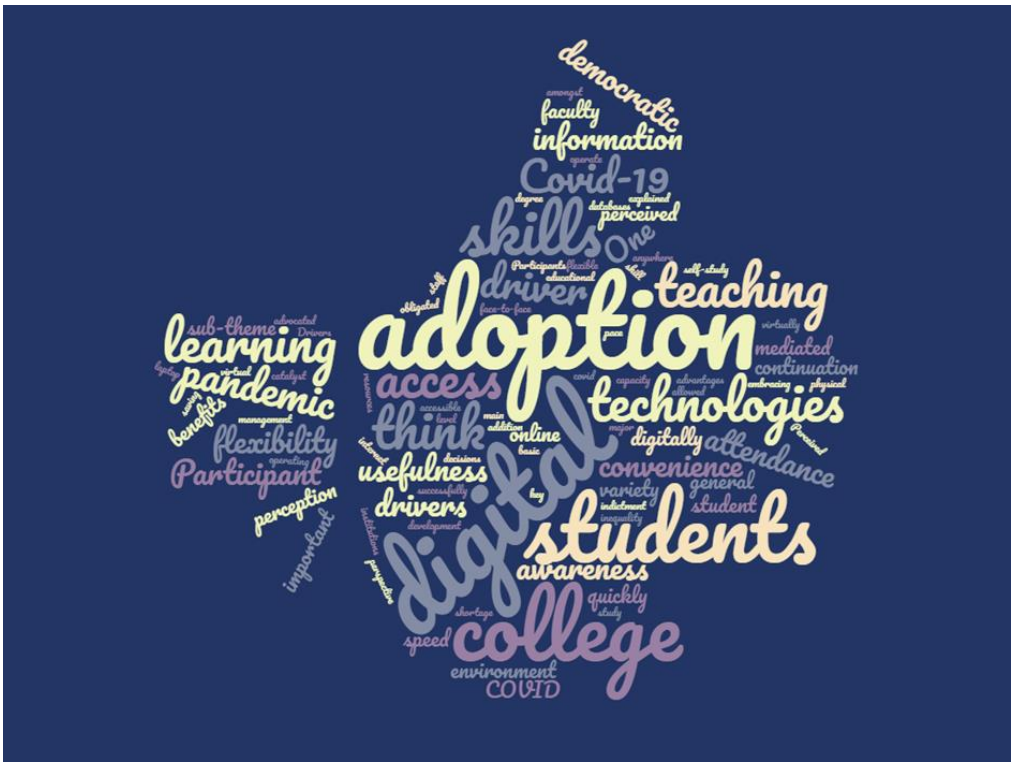

Figure 4.2: Word Cloud: Drivers. Source: Researcher

4.4.5.1 COVID-19

This sub-theme dealt with how the pandemic influenced decisions about technology adoption at the college. COVID-19 was seen as the major driver for technology adoption, by many participants.

> *"… I think that until [COVID -19] started, management did not think about technology much but, I think since [COVID-19], they've started thinking more about it." (Participant #4, p6, 28).*

Several participants shared that teaching continued, and although it moved online, students could join classes from anywhere in the world. One participant's perspective was that the college was obligated to move from face-to-face classes to virtual attendance, and had to adapt quickly to this way of teaching.

> *"I think before the pandemic the [not audible] --- the use of technology for teaching, was very basic. Due to the pandemic educational institutions in general including George Whitefield College, has been forced to move from physical attendance to online attendance, so that has forced us to --- forced the college and student body to adopt these technologies." (participant #1, p2, 25).*

As participants shared the benefits of the continuation of classes during the COVID-19 pandemic, several cited that it allowed for flexible learning; learning that took take place at the student's pace and time.

4.4.5.2 Lack of (digital) technology skills & knowledge

This sub-theme relates to the perception of participants regarding their level of technology knowledge and skills. Many participants felt that the lack of skills is an urgent indictment for the adoption of technology at the college. One participant highlights the need for skills development amongst students unfamiliar with digital technology.

> *"I think well for some students, it will be certainly challenges coming here who have not been used to using certain technologies, maybe or even if they're able to basically use the internet, they're not as adept as how to find information quickly and how to use databases and so on." (Participant #2, p4, 1).*

Another participant regarded awareness of technology as key to technology use and benefitting from it. They felt that many students who come to college might be aware of the existence of digital technology but was limited in their knowledge and skills to operate in a digitally mediated environment. For other students, technology resources were available, but they are unaware of its existence. This participant therefore advocated for the college to create awareness.

4.4.5.3 Perceived usefulness of digital technology

This theme dealt with the degree faculty and staff believe using technology would be beneficial. Several participants mentioned the advantages of technology adoption. One participant explained that giving broad access to those previously not able to access knowledge; essentially makes the learning process more democratic.

> *"… Uhmnn, obviously it gives you a wider access to information. It makes … the learning process more democratic, … democratic, and there is the capacity for knowledge to become more accessible to those that would … information that they didn't have access to." (participant #8, p8, 16)*.

For another participant convenience and speed are the drivers of technology.

> *"… in general it's convenience and content consumption. Like, you have to do less and less every day on your laptop, and from problems that we have it's like why do you have to click three times, and we can't click once"(Participant #7, p9, 16).*

Most participants admitted that variety in teaching, flexibility for both faculty and student and saving time are for them the main drivers of technology adoption.

> *"… just the variety in your teaching … it caters [for] students who enjoy learning on their own, or self-study …, and so it gives students more flexibility, and also gives myself more flexibility." (Participant #8, p7, 10).*

While COVID-19 was seen as a major driver for technology adoption, some participants viewed the lack of skills and knowledge as a close second driver for adopting technological tools in teaching and learning. Most agreed that convenience and versatility also drives technology adoption.

4.4.6 Barriers to technology adoption

This theme explains the hindrances to the adoption of technology. Participants were asked: "what are the factors affecting your integration of technology into the preparation and delivery of lectures." The answers were divided into four sub-themes (Figure 4.3): Generational attitudes, Digital divide/inequity, unfamiliarity and fear about using technology and interaction (social).

