Exploring Business Studies Student Teachers' Experiences on the Integration of Educational Technological Resources at uMgungundlovu District

Thesis submitted in fulfilment of the requirements for the Degree of

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School of Education: Curriculum Studies

BY

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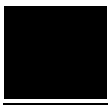
Signature: 

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DEDICATION

Lethokuhle *Thushu*, *skweleti*, *Oros*, *Sherbert*, Saziso Mthethwa. This project is dedicated to you. It is because of you that I started; it is also because of you that I reached the finish line. I want you to draw inspiration from it to always follow your passion. I value you, son.

ABSTRACT

Student teachers' have been raved to move from traditional to online pedagogy to tie with the demands of the fourth (4th) industrial revolution. Hence, schools makes provision of educational technological resources which may include but not limited to smart board, computers, application software. However, the lack of skills to integrate technology into curriculum hinders effective online pedagogy, and this results in the poor curriculum enactment/implementation.

Consequently, This qualitative case study thus aims to explore experiences of student teachers on the integration of educational technological resources in curriculum in South African public schools.

Furthermore, this qualitative case study draws on Ten (10) student-teachers experiences on the integration of educational technological resources. Moreover, these student-teachers were purposively and conveniently selected because they were teaching Business studies and accessible. One-on-one semi-structured WhatsApp interviews, online reflective activities and zoom group discussion was used to generate data which was thematically analysed using inductive and deductive reasoning.

Findings articulated that the inadequate training and ignorance of student teachers to integrate educational technological resources into curriculum enhance them to draw from different/varying experiences (formal, informal and conformal), and this creates inconsistency towards achieving desired outcomes. This study therefore sought to find and alternative theoretical and a practical model that will balance experiences in order to ensure a successful integration of educational technological resources into curriculum.

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ABBREVIATIONS AND ACRONYMS

Acronym	Description
4IR	Fourth Industrial Revolution
AaL	Assessment as learning
AfL	Assessment for learning
AoL	Assessment of learning
ATP	Annual teaching plan
CAPS	Curriculum and Assessment Policy Statement
C2005	Curriculum 2005
DBE	Department of Basic Education
ICT	Information and communication technology
NCS	National Curriculum Statement
RNCS	Revised National Curriculum Statement
TPACK	Technological pedagogical and content knowledge
UKZN	University of KwaZulu-Natal

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CHAPTER ONE

Overview, context, and objectives

1.1 Chapter Overview

In South Africa, student teachers are facing the reality of emerging modern technological resources and the intimidating task of integrating them into their classrooms (Dlamini & Mbatha, 2018). Bose and Sharma (2010) maintain that most student teachers have the skills to use technological resources and have access to modern technologies; however, they do not use them regularly for teaching and learning. Fomunyam (2019) stated that student teachers' reliance on and inability to move from traditional teaching methods have made integration of modern technological resources slow, particularly in schools with modern technological resources tools. In addition, Wang, Hsu, Reeves, and Coster (2014) further posit that modern technological resources in South Africa are still used as tools to learn from rather than the tools to learn with. This suggests that modern technological resources in teaching and learning have not been used properly to yield positive learning outcomes. As a result, this study aims to explore Business Studies student teachers' experiences of the integration of educational technological resources at uMgungundlovu District.

This chapter aims to present the focus and purpose of the study, rationale, and summary of the reviewed literature, critical research questions and objectives, data generation methods, data analysis, limitations, sampling, and ethical issues addressed.

1.2 Title

Exploring Business Studies Student Teachers' Experiences on the Integration of Educational Technological Resources at uMgungundlovu District.

1.3 Focus and purpose of the study

The purpose of this study is to explore Business Studies student teachers' experiences of the integration of educational technological resources at uMgungundlovu District.

1.4 Location of the study

The study was conducted in Africa at a South African university, specifically the University of KwaZulu-Natal's (UKZN) Edgewood Campus. The study focus was on students who did or are doing their teaching practice in the uMgungundlovu District. The primary course offered by this campus is a Bachelor of Education. Edgewood Campus is located in Pinetown, east of

Durban. It is the main location of UKZN's Faculty of Education. The students in this institution are demographically mixed, meaning that they come from both rural and urban areas. Edgewood Campus includes African, Coloured, Indian, and some White students. Ten Business Studies student teachers who did their teaching practice in uMgungundlovu District would be included as participants in this study.

1.5 Rationale

This area of the study was chosen drawing from my personal experience and involvement as both a Business Studies learner and as a student teacher teaching Business Studies. My experience of learning Business Studies started from Grade 10 to Grade 12 in two different secondary schools. In both of these schools my observation was that Business Studies teaching relied more on traditional technology (textbook and chalkboard), disregarding the importance of modern technology (computer and internet). This was despite both schools having access to modern technological resources such as computers, overhead projectors, and Wi-Fi. The computer lab was mostly used by Business Studies teachers for administration: typing school notices; preparing their lessons; creating learners' reports, and other administrative duties. One of Business Studies teachers owned her own personal computer (laptop), but when she brought it to class she usually did not use it for teaching and learning – she would just focus on it while we were busy with an activity. One Business Studies teacher used WhatsApp when we were in matric; she created a WhatsApp group for learners to ask questions related to the subjects after school hours.

The above had an influence on me as a student teacher, where I followed the practices of using the textbooks and chalkboard while ignoring the presence of technological resources – which are vital in this era of the Fourth Industrial Revolution (4IR) – when teaching Business Studies. This suggests that most teachers teaching Business Studies are driven by different experiences that lead to varying use of technological resources in teaching the subject, hence conflict arises on the proper use of technological resources in teaching it. This challenge triggered my interest in exploring Business Studies' student teachers' experiences in the integration of technological resources during teaching.

Dewey (1938) defines experiences as rooted in the dualism of the mind and the world, as well as of the mind and the body, and asserts that they can be organised into three categories**.** Firstly, self-experience reasoning that works from the general to the particular. The author posits that experience is grounded on both interaction and continuity between the teacher and the learner. In addition, Khoza (2013) states that for the integration of technological resources this

experience forms a setting that helps student teachers and learners to build their own unique individual identities. Secondly, there are communal experiences, which are constructed where a person is raised and are also shaped by their society (Buthelezi, 2016). Lastly, there are expert/content experiences; these experiences are acquired through enrolling in educational courses to acquire written content. According to Khoza (2018) most student teachers draw from self-experiences and communal experiences while ignoring content experiences when integrating technological resources in their teaching and learning. This suggests that Business Studies student teachers use technological resources drawing from different experiences. This unbalanced use of experiences leads to discrepancy in their use during the integration of technological resources. This suggests that in order to maintain a balance between student teachers' experiences, there is a need for this study to explore student teachers' practices in the integration of technological resources in Business Studies.

A descriptive case study conducted by Munaki (2016) at Zengeza High in Zimbabwe revealed that Business Studies teachers experienced technological resources when they are researching, keeping records and planning their work. However, Padayachee (2017) argues that there is still only a small number of educators who integrate technology in their teaching practices. Likewise, Ikegwuani (2019) reveals that the majority of student teachers experiment with modern technological resources, but do not apply them appropriately because they do not draw on policy documents (lack content experiences) to drive their integration, particularly in Business Studies. This suggest that there is a need for this study to be conducted, so as to understand Business Studies student teachers' reasons for having certain experiences of the use of technological resources in content delivery.

Studying Business Studies student teachers' experiences would benefit many stakeholders. For example, the Department of Basic Education (DBE) would be made aware of the reasons behind how Business Studies student teachers are integrating technological resources, and the hindrances to integration of these technological resources. Hence, this study would benefit the DBE in enabling it to provide Business Studies student teachers with learnings on how to integrate technological resources, and highlight the gaps that teacher education institutions need to address. As teachers improve their practices through drawing from the findings of this research, the learners they teach will also benefit.

1.6 Review of the literature

As mentioned above, experiences have been discussed by different scholars such as Dewey (1963), who defines experience as the manifestation of interaction, the organism, and the environment. In addition, for Roth and Jornet (2014) experience is defined as a category of thinking, a minimal unit of analysis that includes people, their material and social environment, and their transactional relations (mutual effects on each other). Khoza (2013, 2016a) further classifies three levels of experiences which inform student teachers' integration of technological resources: self-experience, communal experiences, and content experiences. According to Ngubane-Mokiwa and Khoza (2016), self-experience for the integration of technological resources in Business Studies creates a setting which helps student teachers to shape their personal identities. The use of communal experiences in the integration of technological resources is influenced by public opinion, local knowledge, and other issues from society, while content experiences are acquired through school knowledge or learning in a particular formal institution (Khoza, 2015c).

Furthermore, according to Davies and Sprague (2008) technological resources embrace any piece of equipment, tool, mechanical or electronic device that can be used to help students accomplish specified learning goals. This suggests that technological resources in teaching and learning involve resources used to convey or display knowledge to learners. Additionally, Khoza (2013) maintains that these technologies comprise hardware, software, and ideological-ware resources. Serdyukov (2017) further maintains that modern technological tools involve laptops, iPads, smart phones (hardware) or educational software, and web-based resources such as technology-based learning systems (Moodle, Canvas) and video communication technology (Zoom, Acrobat Connect), and social media sites (WhatsApp, Facebook). Moreover, these modern technologies add to the previously used educational technologies (traditional technologies) in the traditional classroom, which included slate boards, green boards, and/or chalkboards (Silber-Varod & Eshet-Alkalai, 2019).

Furthermore, according to the Department of Basic Education (DBE) (2011), Business Studies is the subject which addresses knowledge, skills, attitudes and values which are critical for productive, ethical, and responsible informed participation in the formal and informal economic sectors. Furthermore, Charity and Igwe (2016) maintain that Business Studies is a dynamic subject which prepares students for the challenges of the 21st century by acquainting them with the world of business. Similarly, Igbongidi (2018) asserts that Business Studies is designed to introduce learners to the foundational knowledge of the principles and practices of

business. Mhlanga (2012) asserts that the teaching of Business Studies has always seemed easy to others but has proven to be a challenge to most teachers, who still use the traditional way of teaching.

In addition to above, Kolandan (2020) asserts that technological resources are widely used in the subject of Business Studies, but it are more likely to supplement rather than replace other methods. Similarly, the findings of a case study conducted by Sogo and Jeremiah (2018) at a selected public senior secondary school in Botswana reveals that Business Studies student teachers still believe in the use of traditional methods, whereby the teacher stands and exposits information while learners sit passively and try to understand what is being articulated by the teacher. This suggests that student teachers do not experience the use technological resources in Business Studies properly, as they use them to supplement traditional teaching methods of Business Studies. However, according to Ile and Nwosu (2019), teaching of Business Studies in the 21st century should adopt learner-centred methods to allow for the integration of technological resources into the subject. This suggests that student teachers should adopt pedagogical practices which allow for the use of technological resources in Business Studies content delivery, which means student teachers are compelled to be in possession of self-experience which addresses pedagogy, communal experiences which address technological resources and content experience which is in line with content for the proper use technological resources.

Furthermore, Han, Shin, and Ko (2017) assert that the integration of technological resources into education by student teachers is greatly influenced by their self-experiences. Lewis, Agarwal and Sambamurthy (2003) add that student teachers always bring their communal or cultural knowledge and understandings when they integrate technological resources into teaching and learning. These studies indicate that when student teachers integrate modern technologies in Business Studies, their practices are mostly informed by self-experiences and communal experiences. However, there is silence on content experiences in their practices, which requires student teachers to be driven by written documents (policies, articles) on the use of technological resources (Khoza, 2018). Moreover, Ikegwuani (2019) reveals that the majority of student teachers experiment with modern technological resources but do not apply them appropriately, because they do not draw upon policy documents (lack content experiences) to drive their integration, particularly in Business Studies subjects. This revelation suggests that there are imbalances in student teachers' experiences that drive them during teaching practices. This indicates that there is a need to explore Business Studies students'

experiences in order to describe and understand their practices. Understanding these experiences may result in the holistic use of levels of experiences in their teaching and learning process. To reach full understanding of student teachers' experiences, it is highly important to discuss curriculum issues to capture how these experiences work hand in hand with curriculum when student teachers are integrating modern technologies.

Pinar (2012) agrees with Tyler (1957) that curriculum may be defined as consisting of all the experiences directed and planned by the school to attain its educational goals. Furthermore, Pinar (2004) together with Thijs and Van den Akker (2009) maintains that the word curriculum has its root in the Latin verb *currere*, which in education denotes running of the course for/of learning. Moreover, Hoadley and Jansen (2013), in agreement with Thijs and Van den Akker (2009), define the three levels at which curriculum can be implemented: the intended, enacted, and attained curriculum. From the intended position, Thijs and Van den Akker (2009) explain curriculum as a plan for teaching (planning and development), while the implemented and attained positions view curriculum as a plan of teaching (actual teaching and learning) (Pinar, 2004). Khoza's (2018) case study on teachers' reflections on digital and curriculum resources confirms this, by summarising that the first layer of curriculum becomes a plan for teaching (intended), while from the second and third layer (implementation and attainment) it becomes a plan of teaching.

Furthermore, integration of modern technological resources in Business Studies teaching and learning requires student teachers to be in possession of knowledge of Business Studies content, technological knowledge, and pedagogical knowledge. Understanding of these three categories of knowledge will help student teachers to effectively integrate modern technological resources in Business Studies.

1.7 Objectives

The purpose of this study is:

1. To explore Business Studies student teachers' experiences of the integration of technological resources.

2. To find reasons that informs Business Studies student teachers' experiences of the integration of technological resources.

1.8 Research questions

The following are the two research questions of this study:

1. What are Business Studies student teachers' experiences of the integration of technological resources?
2. Why Business Studies student teachers' experiences are shaped in particular ways?

1.9 Research design and methodology

1.9.1 Research approach: Qualitative study

This study used a qualitative research approach, which is understood by Creswell (2014) as the appropriate approach for understanding and exploring the meaning that groups or individuals assign to a human or social problem. Additionally, Denzin and Lincoln (2017) maintain that the qualitative approach to research encompasses the studied use and generation of diverse empirical materials, which may include experiences, case studies, life stories, and interviews as well as visual texts. This suggests that qualitative research affords a researcher insight into the meaning and/or experiences of participants (student teachers) in real-life situations and their practices (process of integration of technological resources in Business Studies).

Furthermore, according to Anderson (2010) the strength of the qualitative approach is that the phenomenon being explored can be examined in-depth and in detail, so as to gain full insight into the participants. In this study I used this strength to thoroughly examine student teachers' experiences when integrating technological resources in Business Studies teaching and learning. However, Sarantakos (2005) maintains that a weakness of this approach is that interpretation may differ from what is actually said by the respondent. To counter this weakness is this study I used triangulation to compare the responses of my participants using different data generation methods, with the same questions used for each of the methods.

1.9.2 Research paradigm

This study was framed by the interpretive research paradigm. Bertram and Christiansen (2014), together with Cohen, Manion, and Morrison (2013) agree that the interpretive paradigm is core, because it helps researchers to describe and understand the way people make sense of their world and also makes meaning of their actions rather than predicting what people will do. In addition, Sarantakos (2005) asserts that the interpretive paradigm looks for culturally and historically obtained interpretations based on individuals social life and experiences. As a result, I chose the interpretive paradigm because I wanted to understand the experiences of Business Studies student teachers of the integration of technological resources, so as to help

them understand what they miss/omit when they integrate modern technology into their teaching practices.