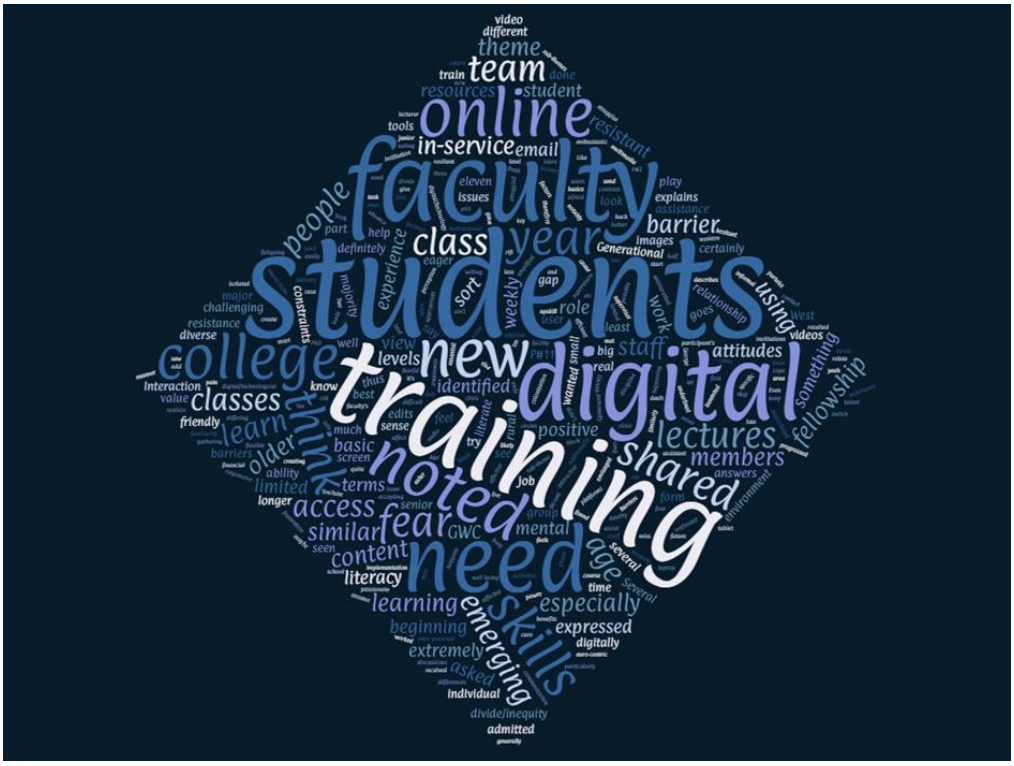

Figure 4.3: Word Cloud: Barriers. Source: researcher

4.4.6.1 Attitudes about age

A few of the participants mentioned the role age plays in resisting technology adoption. One participant felt that generational attitudes are one of the major barriers to technology adoption amongst faculty. They advocate for the recruitment of fresh younger talent into senior management who might be more responsive to adopting new emerging technologies.

Another participant noted that because most faculty are not digital natives; they might need to work harder to incorporate technology into lectures and will thus be more resistant to accepting the role of technologies in their teaching.

One participant shared a similar view that for some faculty, age might be an issue, because they are unfamiliar or lack the confidence to engage with digital technology, they may resist.

But I want to assume there is a scenario where someone else is hesitant. And I will say, it will go back to the answer that I give, which has to do with where the person is coming from, which age group they are in. Because if you are in a certain age group, technology is a really daunting task for you. So daunting, do you don't want to get close to it." (Participant #2, P5, 33)

Several participants felt that older faculty were more fearful of technology than younger students, who were more willing to try new technologies. However, one participant does not agree that older faculty struggles more with technology and is less knowledgeable about the digital environment. They felt that some junior faculty members also struggle with the use of technology.

> *"No, it's not that actually younger age means automatically means better digital literacy, I mean I'm the youngest I'm definitely not the most literate, with digital literacy. So, yeah." (Participant #8, p8, 23).*

4.4.6.2 Digital divide/inequity

This theme dealt with perceptions of inequity of access or use of digital technology. Many of the participants identified huge differences in ability to use and access to technology amongst students entering college. This was amplified when students from cities and those from rural areas were expected to perform using the same resources.

> *"So often cities, those who are in cities will be quite technologically advanced, and many of them digital natives. But, when we're dealing with people from rural areas, because they will be experiencing bandwidth problems, they are less able and less capable and from less technologically advanced environments " (Participant #4, p4, 35).*

There was also a big gap between skills needed and the technological abilities of students.

> *"… like there was definitely a big gap [between] the skills students [possesses] and the skills they needed, and they had to upskill very quickly." (Participant #8 - p7, 1).*

Students' digital skills were as diverse as the student population, with some quite savvy and others extremely unfamiliar, being at opposite ends of the digital technology skills and knowledge spectrum. One participant emphasized the inequality in terms of digital literacy and access to digital resources.

> *"… some are digitally literate and some ain't. You have to be patient, very patient with the students. And some don't even have computers. Where others have a phone, a tablet and a laptop." (Participant #7, p, 17).*

Another participant shared a similar experience, where *"differing levels of digital compe*tency" and "*different levels of access to the technologies*" makes it extremely challenging for students to partake in basic educational activities due to financial constraints *(Participant #8, p8, 31).* A few of the participants

noted that some students did not possess their own devices when they come to college, but were expected to be able to use technology at college.

4.4.6.3 Unfamiliarity and fear about using technology

This sub-theme explains feelings of mistrust and fear towards digital technology. A few participants have expressed that unfamiliarity with technology may cause frustration and mental anxiety and add to further resistance towards digital technology.

> *"It can also create a mental block and then you feel overwhelmed and all the things you have to learn then you feel stressed and then it's an unpleasant experience." (Participant #8, p8, 3).*

One participant felt that some students and older members of faculty were afraid to use new technology and this leads to unnecessary stress. Also, unfamiliarity may lead to fear and mistrust. For one participant fear and mistrust was a key barrier to technology adoption at George Whitefield College. This mistrust was further exacerbated by the perception that most of the technology was euro-centric and not suitable for African consumption. He felt that resources were mostly produced/published in the West for Western consumption.

> *"So people tend to have this mistrust of digital platforms …, I think there's been a lack of user friendly, African specific products. It's not user friendly. It's mostly designed for people more in the West". (participant #3, p3, 5).*

4.4.6.4 Social Interaction

This theme deals with issues of interpersonal contact. Some participants felt socially isolated when they were at home pursuing online teaching and learning. One participant shared that technology use limited human interaction, and was fatiguing when one had to communicate via a screen.

> *" the lack of inter-personal interaction? I think it's, it's draining generally draining on all involved both the lecturer and on the students to stare at a screen all day" (Participant #5, p6, 6).*

Another participant missed the after-class discussions that normally happens informally after face-to-face classes, which was an important component in the learning process of students. Additionally, one participant noted that online classes also affected the way students do fellowship, which was an important discipline at the theological college, and took place around communal eating, praying and gathering.

> *"So, I think technology has limited physical interaction …. in theological circles, we value fellowship and all those kinds of things, but now, if everything is happening online, for example, then it means*

there's no physical interaction, there's no longer that fellowship that we used to." (Participant #8, p3, 35).

Participants also reported that they found it difficult to get a sense of the emotional well-being of the class. During normal face-to-face classes they could sense when the class became restless and could employ techniques to refocus the teaching or switch topics, this is extremely challenging when doing online teaching. A few participants also admitted that being unfamiliar with online teaching and preferring traditional teaching methods, made them resistant to technology adoption. Many desired the return to face-to-face teaching.

"I think there are people who really didn't like the online interaction with the students they wanted to be in the classroom doing things the old school, real way, they want real relationship. And so for them, that was a barrier because they no longer were involved in the kind of education, work, that they envisaged as the best kind." (Participant #9, p8, 6).

For the majority of participants age was seen as the dominant barrier to technology adoption. Unfamiliarity with technology tends to spread fear and mistrust which is further exacerbated by inequities in technology skills, access and ownership of devices. Social isolation also made participants hesitant to embrace new online technology.

4.4.7 Interventions for technology development

Participants were asked;

- In your view, are faculty equipped meet the demands of a digitally mediated educational environment, do you think there is a need for training and what would this look like?

The categories of professional development of faculty, students need for training, orientation to technology and instructional designer/technician resulted from the answers.

4.4.7.1 Professional development of faculty

Most faculty members would like to see ongoing training and development. One participant felt that most faculty are adequately skilled, and therefore did not need training.

"At the current level, not really. Because, I think the faculty, that we have at the moment, at least from my knowledge are really are fairly well aware of. While familiar with how to use digital technologies available to them…" (Participant #5, p6, 26).

This was in sharp contrast to other participants, who identified training for faculty as urgent and likely one of the barriers for faculty's resistance to the adoption of technology.

> *"Yeah, I think there's a big need for training … to help the faculty, learn about learning and learn about how students learn in an African context … It'll probably like to see them … send some people on courses to learn how to do things like I had," (Participant #8, p10, 19).*

One participant lamented the lack of in-service training for faculty; especially technology and research methods.

> *"… there's always been ongoing tech, technology training for faculty. [ok] So, I've always been able to [attend]; … if it's, for example, research methodology, and they would have been taken [us] through a training [module] in using the latest data collection or data analysis tools even if it wasn't necessary relevant me," (Participant #4, p4, 15).*

They had received in-service training from all the previous educational institutions they worked at, before coming to GWC. They underlined the absence of appropriate training for faculty. They feel that most need some training on the effective use of PowerPoint in online teaching.

> *"There's a tendency only to use PowerPoint. [laughter]. They have … you know; they call it death by PowerPoint. So, I think; PowerPoint is useful technology, but, training is needed." (Participant #3, p6, 11).*

Another participant felt strongly about the need for training on how to use technology, especially new emerging technologies. The technology is available, but those who need to use it are unfamiliar with it. This goes for both students and faculty. They had some form of in-service training at another institution, but missed the opportunity for training at GWC.

> *It'll probably like to see them [GWC] … send some people on courses to learn how to do things [with technology], like I had," (Participant #7, p10, 19).*

One participant felt that all new faculty should undergo some sort of orientation on the use of technology in teaching and learning.

> *"… it's the lack of knowledge, or lack of skills on the part of the faculty member, at least in my case." (Participant #5, p5, 11).*

Some participants acknowledged the need for some kind of digital/technological training, but were unsure what this training will look like.

> *"Personally I do. I think I do need training in technology. I know very little to such an extent that I don't even know what I should be trained in. I don't possess enough, enough information of what's out there of the technological possibilities." (Participant #6, p6, 2).*

> *"I think there does need to be some training? … how that will work in a college that has budget constraints, I don't actually know, and I don't have the wisdom of Solomon on this one." (Participant #7, p10, 32).*

A few participants admitted the need for some professional development, maybe not as basic as that for students, but some awareness projects on new emerging technologies that might play a role in education.

> *"So I think it will be good for faculty and staff to have [some] training, maybe not as basic [as] how to use a laptop, but just training whereby they are given awareness of new things [digital tools] that are coming, because I feel like there's always, there's always something new coming up." (Participant #9, p9, 32).*

One participant viewed training as essential. "*Like 100% Yes, there is a need for training*." (Participant #1, p9, 2). This participant observed that diverse levels of digital/technology skills mean the need for different level of training, training should thus be geared towards individual needs and preference.

> *"So, training, that yes they would need to be training, and this training would probably be best done if it met people where they were at." (Participant #4 p8, 3).*

4.4.7.2 Students need for training

Most of the participants felt that students need ongoing training and support. One participant's experience with students let him to believe that they needed ongoing support in terms of technology. He noted that some students were still struggling to find their feet, and the academic year had progressed to August already. Another participant noted something similar; that even with a weekly information email, some students are still struggling with IT issues late in the year.

> *"… and when, August, September comes a, lots of students still don't know where to go for help. Even though, we send that weekly, email. It's just something I have to live with," (Participant #7 p8, 14)*

Some participant noted that students need for assistance with technology could be addressed in the form of a very basic IT course which could happen during the annual orientation session. The reason for this was that some students came to college with limited skills and knowledge. At college, most of their research and class projects will require some familiarity with technology.

> *"So for some students, they are coming straight from high school where they're just conducting physical lectures or lessons, and they come here where - almost everything demands them to be on their laptop or computer. And most of them don't have any idea how to use laptop or computer." (Participant #9, p8, 34).*

> *"… I actually want to do a course in …. developing and constructing online material, online courses, in which I'm able, … I want to be able to build that interactive platform. with Moodle, and with zoom we get the interaction over zoom, but we don't have the same interactivity that you get in some of the more creative programs." (Participant #4, p4, 26).*

Other participants shared similar observations for training during the first year a student come to GWC.