Moreover, Pham (2018) agrees with Creswell (2007) that by the use of diversified views in the interpretive paradigm to explore the phenomenon (experiences), the researcher is not limited to describing objects, events or humans, but instead is able to deeply understand them in a social context. In this study I therefore chose the interpretive paradigm to help me not only describe the experiences of student teachers when they are integrating technological resources in Business Studies, but also to get insight into what informs their experiences so as to best understand their practices. As a result, using the interpretive paradigm in this study helped me to address the purpose of this study as outlined in 1.7. Additionally, ontologically this study used the interpretive paradigm to examine the subjective ideas and experiences of student teachers on the integration of technological resources in Business Studies, considering that student teachers have different experiences. Epistemologically, the study used the interpretive paradigm to produce knowledge through exploring and understanding the social world of student teachers when they use technological resources in Business Studies teaching and learning, (Al Saadi, 2014).

1.9.3 Research design

While the research paradigm depicts the beliefs the researcher has about what can be thought about the world, the research design reflects beliefs about what might be the most helpful or noteworthy method for acquiring this information (Bertram & Christiansen, 2014). According to Creswell and Poth (2016), case studies include the exploration of an issue through at least one case inside a limited framework, for example, a setting or a specific context.

Furthermore, case studies may be descriptive, exploratory, and also explanatory (Yin, 1984). This study adopted a descriptive case of 10 Business Studies student teachers. Zainal (2007) maintains that descriptive case studies aim to richly describe the natural phenomena that occur within the data in question. Likewise, Yin (2003) further maintains that descriptive case studies are good for revealing and reaching insights when one investigates a particular phenomenon in a social or educational setting. Likewise, in this study a descriptive case study was a valuable instrument, as I was able to thoroughly discuss the phenomenon (experiences) of this study in more detail. However, according to Sarantakos (2005) a weakness of case studies as a style of research is that the findings could include personal impressions and bias, and thus validity could be compromised. This was addressed through data triangulation, as suggested by Johansson (2007), as an important way of addressing and ensuring validity in case study

research. Another important instrument in research methodology is sampling, as described below.

1.9.4 Sampling

Moser and Korstjens (2018a), argues that sampling is the procedure of providing context by choosing or probing situations or participants who will generate rich information on the researched phenomenon. This suggests that sampling is about choosing suitable participants who are familiar with the researched phenomenon of the study. This study adopted purposive and convenience sampling. According to Cohen, Manion, and Morrison (2018), in purposive sampling the cases or participants are handpicked for inclusion, according to specific characteristics they possess. Sarantakos (2005) further posits that the importance of purposive sampling is that respondents are knowledgeable on the area of interest for the study and are suitable for it. This method of sampling was able to provide rich data to the understanding of Business Studies student teachers' integration of technological resources, as they have different experiences of using these technologies in Business Studies teaching and learning.

However, a weakness of this sampling method is that it can be inclined toward researcher bias, as the sample is chosen by the researcher and is influenced by their judgement (Sharma, 2016). In defence, Sharma (2016) argues that this influence only becomes an issue when the researcher's judgements are ill-conceived, poorly considered, or not rooted in clear criteria. Hence, in this study the criterion of detail and transparency was employed to overcome this weakness.

The second method of sampling used in this study was convenience sampling. Yin (2011), in agreement with Cohen et al. (2018), understands convenience sampling as selecting data generation units or participants because of their ready availability and suitability to the study. In this study ten student teachers within University of KwaZulu Natal (Edgewood Campus) who were majoring in Business Studies were approached. These were student teachers from different levels of study, from second year to fourth year, who were chosen because they had experienced teaching practices in uMgungundlovu District.

1.9.5 Methods of data generation

Thorne (2016), posits that researchers within interpretivist traditions refer to the procedure of engaging with data as data generation. Moreover, the author further posits that this happens as both the researcher and the participant create the data, decide, and understand what data is and what is significant within it. This study employed three data generation methods: one-on-one

semi-structured WhatsApp interviews, an online reflective activity, and Zoom group discussion interviews.

1.9.5.1 One- on-one semi-structured WhatsApp interviews

This study employed semi-structured interviews. Corbetta (2003) asserts that semi-structured interviews are when the order in which different topics are discussed through a conversation and the wording are left to the researcher's discretion. Additionally, Bertram and Christiansen (2014) posit that semi-structured interviews represent focused and structured conversations whereby the researcher has specific information they want to gain from participants, and has designed certain questions for the interviewees or participants in order to discover this information. Furthermore, Flick (2009) argues that semi-structured interviews are valuable because of their ability to provide researchers with opportunities to explore subjective viewpoints and generate detailed accounts of participants' experiences. Through the use of one-on-one semi-structured WhatsApp interviews, I was able to generate detailed accounts of Business Studies student teachers' experiences, as I was available to probe for more clarity from participants where necessary. However, Newcomer, Hatry, and Wholey (2015a) reveal that one of the weakness of this method is that semi-structured interviews are time-consuming. Jamshed (2014) suggests that in order to keep to the allocated time, interview guides be used to keep the interview focused on the desired course of action. In this study I established semi-structured interview guides to keep the interview within the frame of the study phenomenon (experiences of Business Studies student teachers).

1.9.5.2 Online reflective activity

This study used an online reflective activity to generate data from participants through using a series of questions that address the main question of this study. According to Cohen, Manion, and Morrison (2011), reflective activities entail a written series of questions which address the phenomenon explored by the researcher. Reflective activities provide authentic data and reflect the experiences of all participants; the researcher's subjective beliefs do not hold precedence over the views of participants (Cohen et al., 2011). This added value to the data generated from student teachers' experiences on integration of technological resources in Business Studies. In addition, Akerson, Abd-El-Khalick, and Lederman (2000) assert that reflective activities serve as an instrument to allow student teachers to open up and reflect on their skills, shortcomings, and challenges in their teaching and learning. In this study I designed an open-ended questionnaire which was driven by my theoretical framework (TPACK), and I distributed an online reflective activity through email to all ten participants. They were to complete it within

a two-week period, to gain an understanding of their experiences of technological integration in Business Studies teaching. However, Mpungose (2016) maintains that one of the weaknesses of reflective activities is the issue of honesty – the researcher cannot be certain that participants are honestly reflecting on their genuine experiences. To address this shortcoming I clearly explained what was expected of participants and also gave them enough time to provide feedback on the questions.

1.9.5.3 Zoom group discussion interviews

Cohen et al. (2011), and Newcomer, Hatry, and Wholey (2015b) agree that group discussion interviews are planned discussions where a researcher uses a set sequence of questions to gain participants' insights on a particular topic. In this study, a 45-minute to 1-hour group discussion interview was held on Zoom with 10 participants. One of the strengths of the group discussion interview is that it is time-efficient and generates a wide range of responses that could not be obtained from individual interviews (Cohen et al., 2018). This helped me to gain more information, as student teachers shared their experiences on the integration of technological resources in Business Studies teaching and learning.

However, one of the pitfalls of group discussion interviews is that there is a high risk that some people will dominate the group discussion (Yin, 2011). This weakness was addressed in this study by encouraging every member of the group to share their views on the questions discussed, through giving each participant an equal opportunity to contribute on each question (Smithson, 2000).

1.10 Data analysis

Bertram and Christiansen (2014) understand data analysis as a close inspection or study through a system or partition of the whole into its parts for the purposes of the study. Cohen et al. (2018) posit that the process in data analysis entails noting patterns, themes, describing, and understanding the generated data. This study employed thematic analysis to analyse the data.

Braun and Clarke (2019) define thematic analysis as the process of systematic organising, identifying, and making meaning of patterns of data. Cohen et al. (2018) maintain that thematic analysis helps the researcher to display multiple perspectives and experiences of participants, supported by diverse citations that provide evidence to the reader. This was used to categorise Business Studies student teachers' responses into themes, accompanied by quotes from their responses to all of the research data generation methods used in this study.

Furthermore, thematic analysis incorporates two approaches: inductive and deductive data analysis (Braun & Clarke, 2006). According to Bertram and Christiansen (2014), inductive analysis works from the specific to broader generalisation, while deductive reasoning works from the general to the specific. In this study, both inductive and deductive qualitative thematic analysis were used. To identify patterns (student teacher experiences) of data generated from the three methods used in this study, namely a Zoom group discussion interview, online reflective activity, and one-on-one semi-structured interviews, I used an inductive approach. Creswell (2012) strengthens this argument by maintaining that qualitative data is inductive as it shifts from detailed data (from Zoom group discussion interview, online reflective activity, and one-on-one semi-structured WhatsApp interviews) to general codes and themes (transcriptions). The deductive approach was further used to allow themes to emerge from the data which could not be captured by use of the inductive reasoning approach.

Braun and Clarke (2006), states that one of the challenges of thematic analysis for some researchers is that its flexibility could lead to inconsistency and a lack of coherence, as they may not be sure which aspect of the data to focus on. In this study this was resolved by guiding themes through theoretical framework concepts (technological pedagogical and content knowledge – TPACK) so as to avoid incoherence, and clearly creating themes guided by the research questions and purpose of the study.

1.11 Trustworthiness

Korstjens and Moser (2018b), believes that trustworthiness describes the degree to which the findings of the study can be trusted. The authors further posit that quality standards employed in a quantitative study, such as generalisability, objectivity, internal validity, and reliability, are not fit to evaluate qualitative research quality. However, Lincoln and Guba (1985) suggest that in order for interpretivists to meet the trustworthiness criteria, they must take note of four considerations: credibility, transferability, dependability, and confirmability.

Credibility refers to the reality or the interpretation and representation of participants' opinions (Polit & Beck, 2008). This suggests that credibility is concerned with research findings reflecting the real experiences of participants, without the researcher's subjectivity in the interpretation of findings. Anney (2014) argues that credibility could be ensured through multiple methods, such as triangulation, member checking, or peer debriefing. To ensure credibility in this study triangulation was used; moreover, Lincoln and Guba (1985) suggests in order to ensure credibility, a researcher must employ different data generation methods.

Likewise, in this study data generated using different methods, notes were taken and there was also recording of the interview process.

Confirmability is concerned with the effort made by the researcher to identify their assumptions and preferences in the findings of the study through clear consideration of their interpretations of the data (Gill, Gill, & Roulet, 2018). In addition, Bitsch (2005) posits that confirmability challenges the issues of researcher prejudice and bias. In order to ensure confirmability of findings in this study, I clearly described the methodology to ensure the integrity and confirmability of findings.

Dependability alludes to constancy and firmness of the data over time and also in different situations (Elo et al., 2014). To ensure dependability in this study, I included explicit research questions and clearly explained the research design and methodology.

Furthermore, Bitsch (2005), understands transferability as responsible for defining the extent to which the findings can be transferred to another context with another group. Moreover, the author further posits that this depends on the resemblance to the context which the findings came from to the context to which they are transferred. The researcher should provide thick descriptions of the research procedures and participants, so that the reader may decide whether the findings can be transferred to their context (Korstjens & Moser, 2018b). In this study, transferability was ensured by providing a detailed description of the research procedures, a clear explanation of the research methodology, an explanation of the research approach, and a summary of the data generation and data analysis processes.

1.12 Ethical clearance

Creswell and Poth (2018), posits that researchers need to consider the ethical issues that might arise during the planning and designing of qualitative research, and how they may overcome them. Ethics refers to behaviours in the research that are considered right or wrong (Bertram & Christiansen, 2014). Hatch (2002) asserts that to ensure that ethics are maintained, the researcher needs to be sensitive to vulnerable populations and must prevent participants being put at risk. Thus, Bertram and Christiansen (2014) and Cohen et al. (2018) suggest ethical principles which can be employed to address research ethics, which include non-maleficence, beneficence, anonymity, and autonomy.

Non-maleficence indicates that the study should bring no harm to the research participants (Cohen et al., 2018). In keeping with this principle of ethics, this study remained mindful of the harm that the study could potentially cause and protected the wellbeing of participants.

I first applied for a gatekeepers' letter at the UKZN research office to obtain permission to conduct the study within the University. In addition, I also sent a letter to seek ethical clearance from the office of research at the University's College of Humanities, so that the study could be approved prior to involving participants.

Furthermore, Bertram and Christiansen (2014) posit that a study should be directly beneficial to its participants, other researchers, or to the educational community at large; it is considered unethical and selfish if the study benefits only the researcher (Cohen *et al.,* 2018). Hence, to address this ethical principle, this study contributed to the educational community by contributing its findings to the literature and making recommendations about future research, as based on the experiences of student teachers, to improve the practice (integration of technological resources in Business Studies).

In addition, anonymity implies that the identity and information of participants should be protected (Fenton, *et al.,* 2019). In this study I ensured anonymity of the participants by using pseudonyms and making sure that reflective activities provided no information that could identify the participants. However, according to Cohen *et al*. (2018), a drawback is that interviews cannot guarantee the anonymity of participants. So, in terms of the interviews and focus group the researcher treated participants' information as confidential, including protecting recordings and transcripts. The participants received consent forms detailing their rights, how the study would protect their confidentiality, their freedom to withdrawal and all other relevant information that they needed to be aware of before participating in the study.

1.13 Anticipated problems/limitations

Due to the fact that the coronavirus pandemic was widespread across the world, including in South Africa where the study was conducted, physical contact for data generation was restricted. Some participants (student teachers) were carrying out their academic activities through online platforms and hence were in different places, where it was not easy to reach them. However, online methods for data generation were employed to overcome this limitation. Participants of this study were also recruited through online methods and using the teaching practice office to gather relevant information regarding potential participants and thereafter reaching out to them through calls and emails.

1.14 Chapter overview

1.14.1 Chapter One

This chapter presents an overview of the study. It highlights the focus and purpose of the study, rationale, critical research questions and objectives, data generation methods, data analysis, sampling, trustworthiness of the study, it also highlight how ethical issues were addressed and presents the limitations encountered.

1.14.2 Chapter Two

This chapter presents the reviewed literature on the fundamental issues relating to this study. This includes studies engaging on the phenomenon of the study (experiences), modern technological resources integration, defining curriculum, Business Studies curriculum reform, knowledge required for teaching Business Studies (pedagogy, technology and content), technostress, and components of the curriculum spider web (rationale, assessment, goals and student teachers' activities).

1.14.3 Chapter Three

This chapter presents the theoretical framework used for this study (TPACK). It further presents how the TPACK theoretical framework was applied in this study and offers justification as to why it was chosen for this study. Furthermore, it highlights three main components of the framework which are vital for the integration of modern technological resources in Business Studies: technology, pedagogy and content knowledge.

1.14.4 Chapter Four

This chapter presents the research design and methodology. It outlines the chosen research approach, research paradigm, and steps taken in the generation of the data, as well as the data analysis method used. The chapter also indicates how trustworthiness was ensured in the study.