> *"I think it will be helpful, at least at the beginning of the year to train, even if it's for a day or two, doesn't have to be long, even at one day to train students especially those who might not be as familiar with these technologies how to use it well" (Participant #5, p5, 36).*

However, some felt most of the students have been exposed to and possess the needed digital skills at college.

> *"I think most of the students have been exposed to technology, I think there are few cases where they don't know how to use a computer, but those cases are, they few. I think the vast majority of the student body knows or come already with these skills." (Participant #1, p3, 34).*

Another felt that students need to be more proactive in trying to learn technology skills on their own. There seems to be an apathy on the part of some students to learn the basics at the beginning of the year, because some students still struggle half way through the year. There was consensus amongst participants that most students need ongoing support and that students should be constantly reminded with refreshment courses. However, it was noted that the busy schedules of faculty and IT staff might be a constraint to ongoing training of students and staff needing refresher modules.

> *"Maybe we have to time and again, say that, but can we in our schedules be able to do that?"(Participant #2, p3, 37).*

4.4.7.3 Orientation to technology

This theme describes the expectations of the use of technology expressed by the various stakeholders. Many participants expressed a positive orientation to technology.

One participant shared how he experienced the power of technology in the way he communicated with his PhD supervisor, whom he had never met face-to-face, only online. Their supervision relationship has been made possible by using digital communication channels like; Zoom, Skype, WhatsApp and email.

> *"We can use technology to have a shared document, where both of us, without being in person can look at it. Meaning that we normally connect on a video call, and then on your computer you also have open a document that he's also looking at, at the same time, and we can comment there or have chats, err on our document that we are sharing." (Participant #1, p5, 12).*

Some participants noted that while they relate to the positive use of technology, they do not really make use of it. One participant gave the impression that he does not see the value or is unaware of the worth of these digital tools.

> *"Personally I prefer physical books, but having digital books available is easy when you're working in a weekend and you quickly need access to that source." (Participant #5, p5, 6).*

> *"I can imagine an area with people, certainly try to use interactive stuff, YouTube, certainly, I think things like, being able to display videos and multimedia in class, has become something that's much more common and easily doable. But for me personally I don't use much of that, in my own classes." (Participant #4, p3, 12).*

Another participant shared that she was not very enthusiastic about technology, but will do only what was needed in workmanlike fashion. She was aware of the usefulness of technology, but was content that other people be passionate about it. Minimum engagement with technology and a means to an end is how this participant viewed technology.

> *"And it's just a pain it's like you're so in some ways I just want to use technology just to get the job done and I don't care what it looks like or how just to get my job done." (Participant #9, p9, 36).*

4.4.7.4 Instructional designer/technician

A few participants when asked about their vision for the future, mentioned the need for some sort of instructional/educational technologist to assist faculty in the production of online content like videos, lectures etc. One participant emphasized that a teaching assistant or a small team could help faculty cope

with the demands of creating online content for lectures, as well as keep them updated with the latest educational technologies. Similarly, another participant noted what was needed were investment in the best technology available; particularly useful would be a recording facility where faculty could record lectures aided by a team of professionals who edits and incorporate audio and images.

> *"I mean college could have like a mini kind of recording studio, where lectures are recorded … by a team that knows how to do filming … where lecturers come to record their, their classes, with professionals, a team? with equipment and then there will be a decent team, like the team that edits the video, and incorporate like images and PowerPoint altogether in one video, "(Participant #1, p6, 18).*

> *(… and get professionals in and just come and get us skilled, and have a team, alongside us like that, his job was just to manage our digital learning platforms. And that solves all the problems and constantly worked on it to make sure was updated, and then he would also then teach us…" (Participant #3, p9, 21)*

> *"So, you don't faculty spending … all their time recording videos and learning how to digitally do this and that, … you want to make use that as a college but it doesn't mean every lecturer has to become … an information technologist." (Participant #8, p12, 4).*

Most participants saw the need for ongoing professional training and development for faculty and some form of introductory intervention for students. Many expressed a positive orientation to technology and the need for further investment in instructional technology.

4.5 Summary

This chapter contained a description of the findings that emerged from the semi –structured interviews with faculty and staff. Through thematic analysis of the case study, seven themes were developed.

The seven themes resulting from this study summarize the contributing factors that motivated for digital readiness and technology adoption at George Whitefield College: Technological awareness, Skills acquisition, Current practices, Management Support, Drivers of technology adoption, Barriers to technology adoption, and Training needs for technology.

The fifth and final chapter provides a conclusion delineating the main findings of the study, the recommendations and implications for future research.

Chapter 5: Discussion of Findings, Conclusions and Recommendations

5.1 Introduction

The overall aim of this study was to advance an understanding of digital readiness and technology adoption at a theological college, particularly in relation to the perception of faculty, staff and students of the role of digital technology in teaching and learning. The specific research objectives were, to:

- To determine the current digital literacy practices at the George Whitefield College.
- To identify the driving forces and barriers for Digital Readiness and technology adoption.
- To explore the stakeholder's views on Digital Readiness.

This concluding chapter will discuss and summarize the findings of this study. It will also present the conclusion and recommendations. The following section is the discussion.

5.2 Discussion of the findings

The findings are discussed under the following headings: current digital literacy practices at the George Whitefield College, driving forces and barriers for Digital Readiness and technology adoption, stakeholder's views on Digital Readiness.

5.2.1 Current Digital Literacy Practices

- Research Objective 1: To determine the current digital literacy practices at the George Whitefield College.

5.2.1.1 Skills acquisition

In this case study, most of the participants claimed to possess the appropriate skills to survive in the highly digitized educational environment. These skills were acquired mainly via shared learning. While many could acquire skills independently, some participants thrived with peer assistance. Other studies noted that peer assistance can influence participants to adopt technology into their teaching and learning (Nicolle, 2005:259). Those who learned independently progressed through trial and error. Many of these participants entered college with limited computer or technology education, with a few participants only learning about computers when they entered tertiary education. It can therefore be assumed that the college has a role to play in student's acquisition of technology skills.

Previous studies exploring skills acquisition emphasized the role of faculty in the student's acquisition of digital literacy skills and cautioned that digital literacy skills are much more than finding, evaluating and

using information. It involves communication, cooperation and collaboration. Students needs to be able to engage in socially diverse environments and be creators as well as users of information (Brown & Mayisela, 2015:2). Furthermore, faculty are advised to employ digital technologies to create scenarios that simulate real-life problem solving and the development of marketable communication skills, key requirements for graduates (Dougherty, 2015:317).