1.14.5 Chapter Five

This chapter focuses on the discussion of the research findings and analyses these findings which were drawn from each participant selected for the study, through online reflective activities, a Zoom group discussion and WhatsApp one-on-one semi-structured interviews. The chapter also shows how themes emerged which reflect student teachers' experiences, driven by the study's theoretical framework of TPACK.

1.14.6 Chapter Six

The chapter looks at the main purpose of this study, and whether the purpose of the study was thoroughly addressed, and whether the research findings addressed the study's purpose. It also

provides the conclusions and recommendations linked to the research questions: What are Business Studies student teachers' experiences of the integration of technological resources? And why are Business Studies student teachers' experiences shaped in particular ways? It also provides conclusions and recommendations linked to the study objectives, which were to explore Business Studies student teachers' experiences of the integration of technological resources, and why Business Studies student teachers' experiences of the integration of technological resources are shaped in the way that they are.

CHAPTER TWO

The literature review

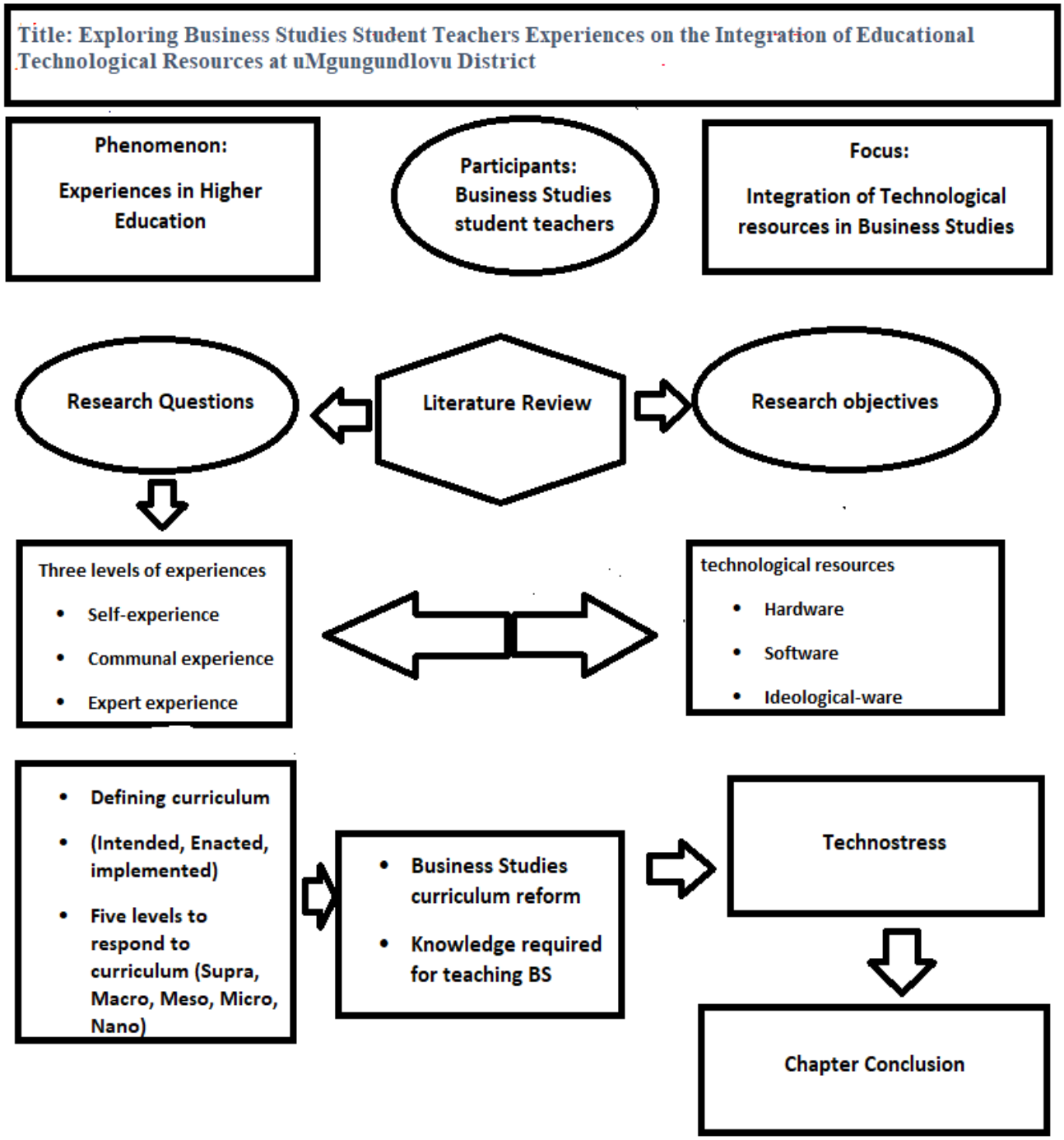
2.1 Chapter Overview

This chapter presents the review of relevant literature on the phenomenon that was researched for this study (student teachers' experiences). It also explored literature on other concepts that are relevant to this study, including experiences of the integration of modern technological resources in Business Studies, and curriculum representations (intended curriculum, implemented curriculum and attained curriculum). It further reviewed literature on the five different levels at which curriculum issues may be responded to (supra, macro, micro, meso and nano). The chapter also reviewed literature on the challenges which come with the integration of modern technological resources by student teachers (such as technostress). Creswell and Creswell (2017) posit that the literature review shares the outcomes of other studies that are closely related to the one being explored. In addition, Boote and Beile (2005) posit that the literature review sets the broad context of the study and clearly demarcates what is within the scope of the researched phenomena and what is missing, and also offers justifications for those decisions.

In addition, this chapter also reviewed literature guided by the research questions and the research objectives in addressing the phenomenon explored in this study (student teachers' experiences). The concepts of technological pedagogical and content knowledge (TPACK) further assisted in mapping out the relevant literature that is suitable for this study.

Figure 2.1 provides the flow chart for Chapter 2, It mapped out the areas of literature which were reviewed.

Figure 2.1: Chapter Two (literature mapping)



2.2 Experiences in higher education

Dewey (1938) defines experiences as rooted in the dualism of the mind and the world, as well as the mind and body on deductive reasoning that works from the general to the particular. Moreover, the author posits that experience occurs when an individual student teacher is perceiving and feeling something, through interactions with the outside world. Roth and Jornet (2014) further add to the body of knowledge by defining experiences as a category of thinking, a minimal unit of analysis that includes students, their use of technological resources and social environment, and their transactional relations (mutual effects on each other). Moreover, experiences assist in recalling some knowledge and progressively constructing means of intelligence (Shook, 2008). This suggests that for Business Studies student teachers to successfully integrate modern technological resources in their pedagogical practices, they should be guided or directed by experiences.

Furthermore, according to Alexander (1987), experience comes before discourse and conceptualisation of Business Studies content in conjunction with technological resources, and plays a vital role in cultivation of meaning. This is confirmed in the case study conducted by Shezi (2019) on experiences of first-year students on the use of Moodle to learn Business Studies, which reveals that experiences afford student teachers skills, knowledge and attitudes through involvement and by having once been exposed to certain activities (modern technological resources integration). Dewey (1938) further warns that not being able to note the moving force of an experience, so as to direct and judge it on the ground in terms of what it is moving into, means disloyalty to the principle of experience itself. Thus, it is of paramount importance that student teachers understand experiences holistically, for successful teaching of Business Studies with modern technological resources. This takes note that experience explains and drives the meaning of behaviour when student teachers are using technological resources during the teaching and learning of Business Studies. Furthermore, Khoza (2015c) agrees with Dewey (1938) that experiences which inform student teachers' integration of modern technological resources are divided into the three levels of self-experience, communal experiences, and content experiences.

2.2.1 Self-experience

Khoza (2016a) asserts that self-experience for teaching places the individual student teacher or learner at the center of the teaching/learning environment. Additionally, Khoza (2015c) maintains that self-experience for the integration of modern technological resources in teaching and learning creates a setting which helps student teachers shape their personal identities. This suggests that the knowledge of using technological resources by student teachers stems from, but is not limited to, self-experience of these technologies. In support, Clandinin and Connelly (1994) assert that self-experience reflects meaning and the flow of the thoughts which student teachers bring to their immediate situations. Thus, self-experiences are unique in different student teachers when they are integrating modern technological resources (Sokhulu, 2020). Student teachers' self-experiences also inform their actions when they want to implement curriculum, including choice of the teaching methods and resources (educational technology) they use (Jacobs, Vakalisa, & Gawe, 2011). The above studies therefore indicate that student teachers may find it difficult to utilise technological resources in teaching Business Studies if they are not familiar with or have not been exposed to technological resources in their self-experience.

A pre- and post-survey study conducted by Al-Awidi and Alghazo (2012) examined the effect of the student teaching experience on preservice elementary teachers' self-efficacy beliefs and the sources of their beliefs about technology integration. The findings of this study revealed that student teachers who have experienced technological resources integrate technology more often, as they have passion and believe in its value. This revelation thus suggests that the adoption of technological resources in Business Studies has its foundation in the self-experiences which student teachers bring in their classroom discourses. Han *et al.* (2017) also assert that the integration of technological resources into education by student teachers is greatly influenced by self-experiences. Likewise, exploratory and descriptive research conducted by Lawrence and Tar (2018), focusing on the factors that influence teachers' adoption and integration of information and communication technology (ICT) in teaching and learning, reveals that teachers' technological resources experience relates positively to their attitudes to computers. Furthermore, Sokhulu (2020) agrees with Shezi (2019) and Khoza (2018) that self-experiences can have an influence on the quality of further experiences (communal and expert experiences). Communal experiences thus also play a major role in influencing the integration of educational technological resources in Business Studies teaching and learning.

2.2.2 Communal experiences

Communal experiences are constructed where a person grows up and are also shaped by society. Khoza (2015c) confirms this, asserting that communal experience draws much from public opinion, local knowledge, and other issues related to the society. This author further argues that knowledge is horizontally constructed from the simple sources to local known sources from the community. In the case of this study, student teachers experience the use of educational technologies by observing mentor teachers and other staff members during teaching practices, and/or by communicating with fellow student teachers on how to use these resources to learn and to teach Business Studies. This is confirmed in a mixed-methods study (descriptive survey and case study) conducted by Lin (2016), which explored teaching practices of student teachers in technology integration in elementary classrooms. The study revealed that student teachers sourced the methods of integrating technological resources into their pedagogical practices through direct assistance from their mentor teachers. Hence, social interaction among student teachers and in-service teachers enhances student teachers' technological skills (Hurst, *et al.,* 2013). Tour (2015) further believes that people always bring their communal or cultural knowledge and understandings when they read or write. Thus, their teaching practices – including integration of educational technological resources in Business Studies – are always connected to the people in their surroundings through communal experiences. This thus indicates the importance of communal experiences if Business Studies student teachers are to successfully integrate technological resources in their teaching. Other experiences which inform Business Studies students' integration of educational technology derive from their content experiences.

2.2.3 Content experiences

Content experiences are acquired through school knowledge or learning in a particular formal institution (Khoza, 2016a). Moreover, Williams (2017) asserts that student teachers should have technological resources training experience to safeguard their implementation of these technologies in their everyday teaching. This suggests that for integration of educational technological resources in Business Studies teaching, student teachers should draw from teacher education institutions, policy documents and other sources such as scholarly articles and journals. As such this constitutes formal learning. Moreover, student teachers' use of educational technologies is driven by the level of knowledge or experiences they have about the use of these resources in teaching Business Studies. Tondeur, Van Braak, Ertmer, and Ottenbreit-Leftwich (2017) affirm that professional development (content experience) is

needed in order to build on student teachers' pedagogical beliefs and technology use in the classroom.

DBE (2011), defines Business Studies as the subject which addresses knowledge, skills, attitudes and values which are critical to productive, ethical, and responsible informed participation in the formal and informal economic sectors. Furthermore, Charity and Igwe (2016) maintain that Business Studies is a dynamic subject which prepares learners for the challenges of the 21st century by acquainting them with the world of business. Similarly, Igbongidi (2018) asserts that Business Studies is designed to introduce learners to foundational knowledge of the principles and practices of business. Matoetoe (2017) further discloses that the teaching of Business Studies has always seemed easy to others, but proven a challenge to most teachers who still use the traditional way of teaching. Hence, Ile and Nwosu (2019) warn that teaching of Business Studies in the 21st century should adopt learner-centred methods. Expanding on this, Bhattacharjee and Deb (2016) maintain that educational technologies become the appropriate tools for effective implementation of learner-centred pedagogical practices. These studies thus indicate that Business Studies student teachers' delivery (implementation) of the Business Studies curriculum should be driven by their use of educational technological resources. This thus compels student teachers to have self-, communal and content experiences of educational technological resources for effective Business Studies content delivery in the era of the 4IR.

2.3 Experiences of educational technological resources

Ringstaff and Kelley (2002) believes the word technology can be used to mean an enormously wide collection of things, from computers to pencils. In the educational context technology consists of practices, skills and procedures involved in teaching and learning (Kavanaugh, 2018)**.** Furthermore, Loveland (2012) concurs with Davies and Sprague (2008) that technology as a resource in teaching and learning embraces any piece of equipment, tool, mechanical or electronic device that can be used to help students to accomplish specified learning goals. This suggests that technology encompasses teaching resources to help student teachers to implement the Business Studies curriculum. In light of the above, authors such as de Sagun, Taala, Franco Jr, and Cordero (2019), and Muttappallymyalil et al. (2016) divide educational technological resources into traditional technological resources and modern technological resources.

Dority Baker and Leiter (2011) assert that traditional technological resources include eraser, textbooks, slate boards, green boards, and/or chalkboards. These traditional technological resources are useful in teaching and learning, depending on what the student teacher wants to achieve in their lesson (Irani et al., 2020). However, the aforementioned traditional technologies have been critiqued by authors such as Mehring (2017), Rondon, Sassi, and de Andrade (2013), and Yu (2015), who state that traditional technologies are used in a manner which promotes passive learning, where learners' role is limited to taking notes while the teacher is the main source of knowledge. Rueda, Benitez, and Braojos (2017) further note that traditional technological resources in education usually do not arouse high levels of interaction among learners and student teachers, but influence the learner to master the content. In other words, student teachers may be driven by content experience in order to assist learners to master the content taught during teaching and learning. However, Keefe and Steiner (2018) believe that traditional technologies such as blackboards, books, textbooks and whiteboards have a permanent place in education and should be used in conjunction with modern technologies. Hence, modern technologies add to the previously used traditional technologies in education (Silber-Varod & Eshet-Alkalai, 2019).

Serdyukov (2017) maintains that modern technological resources involve laptops, iPads, smart phones (hardware) or educational software, and web-based resources such as technology-based learning systems (Moodle, Canvas) and video communication technology (Zoom, Acrobat Connect), and social media sites (WhatsApp, Facebook). Mpungose (2020a) asserts that modern technologies are all about the resources which can be used to communicate the curriculum during the teaching and learning process. This suggests that Business Studies student teachers should have experiences of these educational technological resources, in order to communicate the Business Studies curriculum. In other words, student teachers should adopt pedagogical practices which allow for the use of modern technological resources in Business Studies content delivery. Additionally, they are compelled have self-experience which addresses pedagogy, communal experiences which address technological resources, and content experience which is in line with content for proper use of modern technological resources.

Studies such as those of Das (2019), Sharma (2020) and Salman (2020) share that modern technological resources promote active learning, creativity, and independent learning, and prepare learners' with different skills linked to their future requirements. This is also in line

with the South African Business Studies Curriculum, which is in the Curriculum Assessment Policy Statement (CAPS), as it requires learners to engage in active and critical learning, high knowledge and high skills, to identify and solve problems and make decisions using critical and creative thinking (DBE, 2011). This serves to confirm the importance of integrating modern technological resources in Business Studies teaching.

Furthermore, according to the interpretive case study conducted by Khoza (2012) revealed that modern technological resources can be divided into hardware, software, and ideological-ware resources. Ideological resources involve theories and ideas underpinning the use of hardware and software resources (Khoza, 2018). Hardware resources involve any machine or structure used in the teaching of Business Studies, for example, laptops, tablets, computers, videos and more (Khoza, 2011). Software is a collection of computer and related data programs which offer instructions for telling a computer what to do and how to do it (Ecker, Müller, & Dömer, 2009). In addition, Khoza (2011) asserts that software resources include any tools which are used to display information, such as computer application software, e-books, the internet and more. Percival (1988) further maintains that modern technological resources are divided into technology of education and technology in education. While technology in education defines resources which can be touched and seen by student teachers (such as hardware and software resources), technology of education defines resources which cannot be touched and seen, including ideological-ware (Khoza, 2016b).

Furthermore, Shezi (2019) concurs with Cele (2019) that ideological-ware resources address self-experience; this is because they require student teachers to draw from personal ideas and theories to use modern technological resources in Business Studies teaching. In contrast, hardware resources address content experiences because they require student teachers to attend classes, and to read scholarly articles and policy documents in order to be able to use these resources. Lastly, software resources address communal experiences because they include tools to interact and share Business Studies content between student teachers and learners.

In addition, the above literature suggests that student teachers should have varying kinds of experiences to drive the integration of educational technological resources in communicating Business Studies content. However, Ikegwuani (2019) reveals that the majority of student teachers experiment with educational technological resources, but do not apply them appropriately because they do not draw on policy documents (lack content experiences) to drive

their integration, particularly in Business Studies subjects. This suggests that student teachers are aware of certain theories (ideological-ware resources) to drive the integration of educational technological resources, but much of their awareness derives from their communal experiences and self-experience. In other words, they have experience of software-resources and ideological-ware resources, but lack knowledge of hardware resources (content experience/formal classroom training or reading of policy documents) when it comes to the integration of these resources in the classroom context. This is affirmed by the study conducted by Khoza (2018), which found that most student teachers draw from self-experiences and communal experience while ignoring content experiences when integrating technological resources in their teaching and learning. In other words, student teachers use these technologies for communication and pedagogical purposes, but do not infuse the academic Business Studies content in the process. In other study Khoza (2017) revealed that during the integration of educational technological resources, most student teachers are aware of hardware and software resources but lack theories to drive these resources (ideological-ware resources). These studies thus make it clear that during the integration of modern technological resources, Business Studies student teachers draw from varying kinds of experiences. However, it is also evident that while some student teachers are aware of hardware resources and software resources, they lack awareness of ideological resources. Others are aware of certain theories (ideological resources) and software resources, but lack knowledge of hardware resources.

In addition, these studies suggest that there are imbalances in Business Studies student teachers experiences, or they do not draw holistically on these three varying experiences (self-experiences, communal experiences, and content experiences) during the integration of modern technologies in Business Studies. Furthermore, in fully understanding the experiences of Business Studies student teachers in the integration of modern technological resources, it is also of the upmost important to discuss the curriculum.

2.4 Defining curriculum

Pinar (2012) agrees with Tyler (1957) that curriculum may be defined as consisting of all of the experiences directed and planned by the school to attain its educational goals. Furthermore, Pinar (2004) together with Thijs and Van den Akker (2009) maintains that the word curriculum has it root in the Latin verb *currere*, which in education denotes the running of the course for/of learning. Moreover, Hoadley and Jansen (2013), in agreement with Thijs and Van den Akker

(2009), define three levels at which curriculum can be implemented: the intended, enacted, and attained curriculum. From the intended position, Thijs and Van den Akker (2009) explain curriculum as a plan for teaching (planning and development), while the implemented and attained positions view curriculum as a plan of teaching (actual teaching and learning) (Pinar, 2004). Khoza's (2018) case study on teachers' reflections on digital and curriculum resources confirms this, by summarising that the first layer of curriculum becomes a plan for teaching (intended), but from the second and third layers (implementation and attainment) it becomes a plan of teaching. Thus, this study posits that curriculum is defined as consisting of experiences, plans, aims, methods (for technological resources integration) and assessment plans to guide the teaching and learning of Business Studies.

2.4.1 Curriculum representations (intended, implemented and attained)

Hoadley and Jansen (2013) agree with Van den Akker (2007), who defines intended curriculum as a plan for teaching which entails all the prescribed content and activities which student teachers should cover in a specific time frame. Additionally, intended curriculum entails ideal and formal/written content as specified by policy makers (Goodlad, 1979; Van den Akker, Kuiper, & Hameyer, 2003). Moreover, the study conducted by Khoza (2015c) on students' reflection on their practices of the curriculum and assessment policy statement concurs with the above assertion. The study reveals that prescribed curriculum, and planned curriculum, also known as intended curriculum, defines formal/written policy or ideas framed by educational theories and aims of teaching and learning which specify curriculum intentions. In addition, Kuiper, Folmer, and Ottevanger (2013) agree with Van den Akker (2007) that intended curriculum usually entails expectations and goals which are determined by curriculum developers and policy makers along with official syllabi, textbooks or curriculum standards set by a certain nation. Furthermore, According to Hoadley and Jansen (2013), intended curriculum also lists the teaching methods to be used in delivering the content, the sequencing of content, organisation thereof, and the content and assessments to be conducted.

These studies thus suggest that intended curriculum defines the curriculum as specified by policy makers at a national level. Moreover, having experiences of intended curriculum will thus guide student teachers to integrate educational technological resources in Business Studies, while keeping in line with the prescribed, planned, or intended content in their school that comes from the DBE. Furthermore, in the context of this study, intended curriculum

addresses content experiences of Business Studies student teachers. This is because when student teachers are integrating educational technological resources in Business Studies, they are compelled to draw from intended curriculum/written policy documents (Business Studies CAPS document/other official policy documents), as they serve as a guide for what is expected from the student teachers. These contain the understanding of Business Studies objectives as specified by the curriculum document. According to Khoza (2015c), in the South African curriculum document or intended curriculum (CAPS), objectives are presented as specific aims.

Furthermore, Evtyugina, et al., (2016) and Tyler (1949) define objectives as specific, precise, and realistic statements of achievements expected from learners. The CAPS does not specify objectives per subject, however, but indicates the general aims of the CAPS for all subjects from Grade R to Grade 12 (Muhle, 2014). For instance, one of the objectives stated in CAPS (2011) is to ensure learners are able to identify and solve problems and make decisions using critical and creative thinking. Additionally, Wise (1976) argues that during curriculum planning the more specifically the objectives are stated, the more effective planning will be. The objectives form part of lesson planning, while taking into consideration the intended outcomes of learners (Makumane & Khoza, 2020). Thus, for student teachers to successfully implement curriculum with the aid of technological resources, particularly in Business Studies, they have to clearly understand the objectives of implementing the Business Studies intended curriculum. Additionally, these objectives are thus measured using assessment of learning. The overall aim of assessment, particularly assessment of learning, is to make sure that the performance achieved by learners matches the plan (intended curriculum) and objectives (Mulyasa, 2013).

Furthermore, DES/WO (1988) defines assessment of learning (also known as summative assessment) as assessment for recording the overall learners' achievement in a systematic way and also for grading purposes. De Lange, Winberg, and Dippenaar (2020) further affirm the above by asserting that assessment of learning is high-stakes in nature, and impact a learner's progress in school and potentially post-school. Hence, when student teachers conduct assessment of learning, they need to draw from their content experiences (acquired through the intended curriculum document). Hoadley (2017) further affirms the above assertion by positing that under CAPS, curriculum content/concepts/skills are listed together with formal assessment tasks to be administered. For instance, in Grade 10, according to Business Studies CAPS,

assessment of learning includes Formal: Test & Assignment (term 1), Mid-year examination (term 2), Formal Assessment: Project (term 3), Formal: Test (term 3), and Final examination (term 4). Furthermore, Hoadley (2017) argues that the CAPS curriculum includes excessive assessment. Thus, student teachers tend to follow a teacher-centred approach when interpreting the Business Studies curriculum. As a result, student teachers tend to rely more on policy documents (content experiences), while neglecting the neutral and communal experiences during the integration of technological resources. In addition, Business Studies student teachers' understanding of the policy intentions/intended curriculum should be visible in the way that the curriculum is implemented.

McKenney, Nieveen and Van den Akker (2006), asserts that the implemented curriculum entails both the operational curriculum (as enacted in the classroom) and perceived curriculum (interpretation by users, particularly student teachers). This is where this study is located, primarily because, when student teachers are integrating educational technological resources in Business Studies/implementing Business Studies curriculum (using educational technology), they draw from the intended curriculum as prescribed by policy makers. The action research study conducted by Khoza (2018) revealed that the implemented curriculum, enacted or practised curriculum (which can also be known as curriculum in action), involves the interpretation of intended curriculum as perceived by student teachers, and what actually happens in the process of teaching and learning. Moreover, Khoza (2015) states that during the implementation of Business Studies curriculum, student teachers need to clearly understand the aims of teaching the subject, as written from the student teachers' perspective. This is further affirmed by the definition offered by Ramsden (2003), who posits that aims are best classified as a general statement of educational intentions.

Furthermore, Mpungose (2016) posits that the implementation of Business Studies curriculum with the aid of educational technological resources is highly dependent on the broad aims as stipulated in the intended curriculum. This suggests that teaching of Business Studies using educational technologies will only be successful if student teachers are greatly aware of the subject aims. Moreover, in the process of measuring the aims (of the subject), student teachers use assessment as learning. Harlen (2006) states that assessment as learning is a formative view which aims to assist learners, identify their strengths and weaknesses, plan their learning, and target areas for remedial action so that the aims of teaching and learning are met. The only difference between assessment as learning and assessment for learning is as follows: in

assessment as learning, attention is placed on the role of the learner and promoting active engagement during implementation of the Business Studies curriculum, while in assessment for learning the emphasis is on the role played by student teachers in promoting learning (Berry, 2013).

The curriculum that is implemented is thus shaped by student teachers' knowledge, beliefs and experiences, the rules, and routines they establish, the policies, resources (traditional and modern) and routines of the school, and the documents and objects they use or create in the process of translating the curriculum into practice (Gobby, 2017). This is confirmed by Billett (2006), who posits that implemented curriculum is an action oriented and practical curriculum where different learning activities are conducted, drawing from intended curriculum. These studies thus suggest that the implemented curriculum defines how student teachers and learners transfer intended curriculum into practice. Moreover, implemented curriculum relates to communal experiences; this is because when student teachers are implementing the Business Studies curriculum with the aid of educational technological resources, they interact or communicate with learners in order to complete the curriculum.

Furthermore, Thijs and Van den Akker (2009), argues that the attained curriculum defines learning experiences as experienced by learners and is determined by learners' outcomes or achievements. In addition, Hoadley and Jansen (2013) posit that the attained curriculum evaluates if what was taught and learned is similar to what was planned to be taught and learned. This suggests that the attained curriculum serves as a guide to assess the alignment of both the intended curriculum (as prescribed by the policy documents – in the case of South Africa, the CAPS document) and the actual teaching and learning which happens when student teachers are interpreting the Business Studies intended curriculum in their pedagogical practices (implemented curriculum), with the aid of educational technological resources. In other words, when student teachers are integrating educational technological resources in Business Studies, their interpretation of the intended curriculum into implemented curriculum, using educational technological resources, should be evident in their learners' outcomes and achievements (attained curriculum) through informal tasks (assessment for learning), to show if it was successful or not. Hence, as attained curriculum measures the outcome of what has been intended and implemented, as suggested by Hoadley and Jansen (2013), draws on both the communal and content experiences of student teachers.

In addition to the above, Hoadley and Jansen (2013) argue that as much as implemented curriculum entails how student teachers and learners are to put curriculum into practice, it is not possible to implement the intended curriculum precisely as prescribed. Studies such as those of Clarke Sr and Zagarell (2012), Jansen (2001), and Rogan (2004), further share that when student teachers are integrating technological resources into the Business Studies curriculum, what is specified by the official curriculum documents (intended curriculum) and what happens during the teaching and learning process (implemented) are often dissimilar. Khoza (2015) further expands on this, asserting that while student teachers are capable of implementing the curriculum with the aid of educational technological resources, they lack the abilities needed to align what they studied in higher educational institutions with classroom realities. This suggests that Business Studies student teachers do not align their content experiences (relating to intended curriculum) with communal experiences (relating to implemented curriculum) to get the desired learners' outcomes or achievements (attainment curriculum) during the integration of technological resources. Furthermore, Thijs and Van den Akker (2009), together with Pinar (2004) and Hoadley and Jansen (2013), advise student teachers to first understand these curriculum representations before they are able to integrate technological resources into the curriculum.

The curriculum has different levels at which matters concerning curriculum (including the integration of educational technological resources in Business Studies) may be responded to. Hence, the next section discusses five vital levels in responding to curriculum matters.

2.4.2 Five levels in responding to curriculum

McKenney et al. (2006), Van den Akker (2007), and Thijs and Van den Akker (2009) declare that curricular concerns may be responded to at five different levels: supra, macro, meso, micro and nano. Priestley (2017) defines the supra level as international discourses about education. Van den Akker (2007) points out that supra curriculum also involves agreements on aims and debates on quality of education, mostly influenced by comparative studies of the international context (such as the Programme for International Student Assessment or the Trends in International Mathematics and Science Study). This suggests that at when curriculum developers are designing the national curriculum, they have to uphold international standards, particularly when designing the Business Studies curriculum at macro level.

Furthermore, Van den Akker (2007), Priestley (2017) and McKenney et al. (2006) concur that the macro level addresses national policy documents and the intended curriculum. Luka (2016) further affirms the above by mentioning that the macro level contains the syllabus, specific strategic aims, study plans, training standards and so on. In addition, Priestley (2017) reveals that the macro curriculum focuses on broad ideas (values, principles and purposes), and outlining the type of resources available in schools to develop these ideas into practice. These revelations suggest that when student teachers are integrating modern technological resources, they have to respond to the curriculum standards set at national level. Moreover, Wang (2001) asserts that the national level curriculum refers to the curriculum standard to be used for the whole country, or to the general teaching outline. This thus refers to the Business Studies CAPS document in the context of this study. In other words, when student teachers are integrating modern technological resources in Business Studies, they should refer to the macro curriculum, as designed for the whole country. Another vital level to respond to curriculum matters is the meso level.