Technology skills, specifically digital competencies are basic requirements at tertiary educational institutions. Getting everyone on the same skills level are difficult and requires specific interventions from HEIs. One study, exploring first-year student's interaction with digital literacies at the University of Cape Town, concurs; it recommended that HEIs be more proactive in using learning activities to enhance the acquisition of digital content creation practices of students. (Mayisela, 2016:248).

5.2.1.2 Teaching

The literature shows that to enhance the learning experience of their students, faculty needed to be aware of the available technologies in the educational environment. (Watty, McKay & Ngo, 2016:10-11). Yet, this study showed that, in practice, this was not always the case. While most of the participants agreed that technology led to a flexible and convenient way of learning for students, faculty's knowledge of available technologies was incomplete. Previous studies indicated that faculty are sometimes willing to try new technological tools if they think it would improve their teaching and learning (Bennett, 2014:10). However, the majority of faculty in this study used the Google Classroom Learning Management System (LMS) to upload projects and lectures for students and used the Zoom video conferencing tool for online lectures without a comprehensive knowledge of online tools, software tools and classroom tools. Lecturers could be missing out on providing a good learning experience to students (Crews, Brown & Miller, 2009). Other studies have also associated having the knowledge and experience to use mobile devices and tablets with increased use of collaborative learning and evaluation tools like "co-evaluation and peer-to-peer assessment" (Timmis, et al.2016: 461).

One positive result was that some participants became more reflective and learned more about their teaching habits, which led to better quality lectures and discussions during class. This is in line with a previous study by Bennett (2014:9), which indicated that when faculty knowingly invested the time to understand and evaluate digital tools, their students learning experiences are enhanced and their teaching and learning practices improve even though they didn't set out to become digital practitioners

5.2.1.3 Learning

Participants agreed that technology led to a flexible and convenient way of learning, especially the ability to view the material before and after lectures. Participants found that students could work at their own pace. Also, communication was not time-bound, student participation was made easier, assessments was more transparent, giving feedback was convenient and plagiarism could be checked effortlessly.

The literature aligned with the view that technology use is beneficial to student learning. As in the current study, previous studies have also noted that flexible learning could support the development of skills to meet twenty-first century requirements (Coldwell-Neilson, 2017:79). However, some studies indicated the need for continued improvement in course design, course materials and the relationships between learners and teachers (Alexander, Adams Becker, & Cummins, 2016:2). Other studies concurred, and suggested improvement in the areas of online teaching, course design, course communication, time management and technical support (Martin et al., 2020), creating diverse learning environments that enhance learner control of learning by encouraging the uptake of flexible mobile learning which could contribute to "transformation of higher education from instructive teacher-centred to active student-centred learning" (Bere & Rambe, 2016:22).

5.2.1.4 Assessment

Most of the participants considered feedback a key component in teaching, learning and assessment. Assessments were more convenient for faculty as it allowed time to imbed it in the scripts and could be done at a time and place convenient for the participants. Similar findings were demonstrated in a study by Timmis, et al (2016:460), who added that assessments could happen in different sites over diverse timescales with the aid of technology.

The current study also found that technology allowed for creative ways to assess knowledge. One way of doing this is the integration of formative and summative assessment, in which classroom testing can be linked or integrated with summative assessment data. In this way feedback from students can be combined with feedback on results from lecturers (Timmis, et al., 2016:460).

5.2.2 Driving Forces and Barriers for Digital Readiness and Technology Adoption

- Research Objective 2: To identify the driving forces and barriers for Digital Readiness and technology adoption.

5.2.2.1 Driving forces

The literature review identified the advent of the fourth industrial revolution and the realization of the internet of things (IoT), advanced digital information skills and appropriate digital tools as key drivers for technology adoption (Schwab, 2017:18). In this study lack of digital technology skills, perceived usefulness of digital technology and COVID-19 were identified as key barriers. (Most of the participants of this study viewed variety in teaching, flexibility for both faculty and student and saving time as key drivers of technology adoption).

Not surprising, COVID-19 was seen as the main catalyst as it allowed for the continuation of classes, which, even when done virtually was seen as a positive driver for technology adoption. The COVID-19 pandemic also forced faculty to transform and embrace synchronous and asynchronous technologies in a short period of time, while requiring students to become agile digital practitioners (Martzoukou, et al, 2021: 16).

Students saw the shortage of digital skills and lack of awareness of technologies as the drivers of technology adoption, while for faculty and staff the broad access was an important counter to digital inequality. The perceived usefulness of technology was also viewed as a crucial driver for embracing digital technology by several participants in this study. This is in line with the principles of the Technology Acceptance Model (TAM), which describes how participants approach and finally adopt new technologies (Davis, Bagozzi and Warshaw, 1989:983). For participants, perceived usefulness of technology meant that they believe the technology will help them improve work performance. In this study participants showed a willingness to engage and adopt digital technologies, but were cautious. Their decision to adopt technology was hindered by their unfamiliarity with some of the emerging digital tools.

5.2.2.2 Barriers

The literature review highlighted many barriers to the adoption of technology, including age (Anderson & Perrin, 2017:10), digital inequality (Castaño Muñoz, 2010:44), lack of capacity and financial means of HEIs (Dougherty, 2015:317), the reluctance of faculty to engage in online teaching (Guri-Rosenblit, 2018:95), the prevailing conservatism in education, the high cost of follow-up with current technology (Al-Zahrani, 2015:54), and the absence of transparent policies and technical support. The main hindrance is the lack of time (Watty, McKay and Ngo, 2016:10; Crews, Brown, and Miller, 2009:13).

In this case study, age was seen as a major barrier to the adoption of new and emerging technologies. This aligns with, Anderson and Perrin (2017:10) who suggests that more mature users lack the confidence in

their own abilities to explore and become proficient in the use of new technologies. For example, they mention in their study that only 26% of older online users claimed to be able to use computers, smartphones and other digital tools needed to explore the internet. In addition, most of the older users needed some form of assistance to start using digital tools. In this study, while older participants were seen to avoid new technologies, younger participants also struggled to learn the new technologies.

Another barrier identified in the current study was the digital divide. Many participants acknowledged the rift between students from urban and rural environments in terms of their ability to use and access digital technologies. Lembani et al (2020:83), concur when they concluded that the access to basic digital tools and services were skewed towards students residing in urban areas. In addition, researchers who studied students in developed and developing countries, found that students in developed countries used digital online technologies mainly for leisure activities and real-time communication, whereas in less developed countries online technologies were mainly used for educational purposes or to communicate with other students (Castaño-Muñoz, 2010:47).

Participants tended to avoid technology because of fear and mistrust due to not being familiar with technology. While some participants avoided technology because of mental anxiety and fear, others chose to shun it due to perceptions of digital colonization. Avoiding technology further disadvantage already marginalized students, as they fall further behind, and the students who engage with digital tools and the internet are the ones who experience the most improvement in their educational performance (Castaño Muñoz, 2010:49).

A few participants, notably senior faculty members shared that the lack of face-to-face time made them resistant to adopting new technologies. The missed informal interactions after class and the lack of fellowship amongst students made some participants resilient to technology adoption.

5.2.3 Stakeholder's views of Digital Readiness and Technology adoption.

- Research Objective 3: To explore the stakeholder's views on Digital Readiness.

5.2.3.1 Technological awareness

This theme dealt with the awareness of digital technology at the college amongst faculty and staff. Sub-themes include; technological innovations, digital literacy, digital readiness and social media.

The responses of the study participants about their technological awareness reflected the diverse understanding of technological innovations amongst participants. In this study, the most of the respondents referenced; technology used in the classroom, online educational resources and online

teaching. Most of these innovations mentioned could not be seen as innovations anymore, they were standard technological tools used by most academic institutions today. Interestingly, none of the participants referred to the requirements of the Fourth Industrial Revolution and no one mentioned any emerging technologies like; adaptive learning, AI/machine learning or open educational resources. A recent study by Pelletier et al (2021:259), indicated that Artificial Intelligence (AI), Blended and Hybrid Course Models, Learning Analytics and Open Educational Resources (OER) are key technologies and practices that will have a huge influence on teaching and learning in the future.

Digital literacy (DL) is a fluid concept. This could be seen by the responses given to the question: *can you define digital literacy?* Some were unfamiliar with the concept. Most of the participants could figure out a definition because they were familiar with the 'literacy' part of the concept. Consistent with earlier definitions of digital literacy by Gilster (1997), most respondents defined DL in terms of the ability to use computers and online resources, a one-dimensional view compared to the multiplicity of literacies (Eshet-Alkalai, 2014:94), normally associated with the use of digital technologies. Digital literacy should be defined in terms of familiarity and aptitude with digital tools, critical thinking and social awareness of technology. The literature emphasizes the importance of viewing DL as an umbrella concept that includes a diverse a range of practices, including computer literacy, information literacy, media literacy, communication literacy, visual literacy and technology literacy (Brown, & Mayisela, 2015:4).

Another key term the participants were asked to define were digital readiness. While only one participant found the concept foreign, most of the responses focused on technology, ability and infrastructure. Previous research focusing on e-readiness defined it in terms of preparedness to engage with the information and knowledge society (Kashorda & Waema, 2011:59). In another study digital readiness is defined in terms of the ability to interact knowledgably and safely with online technology (Horrigan, 2014:2). For three of the participants the college was the vehicle for digital readiness. Only one participant referred to one's attitude towards technology. A positive attitude would make technology adoption easier and responsive to digital technology.

Social media was seen as helpful by the majority of participants. Only two participants expressed apprehension about using social media. Even with their caution, these participants agreed that social media played an important role in the lives of faculty and students. What was interesting was that only one expressed a negative view of social media. Most saw social media as the ideal vehicle to assess the thoughts and feelings of groups and to use this contextual knowledge to provide appropriate talks, sermons or lectures.

Previous studies undertaken referred to a lack of critical thinking and problem-solving skills while students engage with technology (Guri-Rosenblit, 2018: 94). A few participants, while not viewing social media in a negative light, felt that students could make better use of their time. Many of the participants in this study, while being savvy users of social media tools, did not always use these tools for educational purposes.

5.2.3.2 Management support

This theme described ways in which college management support staff and faculty to train and adopt technology. It includes the sub-themes of faculty perception and direction and strategy.

Participants were careful and thoughtful when they answered questions about management support. A few participants positively commented on the role of management, while some noted the need for better-quality support. This study is consistent with other studies discussing the adoption of technology by faculty (Dougherty, 2015:314), which calls for institutional support and support from deans and college administrators. A study that investigated faculty readiness to teach online by Martin, Budhrani, and Wang, (2019:113) found it helpful to offer support in the form of high-quality online instruction. In addition, where faculty were new to online teaching, they felt that they needed technical and pedagogical support as well as assistance with time-management strategies.

While, participants were mainly positive about management support, they felt that the college lacked a clear vision and strategy for digital integration. Also, participants wanted to be consulted and given opportunities to engage with management on technological issues, and be kept updated on management decisions regarding digital technologies for teaching and learning.

5.2.3.3 Training Interventions

The participants highlighted the significance of training for faculty and staff when engaging in new and emerging technologies. Participants were asked; *In your view, are faculty equipped meet the demands of a digitally mediated educational environment, do you think there is a need for training and what would this look like?* The categories of professional development of faculty, students need for training, orientation to technology and instructional designer/technician resulted from the answers.

While the most of the participants wanted ongoing training and development for faculty and staff, some individuals felt this was irrelevant as faculty were already adequately skilled. Other participants saw the need for in-service training and thought this need was urgent. Most of the participants, were eager to receive some professional development especially in the digital technology space. Ng (2012: 1077),

concluded, in his study that with adequate knowledge of digital tools, faculty can improve their own teaching, and by demonstrating its benefits and use to students, influence their learning in a positive way. Likewise, in this study, faculty saw that appropriate skills and understanding in technology tools would have a positive impact on their teaching and the learning of students

All the participants noted the need for student training and support. As with previous studies participants of this study felt that students need to be able to retrieve relevant information to write assignment and need to be instructed in critical thinking, synthesizing ideas and concepts from different kinds of resources (Brown, 2000:39). As digital natives most of the students would benefit from building a collection of tools and cognitive abilities to help them navigate the technologically oriented educational environments (Ng, 2012: 1077). Several agreed that technology training at the beginning of the academic year would be a good start, with periodical refreshments modules throughout the year. For some participants the reactionary manner in which students learn about technology was worrying, they felt students need to be more proactive in developing digital skills.