Priestley (2017), Carl (2009) in agreement with Van den Akker (2007), posits that the meso curriculum represents implementation of the curriculum at school level. Mpungose (2016) asserts that each and every school is in possession of its own curriculum in the form of and annual teaching plans (ATPs) or schedules (meso). Additionally, Priestley (2017) asserts that the meso level curriculum purpose is arguably based on development of a system level support infrastructure, including leadership of and expertise for curriculum development locally and regionally. Moreover, Khoza (2015c) further adds that when schools produce the meso curriculum, it should be framed by the macro curriculum (formal/official document). However, Kaseorg (2017) states that although the meso curriculum is framed by the macro curriculum, it should afford freedom of choice for the school institution, content, plans and teaching methods, as this is one of the meso curriculum level decisions. These studies thus reveal that during implementation of the Business Studies curriculum using technological resources, the meso curriculum gives student teachers guidelines via school schedules and ATPs to be followed, which are also informed by formal or official Business Studies documents. The micro curriculum is the next layer.

Kaseorg (2017) posits that at the micro level curriculum processes consist primarily of the student teachers and their work environment, which includes learning content and activities, and decisions related to recreational activities provided by the school. In other words, the micro

curriculum refers to the development of educational practice extracted from the official curriculum (Priestley, 2017). Additionally, implementation of Business Studies curriculum by student teachers with the aid of technological resources happens at micro curriculum level. This is where student teachers decide on which technological resources to use, how to use them and which content should be covered. This compels student teachers to have knowledge and experience of the top layers of the curriculum – macro (national level policy intentions) and meso (policy guidance, facilitation) – in order to implement what is officially specified by the DBE and the school they are teaching at.

The last layer of curriculum represents learners' experiences at nano level. Nano represents the lowest curriculum level; it is designed by learners for their own learning, taken from the micro curriculum (Khoza, 2015). This author further reveals that at nano level learners bring in their personal views, which come from their experiences.

Priestley (2017) adds that when student teachers integrate technological resources, these levels or layers of activity may not be coherent, and there may be good reasons for this – for example, to account for differences in school contexts. Nevertheless, in order for student teachers to be able to implement the Business Studies curriculum using technological resources, they must be aware of these different layers of curricula.

2.5 South African Business Studies curriculum reform

Jansen (1998) agrees with Cross, Mungadi, and Rouhani (2002) that an important process in post-apartheid South Africa was departing from apartheid education to outcomes-based curriculum reform. Khoza (2015c) adds that after the Christian National Education of the apartheid era, Curriculum 2005 (C2005) driven by outcome-based education (OBE) was introduced. According to Russell (2009), prior to the introduction of OBE, Business Studies was known as Business Economics. The author further adds that under the OBE curriculum, Business Studies fell under the group of commercial subjects, Economics Management Science at the General Education and Training level, whereas in the Further Education and Training phase learners could choose or combine Business Studies, Accounting and/or Economics, as they had obtained the foundation of these subjects at GET level through Economics Management Science. Furthermore, another change in the curriculum, according to Khoza (2015c), was emergence of the National Curriculum Statement (NCS), which started as the

Revised National Curriculum Statement (RNCS) in response to C2005, with the OBE approach introduced in 1998. The failure of C2005 and challenges with the NCS led to a third curriculum reform in South Africa since democracy, named the Curriculum Assessment Policy Statement (CAPS). This has been used to date with no exception in Business Studies (Hoadley & Jansen, 2013).

The Education Strategic Plan (2015), states that student teachers should employ teaching strategies that are student-centred in supporting implementation of the curriculum on subject specifications in the classroom. However, studies such as that of Daft and Marcic (2013) argue that in most African countries (including South Africa) a problem in the teaching of Business Studies indicates a gap between actual and desired performance. This was witnessed in the survey study conducted by Igbongidi (2018), which investigated the ICT skills needed by Business Studies teachers at junior secondary schools in Bayelsa State in Nigeria. The study used a structured questionnaire for data generation, and revealed that Business Studies student teachers lacked technological skills to implement the Business Studies curriculum. According to the author, this is after the Government put a new curriculum in place to replace the old one, particularly in Business Studies. This new curriculum contains some components of technological resources (such as word processing, use of the internet and data processing), which most student teachers find difficulty in teaching with, because they were not part of the old curriculum. This suggests that Business Studies student teachers lack content experience of interpreting the official curriculum document (intended curriculum) in practice (implemented curriculum), with the aid of technological resources. Furthermore, Business Studies learners in countries such as Lesotho failed to achieve high cognitive skills as they remained unable to link Business Studies concepts to their life situation (Matoetoe, 2017).

The study conducted by Chibale and Nakamba (2018) in Zambia explored factors influencing poor examination performance in Business Studies among Grade 12 pupils, and revealed that the problem encountered in Business Studies teaching was student teachers' lack of content knowledge in the subject. As a result, in 2017 academic performance for Business Studies for the matric examination in Zambia reported learners to have attained an average of only 19.05%. These studies were mostly conducted in other African countries. There is limited literature discussing the state of Business Studies curriculum implementation in the context of South Africa. This emphasises the importance of conducting this study.

Bernstein (1975) states that curriculum models (competency and performance) serve as the tools to aid one to compare different curriculum products (Mpungose, 2016). Bernstein (1975) defines two curriculum approaches, namely the competence and the performance approach. According to Hoadley and Jansen (2013), competence curriculum is rooted in encouraging teaching by drawing on competences that learners already have. This suggests that under the competence curriculum, when student teachers are using technological resources in their teaching of Business Studies, they bring in learners' experiences in the topic taught. However, the performance approach stresses a teacher-centred approach and the mastery of content (Hoadley & Jansen, 2013). According to Khoza (2015), C2005, RNCS, and NCS were located in the competence curriculum because of their focus on learning outcomes over content. In contrast, Mpungose (2016) asserts that CAPS is located in the performance curriculum, where the priority is the Business Studies content.

2.6 Are student teachers acquainted with the required knowledge for teaching Business Studies?

Bolisani and Bratianu (2018), believes that there is not yet a universally accepted definition of knowledge. However, some authors have indicated what they believe defines knowledge. These include Khoza and Biyela (2019), who believe that knowledge is a cognitive process which draws from beliefs and experiences (self-, communal, and expert experiences). Hunt (2003) believes that to know something suggests that the belief is right and is supported; hence, to know something requires that an individual is certain or sure of it. The above authors defined knowledge in general terms, while in defining knowledge in the terms of teachers/student teachers, Rohaan (2009, p. 25) believes that "Teacher knowledge is an umbrella term that covers a large variety of cognitions, beliefs, skills, and knowledge domains". Knowledge can also be viewed as information and understanding about a subject which a student teacher acquires through experience (self-experience and communal experience) or study (content experience), and which is either in a student teacher's mind or known by student teachers generally, as the case may be (Amesi, 2010). In relation to this study, for student teachers to be successful in the integration of technological resources in Business Studies, they need to possess three main categories of knowledge: technology, pedagogy, and content knowledge (Koehler & Mishra, 2009; Shulman, 1986, 1987).

The above authors maintain that obtaining technological knowledge empowers student teachers' skills in using technological resources to achieve different tasks in the teaching and learning space. Prasojo *et al.,* (2018) findings on learning to teach in the digital age revealed

that student teachers who integrated technological resources in their teaching usually had knowledge of Microsoft PowerPoint (software resources) to deliver their presentations in the Business Studies classroom. Additionally, the study conducted by Mlambo, Chukwuere, and Ndebele (2018) on perceptions of pre-service teachers on the use of ICTs for instructional purposes revealed that student teachers had general knowledge on using select hardware devices and their necessary software; however, when asked about their ability to use these same devices in class, most of their responses were negative. This suggests that the student teachers' reasons for using such hardware and software are driven by communal experiences, because no theories are identified for the student teachers to use these technologies in teaching Business Studies content (Khoza & Biyela, 2019).

Furthermore, it is indispensable for student teachers to have a strong base of pedagogical knowledge for the integration of technological resources. Khoza (2013) maintains that student teachers should first understand ideological-ware resources which support their intended curriculum, before the use of hardware and software resources. However, Fomunyam (2017) asserts that ideological-ware resources have been neglected in South African basic education. This suggests that when Business Studies student teachers are integrating technological resources, they lack knowledge of ideological-ware resources. Hence, when student teachers are integrating technological resources, they draw only from content experience and communal experiences, while ignoring self-experiences (ideological-ware resources).

Furthermore, student teachers require content knowledge for the integration of technological resources in Business Studies. Content knowledge encompasses student teachers' knowledge about the subject matter (Business Studies) to be taught or learned (Koehler & Mishra, 2009). Additionally, Schmidt et al. (2009) assert that it is essential that student teachers have informed knowledge of the content they teach and are also aware that knowledge for different grades varies. An exploratory study by Gess-Newsome et al. (2019) which explored teachers' pedagogical content knowledge, practice, and student achievement revealed that teachers' content knowledge influences the selection of teaching resources and implementation of teaching strategies. However, according to a survey study conducted by Lachner, Backfisch, and Stürmer (2019), teachers had relatively low levels of content knowledge. In contrast, a descriptive survey by Ile and Nwosu (2019) revealed that Business Studies student teachers demonstrate sufficient Business Studies content knowledge when using technological

resources. These discussions suggest that different student teachers possess different levels of content knowledge during the implementation of curriculum.

2.7 Technostress

Viberg and Grönlund (2017), in agreement with Gudanescu (2010), assert that as much as technological resources play a vital role in enhancing teaching and learning of Business Studies, they do not come without challenges. These challenges include stress called *technostress*. Hwang and Cha (2018), Ragu-Nathan, Tarafdar, Ragu-Nathan, and Tu (2008) and Brod (1984) define technostress as the stress experienced by student teachers as a result of the use of technological resources, and also a modern disease of adapting, triggered by failure to cope with modern computer technologies in a healthy manner. According to a study by Bloom (1985), lack of computer experience and skills are the biggest causes of technological resources-related technostress. Chiappetta (2017) further posits that the strain is created by the large amount of information, which goes beyond what the student teacher can practically absorb. The author further asserts that, as a result of this, a student teacher may experience anxiety characterised by a prevalent fear of being overwhelmed by an enormous amount of material. Ursavas and Karal (2009) reported that the expectation that student teachers would be digital natives, while they themselves feel they are not adequately trained to implement technological resources, caused anxiety among student teachers. The cross-sectional survey study conducted by Liu (2019) revealed that student teachers were more likely to experience technostress during the process of teaching and learning than experienced in-service teachers. A study by Jena (2015) revealed that technostress in the educational field results in dissatisfaction with learning, insufficient learning engagement, frustration and decreased performance. These studies thus suggest that student teachers' unbalanced experiences (content experiences, communal experiences, and self-experiences) during the use of educational technological resources in Business Studies could lead student teachers to experience technostress. As such, it is fundamental that student teachers get familiar with educational technological resources, drawing from policy documents, scholarly articles and other formal documents (content experience), and also use mentor teachers, fellow educators and other experienced stakeholders' insight on the use of modern technological resources (communal experiences), and also recall their own experiences (self-experiences) during the use of technological resources in Business Studies teaching and learning in order to reduce technostress.

2.8 Digital divide

Notwithstanding the rapid development of technology in the digital era, an educational, economic, and social rift exists between those who have unregulated and easy access to the internet and those who do not (Lee, 2018). According to the likes of Scheerder, Van Deursen, and Van Dijk (2017), Tsetsi and Rains (2017) and Van Dijk (2006), this gap is known as the digital divide. The notion of the digital divide and its content derives from digital inequality, which relates to the reflection of economic and social inequalities between countries (Hargittai, 2018). This is supported by the qualitative interpretive case studies conducted by Mpungose (2020c) in two university contexts which aimed to explore students' experiences of the use of short message service (SMS) for learning science modules. The study findings revealed that in South Africa students were struggling to access Wi-Fi, while for American students access to Wi-Fi was not a problem. This serves to confirm the digital divide/gap between countries.

Furthermore, the digital divide is not limited to equal access to technological resources and internet/connectivity, but also impacts technological resources literacy (Lee, 2018). This suggests that although some student teachers have access to the internet and other technologies, their experiences of these technologies are driven by communal and neutral experiences. However, they do not have content experience of these resources (which require them to draw from written documents). Gauld, Goldfinch and Horsburgh (2010) and Waycott et al. (2010) concur that lack of experience and skills in terms of technological resources widens the digital divide gap. Additionally, according to Prenksy (2001) in education there are two groups of technological resources users – digital natives (learners) and digital immigrants (student teachers).

Digital natives, also known as millennials, are often defined as those born after 1980 (Marchetta, Masiello, & Rosenblatt, 2018). Digital natives hold a particular set of characteristics, which incorporate multitasking, speed preferences, and social learning (Prenksy, 2001). The author further asserts that digital natives have these characteristics because they were allegedly developed via immersion in technological resources during childhood and adolescence. This suggests that digital natives acquired neutral and communal experiences of technological resources during their upbringing.

Digital immigrants are those student teachers who learnt to use technological resources later in their adult life (Wang, Myers, & Sundaram, 2012). Prenksy (2001) reveals that digital

immigrants (student teachers) have little appreciation of the new technological skills. The author further posits that they speak an outdated language – that of the pre-technological age – and as a result end up having challenges using educational technologies to implement the Business Studies curriculum.

CHAPTER THREE

Theoretical Framework

3.1Chapter Overview

This chapter presents the theoretical framework used for this study, the technological pedagogical and content knowledge (TPACK) framework, and a description thereof. It further presents how the TPACK theoretical framework was applied in this study, and offers justification for why it was chosen for this study. Furthermore, it highlights three main components of the framework that are vital for the integration of modern technological resources in Business Studies: technology, pedagogy, and content knowledge.

The literature suggests that the TPACK framework is the most suitable to guide this study, as displayed in Figure 3.1.