While, several participants noted the benefits of technology in enabling flexible teaching and learning, a few were unaware or uninterested in the available technology. Some had a positive view of technology, while a few was content with minimal interaction with it. Most participants were eager to engage with digital tools, but several felt they needed some sort of assistance to become efficient users of educational technology.

5.3 Conclusions based on the findings

5.3.1 Research Objective 1:

To evaluate critically the current digital literacy practices at the George Whitefield College.

The first objective was to evaluate critically the current digital literacy practices at the George Whitefield College. The findings in the previous chapter contains rich descriptions of the digital literacy practices at the college. This study found that in terms of the current digital practices; skills were mainly acquired in a collaborative manner and that Faculty's knowledge about emerging digital educational tools is incomplete.

5.3.2 Research Objective 2:

To identify the driving forces and barriers to Digital Readiness and technology adoption.

The second objective was to identify the driving forces and barriers for digital readiness and technology adoption. Theme 4.4.5 in the findings chapter provided a comprehensive report of the driving forces and barriers as identified by the participants in this study. The COVID-19 pandemic was seen as the main catalyst to for digital readiness and technology adoption, and the main barriers to technology adoption were age and digital divide.

5.3.3 Research Objective 3:

To explore the stakeholder's (staff, faculty and students) views on Digital Readiness.

The third objective was to explore the stakeholder's views on digital readiness and technological adoption. This objective was met as a rich picture emerged of the participants' views of the study. There is limited awareness of technological innovations amongst participants. Definitions of concepts of DL and DR were diverse. Management support were positive, but needed to be broadened, and the college needed a clear vision and strategy for technology adoption.

5.4 Recommendations

The findings of this study raise implications for practice and theory. The following are the recommendations from this.

5.5.1 Recommendations for Future Research

Future research may integrate these findings of digital readiness and technology adoption. Against this background, the following areas are recommended for future research.

- Comparative study exploring the level of digital readiness and technology adoption at the theological colleges in Cape Town could be a potential for future research.
- A quantitative study comparing the levels of digital skills during first year and third year after the introduction of a basic technology skills module could be another study to explore. It is recommended that the living lab methodology be used as the main research method.
- Answering the Research Question; how has COVID-19 impacted/ widened the digital divide and how are HEIs in the Western Cape/South Africa intervening to close the ever-widening gap.
- Another angle to explore, may be to investigate the impact of COVID-19 on the adoption of blended or hybrid models of course delivery in theological education.

5.5.2 Recommendations for Practice

- College management should consider developing a clear vision and strategy for technology integration in teaching and learning at the college, taking into account the digital inequalities of students enrolling at the college.
- College management should encourage peer and collaborative learning strategies at the college.
- Management should consider hiring an instructional technologist to assist the faculty with skills and knowledge development in the areas of teaching in a virtual environment, course design and blended and hybrid models of learning and teaching.
- Faculty should consider the incorporation of game-based learning and assessment and should explore the integration of formative and summative assessments.

5.6 Summary

This study on the digital readiness and technology adoption of faculty and staff found that the levels of knowledge and skills were diverse, although some participants were adequately skilled, many would benefit from a skills development plan. Participants enjoyed peer learning experiences as well as independent knowledge building endeavours.

This study has contributed to an understanding of the digital readiness and technology adoption experiences of faculty and staff at a theological college. Further research projects (see 5.5.1) suggested would enhance the understanding of HEIs stakeholders and provide more strategies to address the current limitations to digital readiness and technology adoption.

The proliferation of new emerging technologies like Artificial Intelligence (AI), Blended and Hybrid Course Models, Learning Analytics and Open Educational Resources (OER) are evidence for the need to rapidly upskill staff and faculty. The ownership of skills development is primarily on the individual, but with a clear vision, strategy and policy, developed collaboratively with stakeholders, HEIs can significantly impact the digital readiness and technology adoption environment.

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Appendices

Appendix A.: Letter for permission to perform study on College.

Department of Knowledge and Information Stewardship

University of Cape Town

Private Bag X1, Rondebosch, 7701

21 June 2021

Dr. Jonathan More

RE: Requesting research access in your organization (George Whitefield College)

I am a Masters student in the Department of Knowledge and Information Stewardship at the University of Cape Town. I am conducting research on the digital literacy practices of faculty and staff members at a theological college.

Technological innovation in higher education challenged prevailing thinking about the way faculty teach and students learn in a digitally mediated learning environment. (Alexander et al., 2017; Wineburg et al., 2016; Guri-Rosenblit, 2018; Kaeophanuek, Na-Songkhla, & Nilsook, 2018).

I will invite individuals from your organization to participate in this study. I have identified a few faculty members and support staff to include in this study. If they agree, they will be asked to take part in a semi-structured interview of 30-60 minutes. Participant's responses will be audio recorded.

Participants will be asked to give their written or verbal consent before the research begins. Their responses will be treated confidentially, and identities (their names and the name of the organization) will be anonymous unless otherwise expressly indicated. Individual privacy will be maintained in all published and written data resulting from the study.

The research participants will not be advantaged or disadvantaged in any way. They will be reassured that they can withdraw their permission at any time during this project without any penalty. There are no foreseeable risks in participating in this study. The participants will not be paid for this study.

All research data will be preserved anonymously for reuse by other researchers. The project has been granted ethical clearance by the University of Cape Town. Please find attached the ethical clearance certificate. All ethical issues will be strictly observed.

I therefore request permission in writing to conduct my research at your organization.

Should you require more details about the study, please feel free to contact me or my supervisor.

Your sincerely,

Collin A. Majackie, mjccoloo1@myuct.ac.za, cmajackie@gwc.ac.za, 0761914525, 021 788 1652

Dr. Mzwandile Shongwe (supervisor), mzwandile.shongwe@uct.ac.za, 021 6502488

Appendix B. Invitation letter to participate in study

Participation Invitation Letter

Dear Participant

My name is Collin Majackie and I am a Master student working under the supervision of Dr. Mzwandile Shongwe in the Department of Knowledge and Information Stewardship (DKIS) at the University of Cape Town. I am conducting research on ***the digital literacy practices of faculty and non-teaching staff members at a theological college*****.** Given your role as **Principal**, I feel that you are well suited to provide insight into this topic and I would like to invite you to participate in this study.

If you decide to volunteer for this study, your participation will consist of a one-on-one semi-structured (online) interview that will take approximately 60 minutes of your time. During the interview you will be asked questions such as:

- **Are you aware of the concept – digital literacy? Could you define digital literacy/ digital technology?**
- **Are you aware of any theology-specific technologies in education? If you are aware of them, please describe them.**
- **If you had unlimited financial support, how would you use it to encourage the use innovative educational technologies at George Whitefield College?**

Your participation will be a valuable addition to the research findings and could lead to helpful insights about the importance of digital readiness at a theological college.

With your permission, I would like to record the interview to ensure accurate transcription and analysis.

The study has been granted ethical clearance by the University of Cape Town. Please find attached the ethical clearance certificate. All ethical issues will be strictly observed. I also include a consent form for you to complete.

If you are interested in participating, please suggest a day and time that suits you and I will do my best to be available. If you have any questions, please do not hesitate to contact me or my supervisor.

Sincerely,

Collin A. Majackie, mjccoloo1@myuct.ac.za, cmajackie@gwc.ac.za, 0761914525, 021 788 1652

Dr. Mzwandile Shongwe (supervisor), mzwandile.shongwe@uct.ac.za, 021 6502488, 073 5128026

Appendix C. Interview consent form

Digital Literacy - Faculty Readiness: a case study of a theological college in Cape Town, South Africa

Informed Consent Form for Interview Participants: Faculty and staff

I, Collin A. Majackie, is a MLIS student in the Department of Knowledge and Information Stewardship, University of Cape Town. I am currently researching the digital literacy practices of faculty at a theological college. My research is being supervised by Mzwandile Shongwe,

Technological innovation in higher education challenged prevailing thinking about the way faculty teach and students learn in a digitally mediated learning environment. (Alexander et al., 2017; Wineburg et al., 2016; Guri-Rosenblit, 2018; Kaeophanuek, Na-Songkhla, & Nilsook, 2018).

The purpose of this study is to understand how faculty employ digital tools in their teaching and interaction with their students. As key stakeholders in the George Whitefield College, I would like to ask you a few questions about the digital literacy practices at the College in relation to teaching and learning in a digitally mediated learning environment.

Your answers will be treated confidentially, and your identity will not be revealed at any stage. There are no right or wrong answers.

The study conforms to the ethics standards of the Humanities Faculty of the University of Cape Town

Informed consent:

	Yes	No
I understand that my participation in this study is voluntary		
I understand that I do not have to answer any questions and do not need to provide an explanation		
Do you agree to the interview being audio-taped?		
I understand the I can end the interview at any point and will not be penalized or victimized if I choose to withdraw		
I have read and understand the study purpose as described and have asked any necessary clarifying questions		
I understand that I will not benefit directly from participating in this study		
I understand that any data that the researcher extracts from the interview for use in reports or published findings will not, under any circumstances, contain names or identifying characteristics.		

Signed:

Participant's name: _____ Signature: _____ Date: _____

Appendix D. Ethical Clearance

Department of Knowledge and Information Stewardship
University of Cape Town Upper Campus

Private Bag X1, RONDEBOSCH, 7701 South Africa Level 5 Hlanganani, Chancellor Oppenheimer LibraryTel: +27 (0) 21 650 4546
Fax: +27 (0) 21 650 2529
E-mail:
dkis@uct.ac.za
Web:
www.dkis.uct.ac.za

Ref. no.: UCTDKIS2021-06-02 15 June 2021

Dear Mr Majackie

The Ethics Review Committee of the Department of Knowledge and Information Stewardship has granted ethical clearance on behalf of the Humanities Faculty of the University of Cape Town for your Master's study entitled: *Digital literacy: a case study of digital readiness and technology adoption at atheological college in Cape Town, South Africa.*

You are reminded to seek further permissions from George Whitefield College before commencingwith your data collection among its staff members.

I wish you well with your study.

Yours sincerely,

Michelle Kahn

Chair, Department (DKIS) Research Ethics Committee

Appendix E: Interview Guide

Interview Guide

Data Collection: Semi-structured interview

Emerging/ innovative Educational technologies.

- Are you aware of the concept – digital literacy? Could you define digital literacy/ digital technology?
- Before one can use digital technologies one should be aware of the technology and have an idea of its purpose and benefits and be willing to use it. How would you define digital readiness?

Technological awareness.

- Please describe technological innovations in education that you are aware off?
- Are you aware of any theology-specific technologies in education? If you are aware of them, please describe them.
- Please explain how digital technology might impact theological education?

Current practices (adoption) at George Whitefield College.

- What, if any, are the types of digital/educational technologies that you use in your teaching?
- What encouraged you to use technology in your teaching?
- Do you use any technology-based assignments in your assessment? Elaborate please.
- If you have a diverse student population, please explain how you can use technology to teach these students?

Digital skills possessed by faculty and staff.

- What digital skills do you possess?
- How did you learn those skills?
- Do you feel you possess the necessary level of skills to effectively use technological innovations in your teaching? If not, if yes. What are these skills?
- Do you think that students possess the necessary level of skills to effectively use technological innovations in your teaching?

Drivers of use/ adoption of digital/educational technologies.

- What do you consider the major advantages of using digital technology in higher education?
    - In your teaching?
    - In your assessment?

- Why do you think college management want faculty to become more involved in using digital technologies?
- When using technologies what did you expect to achieve in terms of teaching/ learning outcomes?

Barriers to the use/ adoption of digital/educational technologies.

- According to you, what are the factors that affect your integration of technology into the preparation and delivery of lectures? Could you explain more? What other factors can you think of? How do these factors affect you?
- What are the challenges that hinder your use of digital technologies in teaching and assessment?

Support from management

- Describe the role of college management in supporting or enabling the adoption of digital technologies in the curriculum at George Whitefield College.
- Did you/ do you receive training in the use of educational technologies? Yes? No?
    - Do you think there is a need for training? What would this training look like? *[What according to you are the types of training needed? e.g. Social media etc.]*
    - How would you prefer to receive the training? Short courses? Workshops? Seminars? team/cooperative or individual? Self-training?
- What is your opinion on rewarding faculty financially or otherwise for developing innovative educational technologies?

Other

- What makes your use of technology effective?
- If you had unlimited financial support, how would you use it encourage the use innovative educational technologies at George Whitefield College?
- Which of the following best describes your attitude towards digital/educational technologies?
    - Enthusiastic? Interested? Indifferent? Not interested? Concerned? WHY?
- How would you describe your application of digital technologies in teaching as?
    - Simple? Practical? Innovative? And why?