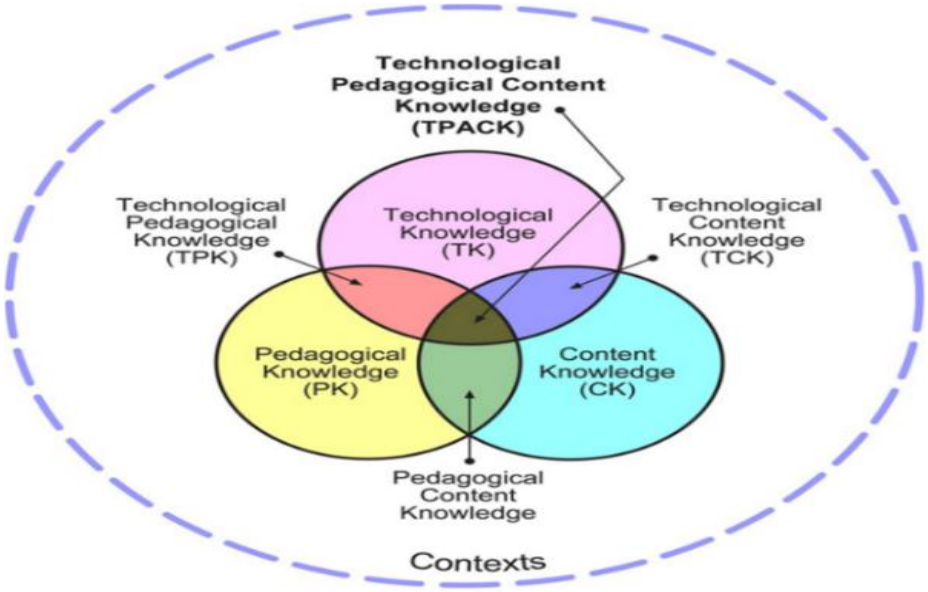


Figure 3.1: The TPACK framework and its knowledge components (source: Koehler & Mishra, 2009)

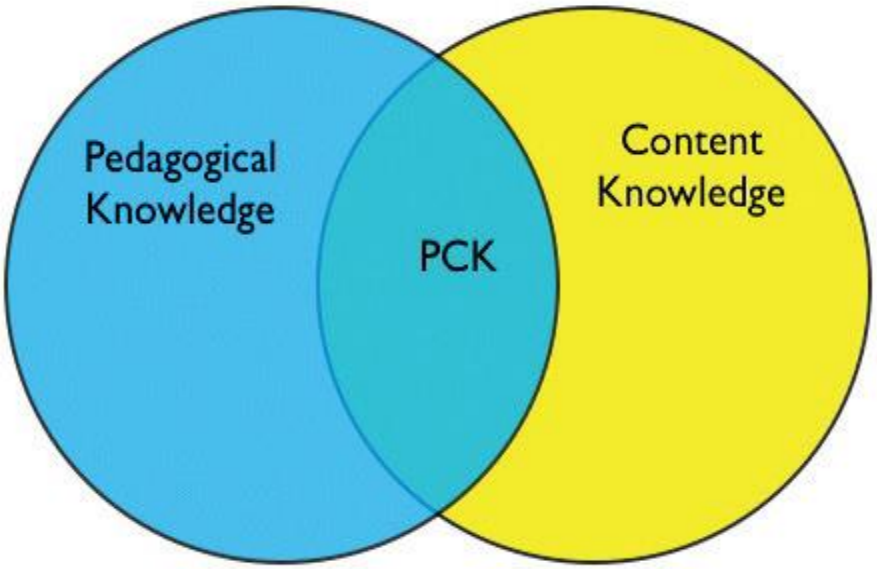


Figure 3.2: The pedagogical content model (source: Shulman, 1986)

In Koehler and Mishra (2006), TPACK theory is equated to a framework of teacher knowledge for technology integration. This vouches for the suitability/relevance of this framework for this study, as it aims to explore Business Studies student teachers' experiences of the integration of technological resources. Furthermore, Mercado, Panganiban and Ramos (2019) maintain that the TPACK framework is the dynamic transactional relationship between, and among, knowledge and content, pedagogy, and technology. In support of this, Koehler and Mishra (2009) assert that successful teaching with technology compels student teachers to continually create, uphold, and re-establish a dynamic equilibrium among technology, pedagogy, and content. This suggests that with the use of technological resources, Business Studies student teachers must draw from the knowledge of the main components of the TPACK framework – technology, pedagogy, and content – and use them in conjunction with their experiences to achieve positive results during teaching and learning.

3.2 Content knowledge

Tebabal and Kahssay (2011), asserts the main aim of teaching at any level of education is to bring vital development to the learner. Moreover, for student teachers to be able to foster the integration of different knowledge bases (pedagogical knowledge and technological knowledge), they need to be in possession of a strong content knowledge so as to contribute to learners' development (Sorge, Keller, Neumann, & Möller, 2019). Furthermore, content

knowledge entails having a deep knowledge of Business Studies subject matter, including knowledge of concepts, theories, evidence, and organisational frameworks (Koehler & Mishra, 2006). Makumane (2020) adds to the above by pointing out that content knowledge refers to conceptual knowledge of the subject matter that the student teacher must possess. The discussion above thus indicates that student teachers' communication of Business Studies content seeks them to be familiar with the subject matter that is to be taught to learners. Additionally, content knowledge is fundamental in the context of this study, because before the use of educational technological resources student teachers need to have foundational knowledge of the subject matter (content experience).

Furthermore, in Business Studies student teachers' content knowledge, as stipulated in the CAPS (DBE, 2011) document, should cover business environments, business ventures, business roles, and business operations. Moreover, business environment content aims to enable learners to demonstrate knowledge and analyse the impact of changing and challenging environments on business practice in all sectors, while business venture content aims to enable learners to identify and research viable business opportunities, and to explore these and related issues through the creation of achievable business ventures. Knowledge of business roles aims to enable learners to demonstrate and apply contemporary knowledge and skills to fulfil a variety of business roles, and business operations content aims to enable learners to apply a range of management skills and specialised knowledge to perform business operations successfully CAPS (DBE, 2011).

Learners can grasp this content knowledge if student teachers understand these topics in detail. This suggests that student teachers need to draw from their experiences (content experience) of Business Studies content knowledge in order to teach with technological resources effectively. In support of this, Shulman (2000) believes that in order for student teachers to be effective in teaching they must display sound knowledge of the subject content knowledge. However, Bjerke and Solomon (2020) argue that many teachers in the education system, particularly student teachers, have a poor foundation of knowledge and mastery of their subjects. This is affirmed in the qualitative study conducted by Modise (2016), the purpose of which was to explore the pedagogical content knowledge challenges faced by teachers in teaching Accounting as an integrated subject in Grade 9 in senior phase schools in South Africa. The study used a semi-structured interview and questionnaires, and the participants were

purposively selected. The study findings indicated that teachers are not experts in or even familiar with the subject matter knowledge (content knowledge).

3.3 Technological knowledge

Koehler and Mishra (2006), argues that the concept of technology in teacher knowledge enlarges on the existing knowledge spheres of content and pedagogy. Moreover, Kontkanen (2018) states that student teachers' technological knowledge is of great importance for meaningful, effective, and proper use of these technologies in their classroom applications. This suggests that if Business Studies student teachers are to implement the Business Studies curriculum successfully with the aid of technologies, they should have knowledge and experiences of educational technological resources.

Furthermore, Govender and Khoza (2017) assert that technological knowledge constitutes knowledge of any person or object that communicates learning. Similarly, according to the longitudinal study conducted by Valtonen et al. (2019), technological knowledge defines knowledge and experiences of how to use different technological resources and applications. Dority Baker and Leiter (2011), Irani et al. (2020) and Khoza (2017) further state that technological resources range from, traditional technological resources such as pencils, paper, and chalkboard, to modern technological resources such as the internet, computer simulations, interactive whiteboards, discussion forums, and software programs. These studies thus suggest that technological knowledge requires student teachers to know how to use various technological resources (traditional technologies and modern technologies), in order to utilise them properly during the teaching and learning of Business Studies.

Furthermore, according to a study using a critical paradigm with action research conducted by Khoza and Biyela (2019), technological knowledge is divided into software (material such as application programs, websites, and others, used in conjunction with hardware), hardware (machines such as computers, laptops, tablets, mobile phones, and others, used in teaching/learning), and also ideological-ware resources (whatever we cannot see and touch in education) as a vital component of technological knowledge (Khoza & Manik, 2016). Additionally, according to Amory (2015) hardware and software resources form part of technology in education, while ideological-ware is identified as technology of education. Moreover, hardware requires student teachers to draw from content experiences (such as

scholarly articles and policy documents), whereas software requires student teachers to draw from communal experiences (mentor teachers, colleagues and so on), and lastly ideological-ware requires them to draw from self-experiences (personal identities) to know how to use these resources during the teaching and learning of Business Studies.

Russell (2009) posits that teaching and assessing using technological resources requires student teachers to have knowledge and experiences of both the internet (software) and computer applications (hardware) for holistic use of technological resources. Be that as it may, the use of hardware and software resources without ideological-ware becomes socially driven, because there are no directing theories to drive the use of these technologies in teaching and learning (Khoza & Manik, 2016). Umugiraneza, Bansilal, and North (2017) state that educational technologies (hardware and software) help improve learners' performance or outcomes if they are driven by specific theories (ideological-ware). Thus these studies imply that, for the holistic use of educational technological resources in teaching Business Studies, student teachers should have knowledge of hardware, software and ideological-ware.

3.4 Pedagogical knowledge

Pedagogical knowledge encompasses teachers' knowledge of practices, processes, and teaching and learning methods (Koehler & Mishra, 2009). Khoza (2015b), concurs with Hoadley and Jansen (2013) that pedagogical knowledge relates to student teachers' teaching and learning, classroom management, lesson planning and enactment, as well as assessment of learners, that a student teacher should personally possess in order to deliver a lesson. Moreover, according to Abdulmuminim, Hammani, and Usman (2012), proper selection of best instructional material (technologies) and methods for Business Studies yields positive learning outcomes. As Business Studies is a practical subject, common effective strategies of teaching Business Studies include, but are not limited to, case studies, role plays, research projects, group discussions, learning in teams, audiovisual aids, problem-based methods of learning, and PowerPoint presentations (Albaqami, 2016; Farashahi & Tajeddin, 2018). The above mentioned teaching strategies promote active learning, critical thinking and application of business knowledge (Sava, 2016). In support of this, Ohiwerei (2015) maintains that Business Studies is designed to equip learners with the practical skills which will afford them an opportunity to participate in business activities in future. Current reforms stress the need for Business Studies student teachers to develop learners' capabilities in reflective thinking,

problem solving, teamwork and learning to learn. Nonetheless, Christy (2018) asserts that student teachers are still stuck in chalk and talk/learner-centered methods when teaching Business Studies, which promotes passive learning. As a result, many learners complete their basic education without the competence required to set up or manage their businesses. This implies that when student teachers are teaching Business Studies, they still miss out the use of communal experience in their pedagogical practices. Ile and Nwosu (2019) further indicate that the subject of Business Studies could not embrace integration of technological resources if teachers use traditional teacher-centred methods. In the context of this study, this implies that student teachers need to draw from communal experiences of specific methods of delivery and theories which inform their teaching of Business Studies enhanced by the use of technological resources.

Furthermore, Koehler and Mishra (2006) assert that knowledge about integrating educational technological resources into teaching should be included as a part of teachers' basic pedagogical knowledge. The studies reviewed above make it clear that in simple terms pedagogical knowledge is about having the base knowledge of teaching and understanding of how learners engage with learning. In addition, pedagogical knowledge serves as a vehicle through which education is delivered, as when there is more effective pedagogical knowledge (among student teachers), there is more effective teaching and learning (of Business Studies) (Fomunyam, 2016). Thus, pedagogical knowledge compels student teachers to have a basic knowledge of rationale for understanding learning and teaching of Business Studies, assessment, goals, and student teachers' activities, in order to assist in the integration of educational technological resources in their practices.

3.4.1 Rationale

Thijs and Van den Akker (2009) assert that rationale addresses the question of why one is teaching. In other words, it explains student teachers' reasons and visions for teaching Business Studies (Khoza, 2016a). Moreover, Van den Akker, Fasoglio, and Mulder (2010) argue that for any successful implementation of curriculum, rationale serves as a major orientation point. This suggests that student teachers' reasons for using pedagogy in TPACK to facilitate the integration of educational technological resources in Business Studies are driven by their rationale. Furthermore, according to Khoza (2016a), in accordance with Berkvens, Van den

Akker, and Brugman (2014), student teachers' rationale for using pedagogy in TPACK is divided into three aspects: personal, societal and professional rationale.

Khoza (2016a), posits that personal rationale puts the individual student teacher at the centre of the teaching and learning space. The rationale for using pedagogy may be viewed from the personal viewpoints of learners and student teachers. Moreover, passion for teaching constitutes part of personal rationale, and it comes before any other rationale in the teaching of curriculum (Mpungose, 2016). Michalec (2013) argues that personal rationale seeks Business Studies student teachers to be authentic, and to show a passion and love for their profession, subject matter, and learners. In addition, personal rationale seeks student teachers to draw from self-experiences. Hence, decisions for the implementation of Business Studies curriculum via use of educational technological resources by student teachers is rooted firstly on student teachers' personal reasons for using this pedagogy in TPACK, in conjunction with their self-experience. Student teachers' use of pedagogy should also be driven by their societal reasons for using this knowledge domain in their practices.

Social rationale for using pedagogy in TPACK to drive the integration of educational technological resources in Business Studies is greatly informed by societal opinions, which at time are non-factual and oral, and mainly reliant on implicit interpretations common in a certain society (Makumane & Khoza, 2020). Majola (2020) further maintains that as there is growth of modern technologies in South Africa and developing of communities, Business Studies student teachers' pedagogical practices need to be developed in order to meet the expectations of the economy, community, politics, and education. In affirmation, Mpungose (2016) asserts that student teachers teach learners from the community, to assist them in order to take back to the community regardless of their socio-economic background and gender. This suggests that student teachers' reasons for teaching Business Studies should aim at advancement of learners' skills to contribute to their community. Moreover, student teachers' societal reasons for teaching Business Studies relate to their communal experiences. This is because their reasons for teaching Business Studies are informed by public opinions, societal situations and local information (Khoza, 2015c). Furthermore, Business Studies student teachers' reasons for teaching Business Studies should not exclude professional reasons for teaching the subject, so as to meet the national aims of teaching and learning via educational technological resources.

Makumane and Khoza (2020) believe that professional rationale is influenced by factual knowledge, prescribed subject content and metacognition development. Thus, professional rationale is used to decide whether student teachers are successful or not within a specific subject (Business Studies) through mastery of prescribed content (Khoza, 2015c). Furthermore, student teachers' professional rationale for teaching Business Studies is documented in whether what was communicated to learners by student teachers has been effectively learned and taught or not, through formal/summative assessment (Khoza & Mpungose, 2018). According to the DBE (2011), the purpose of Business Studies is to help learners obtain and apply fundamental knowledge of business principles and skills to profitably and productively conduct business in changing business environments. Hence, it is imperative for student teachers who will be responsible for implementation of curriculum to have a clear understanding of the policy (Bongco & David, 2020). These studies thus reveal that it is of vital importance that Business Studies student teachers are in possession of a professional rationale when implementing Business Studies curriculum with the aid of modern technological resources. Professional rationale for teaching Business Studies is influenced by Business Studies student teachers' content experiences. This is because professional rationale seeks student teachers' reasons for teaching the subject to be framed by policy documents, scholarly articles, and journals.

Mpungose (2020a) carried out a qualitative case study of 31 purposively selected student teachers at a South African university conducting their school teaching practice (CAPS subjects) in the era of the 4IR. The study used file observation, reflective activity, and one-on-one semi-structured interviews for data generation. The study findings revealed that content knowledge is the main basic knowledge that student teachers must have during teaching practice. Moreover, the study found that student teachers were aware of subject themes covered in CAPS subjects, but they were not aware of learners' social and personal needs. These findings suggest that student teachers' implementation of curriculum was based only on professional reasons, neglecting the personal and social reasons for teaching. However, according to an interpretive case study conducted by Makumane and Khoza (2020) which explored educators' reasoning and effects on successful attainment and goals, merging the three propositions of rationale/reasoning is advisable in the implementation of curriculum. This suggests that Business Studies student teachers' successful use of pedagogy in TPACK to steer the integration of educational technological resources compels them to fully understand their personal, societal, and professional reasons for using this component to attain their intended

teaching goals. This brings us to the next vital component in student teachers' pedagogical knowledge – goals.

3.4.2 What are the pedagogical goals driving teaching?

Student teachers are expected to offer environments that best facilitate the achievement of national learning goals (Noddings, 2007). Moreover, it is imperative that student teachers are aware of the curriculum goals for guiding their teaching to fit national expectations and standards (Mpungose, 2016). Furthermore, scholars such as Oliva (1997), Ornstein and Hunkins (1998) and Noddings (2007) aver that goals are programmatic and general expectations without criteria of mastery or achievement. Hence, Khoza (2015), in agreement with Kennedy (2006), posits that goals towards which student teachers practice their craft ought to be dictated by aims, objectives and learning outcomes.

Aims are therefore best classified as general statements of educational intentions (Ramsden, 2003). Khoza (2016) further adds to the body of knowledge by pointing out that aims are goals in the long term. Thus, aims are not easy to measure because they are broad and often unspecific (Ramsden, 2003). Additionally, the CAPS document does not specify the aims of teaching each subject, but rather describes the aims of teaching from Grade R to Grade 12, and hence these aims confuse student teachers (Khoza, 2013b; Mpungose, 2016). This suggests that when student teachers are using educational technological resources to teach, they should draw from broad aims specified in the intended curriculum document. However, student teachers tend to define aims in a vague or unclear way, and are not able to communicate them to learners during pedagogical practices (Redelius, Quennerstedt, & Öhman, 2015). Nevertheless, Mohan (2019) warns that good and well stated aims enhance an effective pedagogical practice. Similarly, Khoza (2016a) posits that understanding the aims guides student teachers not to fall prey to the temptation of not doing what they are supposed to during the teaching process. Mpungose (2016) further asserts that before teaching any content, student teachers ought to be enhanced through their own aims for teaching. These studies imply that student teachers are compelled to understand the aims of using TPACK in their teaching, and to clearly describe these aims to learners in order to teach Business Studies effectively in alignment with the expectations of the intended curriculum. This also includes knowledge and understanding of learning objectives.

Objectives are more specific and realistic statements of the achievements expected from students (Kennedy, 2006; Ramsden, 2003). In addition, Khoza (2016) asserts that objectives are short-term goals. This implies that when student teachers use the TPACK framework to

guide their teaching, they should be able to define the expectations of achievements from learners. For instance, student teachers should use keywords such as understand, introduce, know, and many others that are recognisable and assessable in order to achieve what a student teacher hopes to attain at the end of each lesson (Mpungose, 2016; Shezi, 2019). Furthermore, objectives belong to the student teachers, as they define their intentions during the teaching and learning process (Khoza, 2013). The choice of any theory of teaching, teaching methods, content, resources (educational technological resources), and assessment should be aimed at achieving the specific learning objective. This is affirmed by Pepin, Xu, Trouche, and Wang (2017), who posit that teaching and learning would be useless if the student teachers fail to achieve the learning objectives. Additionally, Makumane and Khoza (2020) state that objectives form part of lesson planning, while taking into consideration intended outcomes for learners. Learning outcomes also play a huge part when student teachers are using TPACK to frame their pedagogical practices.

In South Africa outcomes are separated into learning outcomes and critical outcomes (Khoza, 2013b). According to this author, critical outcomes include 12 generic statements created by the South African Qualification Authority (SAQA) to guide all courses or qualifications in South Africa. Moreover, because critical outcomes are more broad and specific to learning intentions, they resemble aims and objectives. Kennedy (2006), in agreement with Adam (2004), asserts that learning outcomes define what learners are expected to understand, demonstrate and know at the end of learning experience. This suggests that learning outcomes are informed by self-experience, as they address the needs of learners in learning Business Studies. In affirmation, Moon (2002) notes that the principal aim of learning outcomes is concerned with the standard of learners' learning, and the relationship of assessment and learning outcomes. Additionally, Khoza (2015) believes that achievement of learning outcomes serves as an indicator of whether learning is taking place or learning is not happening. As a result, without observable learning outcomes, teaching and learning may not be successful (Khoza, 2013b; Mpungose, 2016). This implies that after the student teacher has taught with the aid of educational technologies, learners should be able to demonstrate and show understanding and knowledge of the lesson taught through informal assessment. For instance, after learning about the Business Plan, learners should be able to apply the acquired knowledge in drafting their own Business Plan.

Furthermore, Adam (2004), Kennedy (2006), and Khoza (2013b) maintain that learning outcomes employ active terms from Bloom's (1971) taxonomies of learning, including:

comprehension, knowledge, application, synthesis, analysis, and also evaluation. “Bloom's Taxonomy explains the process of learning and hence has proved to be a powerful tool to help develop learning outcomes,” report Mahajan and Singh (2017, p. 65). Moon (2002) believes that learning takes place if the subject is learning outcome driven rather than driven by objectives. This suggests that learning goals) are driven by self-experience (learning outcomes), as they have the capability of meeting learners’ needs when student teachers use TPACK to frame their teaching of Business Studies via educational technological resources. Furthermore, it is highly important to have a form of assessment tool or technique in order to determine the extent to which learning outcomes have been achieved (Kennedy, 2006; Moon, 2002). These authors go on to state that the connection between teaching, assessment and learning outcomes assists in making the overall learning experience more transparent and meaningful for learners. Hence, the following section discusses assessment activities.

3.4.3 Assessment activities

The term assessment stems from the Latin verb *assidere*, meaning to sit beside (Brainard, 1997; Satterly, 1989). Furthermore, according to Black and Wiliam (1998), the term assessment defines all those activities undertaken by student teachers and by their learners in assessing themselves. Similarly, according to a mixed method qualitative and quantitative online survey conducted by Kumar, Raghuwaiya, Sharma, and Dakuidreketi (2020), assessment is defined as a process used to support and measure learners’ learning in education. Moreover, Biggs and Tang (2003, p. 141) posit that assessment is utilised in “selecting, controlling or motivating students, and to satisfy public expectations as to standards and accountability”. Similarly, Satterly (1989) states that the primary aim of assessment is to facilitate a close relationship and a sharing of experience between student teachers and learners. Broadfoot and Black (2004) further posit that assessment serves as a communicative device between the world of education and that of wider society. According to these studies, assessment serves as an evaluation tool of whether teaching and learning of Business Studies via educational technological resources was successful or not. Therefore, student teachers’ experiences will assist them to understand and choose appropriate assessments during/after the process of teaching and learning of Business Studies via educational technological resources. Furthermore, according to Amua-Sekyi and Practice (2016), Black and Wiliam (2009), and Regier (2012) assessment is divided into summative assessment (assessment of learning), formative assessment (assessment for learning), and peer assessment (assessment as learning).

An interpretive study conducted by Khoza (2015c), reveals that summative assessment can also been known as assessment of learning (AoL). Moreover, summative assessment is an assessment that attempts to summarise learners' learning at the end of the learning process (Kennedy, 2006; Khoza, 2015c; Kumar et al., 2020). According to Biggs and Tang (2003), Black and Wiliam (1998), and Harlen and James (1997) summative assessment creates tests, marks, academic reports, and qualifications which are socially highly valued. Earl (2006) adds that the purpose of AoL is to verify what learners know, to illustrate whether or not the learner has met the requirements and/or displays how they're located on the subject in relation to others. In the context of this study, AoL reports whether student teachers were successful in implementing the intended Business Studies curriculum via educational technological resources. Hence, this suggests that AoL is used for grading and promoting learners and locating their experiences/knowledge in relation to intended curriculum (CAPS) requirements for Business Studies. Thus, AoL relates to content experience; student teachers draw from their Business Studies intended curriculum when dealing with AoL, so parents may see if the intended curriculum is being properly taught as planned (Mpungose, 2016). Hoadley and Jansen (2013) and Ellis (2017) further affirm the above by asserting that AoL must be valid and reliable in endorsing achievement and progression, and also in ensuring that schools are accountable to parents, learners, and the public for the achievement of every learner. Be that as it may, it also important that student teachers use classroom assessment to track their learners' progress in Business Studies in the process of teaching and learning via educational technological resources.

Furthermore, Black and Wiliam (2009) aver that formative assessment/assessment for learning (AfL) is a designed pedagogical context to promote learning and learners' engagement in their learning. This is affirmed by Saito and Inoi (2017), in agreement with Sadler (1989), who promote that AfL is a locally developed classroom assessment implemented by a student teacher and/or learners, to shape and improve the learners' knowledge through short-circuiting the randomness and inefficiency of trial and error learning. According to the action research study conducted by Elezi and Bamber (2017), AfL contributes to eliminating or minimising the gap between learners' existing knowledge and the aimed for objectives. These studies therefore vouch for the importance that Business Studies student teachers have knowledge of AfL in the process of their pedagogical practices with the affordance of educational technological resources. This will help to recognise indications of the remedial action required

for the desired learning outcome to be met. Moreover, AfL relates to self-experience: student teachers give learners feedback individually so as to rectify their mistakes and develop them personally, via completing any given Business Studies assessment task. Be that as it may, according to the interpretive study conducted by Ochuot and Modiba (2018), although AfL promotes active learning and should empower learners to develop the ability to contextualise Business Studies content, and make it more refined, richer, and rational, it should not be compromised and teachers in the study seemed not to be aware of this important principle. Another finding that emanated from this study was that teachers tended to rely on feedback that promoted the memorisation of facts rather than reflection and meaning making. This suggests that Business Studies teachers lack knowledge to conduct AfL and treat AfL as AoL.

Furthermore, Hoadley and Jansen (2013), in agreement with Earl (2006), aver that assessment as learning (AaL) happens when learners in their personal capacity monitor what they are learning and use the response from this monitoring to plan, adapt and even make major changes in what they understand. In addition, the intention of introduction of the notion of AaL is to extend the role of AfL, by placing emphasis on the role of the learner, not only as a contributor to the learning process and assessment, but also as the critical connector between learning process and assessment (Berry, 2013). Thus, AaL relates to communal experience, as learners interact, share knowledge and developmental comments with one another to improve their understanding of the content. An explorative study conducted by Ndoye (2017) aimed to explore students' perceptions of the mechanisms and processes through which peer and self-assessment can contribute to their learning, and reported that ten of the 16 respondents agreed that AaL contributed to development of a more supportive learning environment. These studies suggest that in this kind of assessment student teachers create a friendly learning environment for learners to make sense of the Business Studies content they are learning via educational technologies, through interaction with and developmental comments from their peers. Thus, the learning environment plays a pivotal role in Business Studies student teachers' pedagogical practices using educational technological resources.

3.4.4 Where are pedagogical activities happening (environment)?

The learning environment plays a very important role in pedagogy, as it defines where teaching and learning of Business Studies with the use of educational technological resources is happening. As such, the case study conducted by Ibem, Owoseni, and Alagbe (2017) on

students' perception of the learning environment defines the learning environment as diverse physical locations, cultures, and contexts in which learners learn. Additionally, Khoza (2015c) as well as Thijs and Van den Akker (2009) aver that the environment in curriculum answers the question of where learners are learning. This suggests that the environment defines where Business Studies learners learn the content of the subject. Moreover, a conducive learning environment plays a crucial role in providing learners with a variety of opportunities to create their knowledge via first-hand experiences (Bullard, 2010; Jan, 2017). Brown, Dehoney, and Millichap (2015) as well as Hoadley and Jansen (2009) share that environments include the face-to-face learning environment, online learning environment, and a blended learning environment.

Chisadza, Clance, Mthembu, Nicholls, and Yitbarek (2021) define face-to-face learning environment as synchronous or real-time learning in a physical classroom where student teachers engage with learners in real time. Personal contact between the learners and the student teachers is the important aspect of the face-to-face learning environment (Bali & Liu, 2018). This suggests that in this type of learning environment, student teachers interact with learners and learners also interact with their peers for teaching and learning of Business Studies curriculum via educational technological resources (textbooks and others). In addition, Thai, De Wever, and Valcke (2015) aver that the face-to-face learning environment is considered to be the main medium for giving immediate feedback and opportunities for synchronous physical interaction among learners and between learners and student teachers. The face-to-face learning environment therefore relates to expert experience, because learning takes place in a formal physical environment. Moreover, pedagogical practices also take place in an online environment when Business Studies student teachers are implementing the Business Studies curriculum.

Ubulom, Kayii, and Dambo's (2015) study on the impact of ICT on Business Studies students' academic performance argues that traditional methods of teaching Business Studies are no longer able to meet the needs of today's learners, who are known as digital natives (Marchetta et al., 2018). The online learning environment is the means of reaching such learners, particularly in Business Studies (Queiros & de Villiers, 2016). Chisadza et al. (2021) define online learning as a form of distance education which encompasses internet-based education where subjects are offered synchronously via live sessions online and/or asynchronously via learners' access to subject materials (slides, recorded lectures and others) online in their own

time. Additionally, Dung (2020) as well as Panigrahi, Srivastava, and Sharma (2018) aver that with the affordance of asynchronous courses, learners can enjoy a more flexible schedule that conveniently fits their available time and environment. Moreover, according to Zylfiu, Gerbeshi, and Rasimi (2020) online learning influences learners' motivation to learn as well as to actively participate in discussion forums or chat rooms. These studies thus suggest that via the use of online learning, Business Studies content delivery extends to the internet space, where learners can interact with other learners and with student teachers to share subject materials and conduct their pedagogical practices anytime and anywhere. Thus, the online learning environment leads student teachers to be influenced by a communal experience, as student teachers interact with learners via the use of online materials, regardless of time and location.

Blended learning is a combination of face-to-face with online learning. Hrastinski (2019), Rasheed, Kamsin, and Abdullah (2020) as well as Valiathan (2002) define blended learning as a mixture of online learning and traditional face-to-face learning, so that pedagogical practices take place both online and in the classroom. In affirmation, Herdan, Neri, and Russo (2019) state that for a blended learning system to be efficient, it should have a mixture of the most desirable elements of online learning and traditional face-to-face learning. Zhang and Zhu (2017) further aver that in blended learning, the online component becomes a natural extension of traditional classroom learning. As such, a blended learning environment provides flexibility in learning for both student teachers and learners (Khan, Shaik, Ali, & Bebi, 2012; Sithole, 2018). Aluja-Banet, Sancho, and Vukic (2019) state that the role of the blended learning environment is not limited to efficient and personalised learning, it also affords learners an opportunity to develop some of the necessary skills required for the future job market. This implies that the use of blended learning tools helps learners not only to learn Business Studies content in their own time, but also equips them with life skills that they will need. Furthermore, blended learning is influenced by self-experience, as student teachers have a choice of which environment to use for Business Studies pedagogical practices – an online environment or face-to-face environment. It is also important to understand student teachers' role with regard to their pedagogical practices.

3.4.5 Student teachers' role

Student teachers' role refers to the teaching approach that a student teacher employs to communicate the Business Studies curriculum to learners. Moreover, the adoption of a specific student teacher role in pedagogical practices has the ability to hinder or facilitate learners' ability to acquire content and skills (Zhu, Valcke, & Schellens, 2010). This suggests that student teachers' role has a great influence in the pedagogical process, as it is determined by the kind of approach a student teacher uses to communicate teaching and learning of Business Studies curriculum via the use of educational technological resources. Effective implementation of novel pedagogies requires understanding of the student teachers' role (Keiler, 2018). Furthermore, the teacher's role in the curriculum answers the question of how does one facilitate teaching? (Thijs & Van den Akker, 2009). Authors such as Akthar (2020), Anderson and Elloumi (2004), Hoadley and Jansen (2013), and Khoza (2013) aver that student teachers may assume the role of an instructor (teacher-centred), facilitator (learner-centred), and assessor (content-centred) in the implementation of Business Studies curriculum.

The role of a student teacher as a facilitator entails encouraging and facilitating the learners with the necessary tools and support in order to be more autonomous, and being focused on difficulties in grasping the content (Purnama, 2015). Some student teachers adopt learner-centred approaches where their role is restricted to facilitation of the teaching process (Ubulom & Ogwunte, 2017). This suggests that when student teachers adopt the role of a facilitator in Business Studies pedagogy via educational technological resources, learners learn at their own pace while the teacher provides guidance. As such, the role of a teacher as a facilitator is influenced by communal experience, as student teachers interact with learners in the pedagogical process in order to share ideas/information among themselves and the learners. Student teachers may also assume the role of being an instructor during Business Studies pedagogy as a supplement to a facilitative role.

Rico and Ertmer (2015), in agreement with Tawalbeh and AlAsmari (2015), posit that a student teacher as an instructor assumes a dominant role, being the authority in the classroom. Similarly, a case study conducted by Emaliana (2017) avers that student teachers' role as an instructor requires them to take an active role and present information to the entire class, while the learners' main role is to listen to the new information being given. This implies that the implementation of Business Studies curriculum via educational technological resources is

mainly dependent on the student teacher as the main source of knowledge. Hence, student teacher-centred pedagogy is influenced by self-experience, as student teachers use their own experiences to deliver the Business Studies curriculum. Moreover, student teachers can also assume the role of an assessor during Business Studies pedagogical practices.

Vile (2018), in agreement with Eskey (1992), shares that in content-centred instruction, content is the departure point and the focus of pedagogical practices. As such, when student teachers use content to drive their lessons, it means they are using a content-centred approach (Mpungose, 2016). Correspondingly, Khoza (2013) states that where student teachers are framing their lessons with time, they are utilising a content-centred approach. In other words, when student teachers are conducting their pedagogical practices in Business Studies via educational technological resources, driven by the time frame and prescribed content, they are using a content-centred approach. Moreover, different studies reveal that in a content-centred approach, a student teacher assumes the role of an assessor. According to a descriptive qualitative study by Rindu and Ariyanti (2017), a student teacher as an assessor is a teacher who evaluates whether all of the prescribed content has been covered in a certain time period. However, as much as it is important to cover all the prescribed content for the learner to succeed in moving to the next grade, this does not mean that the learner has learned it (Petersen et al., 2020). As such, a content-centred approach is influenced by content experience, as student teachers assume the role of an assessor to cover the content of Business Studies as prescribed by policy documents in the stipulated time frame.

CHAPTER FOUR

Research design and methodology

4.1 Chapter Overview

This chapter takes the reader through all of the processes undertaken to reach the objectives of this study. It starts by discussing the research paradigm chosen for this study, and the research approach that the study identifies with. This is followed by how the participants of the study were chosen, how data generation was conducted, and what drawbacks were encountered in the process of data generation and how they were overcome. It further outlines the steps taken to strengthen the integrity and trustworthiness of the research findings, and how ethical issues were considered.

4.2 Location of the study

The study was conducted in Africa at a South African university, specifically the University of KwaZulu-Natal's (UKZN) Edgewood Campus. The study focus was on students who did or are doing their teaching practices in the uMgungundlovu District. The primary course offered by this campus is a Bachelor of Education. Edgewood Campus is located in Pinetown, East of Durban. It is the main location of UKZN's Faculty of Education. The students in this institution are demographically mixed, and come from both rural and urban areas. Edgewood Campus includes African, coloured, Indian, and some white students. Ten Business Studies student teachers who did their teaching practices in uMgungundlovu Districts would be inducted as participants in this study.

4.3 Interpretive research paradigm

Guba and Lincoln (1994) define a paradigm as characterised by a set of basic beliefs which deal with the ultimate or first principles. Denzin and Lincoln (2000) further clarify ultimate or first principles as defining where the researcher is coming from in order to construct meaning embedded in data. Rehman and Alharthi (2016), in agreement with Bertram and Christiansen (2014), share that a paradigm defines our way of studying and understanding the reality of the world. In other words, our experiences and beliefs of the world influence how we see/construct meaning of the world presented to us. Thus, the selected paradigm directs the researcher in philosophical assumptions about the research, and also in the selection of instruments, data generation tools, participants and method used (Denzin & Lincoln, 2000; Kivunja & Kuyini, 2017).

There are different paradigms in educational research, such as interpretivism, and the critical and positivism/post-positivism paradigm (Bertram & Christiansen, 2014; Candy, 1989). According to Chilisa (2019), positivism/post-positivism's reason for doing research is grounded on discovering laws which are generalisable and govern the universe, while the critical paradigm seeks to transform or change society by considering ideological and political context. The interpretive paradigm seeks to understand the world as it is from a subjective point of view, and seeks an explanation within the frame of reference of the participant rather than the objective observer of the action (Ponelis, 2015).

Studies such as those of Guba and Lincoln (1994), Pham (2018) and Scotland (2012) share that paradigm entail the following: ontology, epistemology, methodology, and methods. Ontology explains what can be known, more specifically covering what we believe can exist (Berryman, 2019). Additionally, according to Bahari (2010, p. 21), "epistemological assumptions can be regarded as a question of what is (or should be) regarded as acceptable knowledge in a discipline". The methodology describes how and why the research is being conducted and guides the choice of methods used (Creswell & Creswell, 2017), which are the instruments used in data generation and analysis (Bertram & Christiansen, 2014).

This study is located within the interpretive research paradigm. The interpretive paradigm is described as one that looks for culturally and historically obtained interpretations based on individuals' social life and experiences (Bertram & Christiansen, 2014; Sarantakos, 2005). In affirmation, Sławecki (2018) posits that in the search for explanations, the interpretive paradigm refers to consciousness, beliefs, ideas and experiences of people who from time to time construct and reconstruct their actions. Additionally, according to Putnam and Banghart (2017) interpretive researchers focus on the complexities of meaning as enacted in language, symbols, and social interactions. Moreover, since researchers in the interpretive paradigm apply themselves to real-word situations as they naturally unfold, they are naturalistic (Antwi & Hamza, 2015). As such, interpretive researchers tend to be non-controlling, unobtrusive and non-manipulative (Chilisa, 2019). In other words, through interaction with participants, interpretive researchers get to understand (without interference) participants' experiences, beliefs, and social lives around a certain phenomenon being explored, which in the context of this study was student teachers' experiences.

The qualitative interpretive paradigm assumes a relativist or internal ontology, which conceives of human reality as socially constructed and shaped in ways that make it multifaceted and fluid

(Sparkes & Smith, 2014). In other words, what one student teacher views as reality may differ from what another student teacher views as reality. Using Zoom group discussion interviews, online reflective activities, and one-on-one WhatsApp semi-structured interviews as data generation methods, I was able to obtain information on the diversified experiences of ten respondents who participated in my study on the use of educational technological resources in teaching and learning of Business Studies. Epistemology in the interpretive paradigm is subjective and grounded on real-world phenomena (Scotland, 2012) – in the context of this study, experiences. As a result, epistemologically this study used the interpretive paradigm to produce knowledge through exploring and understanding the social world of student teachers when they use technological resources in Business Studies teaching and learning, as suggested by (Al Saadi, 2014).

One of the strengths of the interpretive paradigm is that via the use of diverse views in looking at the phenomenon (experiences), interpretivist researchers not only describe objects, events or humans, but also deeply understand them in their social context (Alase, 2017; Pham, 2018). Thus, in this study this strength was used to describe and deeply understand student teachers' experiences on the use of educational technological resources in teaching and learning of Business Studies.

However, one of the drawbacks of the interpretive paradigm is that it encourages use of a small number of cases, which does not cater for a wide population and thus does not allow for generalisation of the data (Hammersley, 2012). To eliminate this weakness in this study, I used triangulation of data methods to strengthen validity. Also, the research design and methodology are explained in detail, to make the reader aware of all of the processes undertaken in the study.

4.4 Qualitative research approach

This study adopted a qualitative research approach, which is grounded on some assumptions. Sawatsky, Ratelle and Beckman (2019), in agreement with Walters (2001), believe that assumptions of the qualitative research approach include topic specificity and inductive reasoning. In affirmation, Creswell and Poth (2017 assert that qualitative research is inductive, is a meaning-making process, is descriptive, and participants are taken as primary instruments. Furthermore, this approach is understood by Bertram and Christiansen (2014), Creswell' (2014) and Denzin and Lincoln (2017) as to be used for understanding and exploring the meaning that groups or individuals assign to a human or social problem. Correspondingly, Yin (2015) posits

that qualitative research entails studying the meaning of people's lives, as experienced under real-world conditions. In other words, it enables the researcher to get an in-depth understanding of participants' everyday life and what their thinking is when confronted by different situations/circumstances. Moreover, qualitative research is a situated activity that locates the observer in the world (Creswell & Poth, 2018; Queirós, Faria, & Almeida, 2017). In this study I used this approach to understand student teachers' experiences of the use of educational technological resources in their teaching of Business Studies.

In addition to above, Maxwell (2012) argues that qualitative research works with the universe of meanings, aspirations, motives, values, beliefs, and attitudes, which links to a deeper space of processes, relationships, and phenomena which cannot be reduced to the operationalisation of variables. As such, one of the strengths of qualitative research is that it consists of multiple realities and is not statistical (Rahman, 2020). Similarly, as this study was seeking to ascertain the holistic experiences of participants, which could not easily be achieved through scientific methods, this strength was used to capture in-depth and dynamic experiences of student teachers' use of educational technologies in their teaching of Business Studies.

One of the drawbacks of qualitative research is that interpretation of data may differ from what is actually said by the participant (Sarantakos, 2005). To overcome this, I recorded participants' responses and presented them directly as they came from the participants (verbatim).

4.5 Research design

According to Bertram and Christiansen (2014) a research paradigm depicts the beliefs which the researcher has about what can be thought about the world, and the research design reflects beliefs about what might be the most helpful or noteworthy method for acquiring this information. This study adopted a case study research design. Creswell and Poth (2016) posit that case studies include exploration of an issue through study of at least one case inside a limited framework, for example, a setting or a specific context. Crowe et al. (2011) define case study as a research approach utilised to generate a multi-faceted and in-depth understanding of a complex issue in its real-life context. Furthermore, Fraenkel, Wallen, and Hyun (2019), in agreement with Harrison, Birks, Franklin, and Mills (2017), add that case studies are useful when a researcher seeks to understand a certain problem or situation in more depth. In the context of this study, the case study research design was useful for capturing student teachers' (participants') experiences of the use of educational technologies to supplement Business Studies pedagogy in a real-life (teaching) context.

Furthermore, case studies may be explanatory, exploratory or descriptive (Yin, 1984; Zainal, 2007). According to Yin (2003), an explanatory case study is used when a researcher seeks to answer a question that needs to explain the presumed causal links in real-life interventions that are too complex for experimental or survey strategies. The latter author adds that the exploratory case study is utilised to explore situations where the intervention that is evaluated has no single clear set of outcomes.

This study adopted a descriptive case study of ten Business Studies student teachers. Zainal (2007) maintains that descriptive case studies aim to richly describe the natural phenomena that occur within the data in question. Likewise, Yin (2003) maintains that descriptive case studies are good for offering, revealing and reaching insights when one investigates a particular phenomenon in a social or educational setting. Likewise, in this study a descriptive case study was a valuable instrument as I was able to discuss the phenomenon (experiences) of this study thoroughly in more detail.

Furthermore, one of the strengths of the case study research design is that the detailed qualitative accounts usually produced in case studies are not limited to describing the data in the real-life context, but also assist in explaining the complexities of real-life situations which may not be captured through survey or experimental research (Zainal, 2007). Similarly, in this study case study research enabled me not only to understand student teachers' experiences of the use of technological resources in the teaching and learning of Business Studies, but also explained why their experiences are shaped in a particular way.

One of the drawbacks of the case study research design is that findings include personal impressions and biases, and thus validity could not be ensured (Sarantakos, 2005). This weakness was eliminated by addressing the validity of the findings through triangulation of data generation methods, which were WhatsApp semi-structured interviews, a Zoom group discussion and reflective activity. This is supported by Johansson (2007, p. 8), who argues that "triangulation provides an important way of ensuring the validity of case study research".

4.6 Sampling

In this study recruitment of participants was done by sending online flyers through email to potential participants of this study. In addition, I asked participants to assist by forwarding the invitation to other potential participants who are studying Business Studies and have done or are doing their teaching practice in the uMgungundlovu District. I used a Facebook online platform (Edgewood student page) to seek participants who might be willing to take part and

were suitable for the study sample. Additionally, I used the Edgewood teaching practice office to source the list of students who chose the uMgungundlovu District as the area to do their teaching practice, and attempted to open communication channels with them. Through these channels of communication, I managed to recruit ten participants who took part in this study.

Table 4.1 below provides a description of the demographic characteristics of the participants who were recruited for this study.

Table 4.1: Demographic characteristics of the ten participants

Level of study	**Gender**	**Ethnicity**	**Age (years)**	**No. of participants**	**No. of teaching practices conducted**
Third year	Female	Black	18–27	2	2
Third year	Male	Black	18–27	3	2
Fourth year	Female	Black	19–30	3	2
Fourth year	Male	Black	19–30	2	2

The following paragraphs provide an in-depth discussion of the methods used for sampling. Mugo (2002) defines sampling as the act, technique, or process of choosing a suitable sample, or a representative part of a population, with the purpose of determining characteristics or parameters of the whole population. Moser and Korstjens (2018a) further define sampling as the procedure of providing context by choosing or probing situations or participants who will generate rich information on the researched phenomenon. In other words, sampling is about choosing a sample of people or situations from a wider population/context where a researcher intends to do research. Bhardwaj (2019) posits that types of sampling techniques include, among others, probability sampling and non-probability sampling.

Acharya, Prakash, Saxena, and Nigam (2013, p. 330) argue that “By probability sampling, we mean each individual in the population has an equal chance of being selected in the study”.

Moreover, probability sampling consists of simple random sampling, systematic random sampling, stratified random sampling, cluster sampling, multiphase sampling, and multistage sampling (Mellenbergh, 2019; Sharma, 2017). Additionally, according to Deshpande and Girme (2019), in non-probability sampling (also known as non-random sampling) samples are not randomly selected and as such each and every element does not enjoy an equivalent chance of being selected for the sample. Moreover, non-probability sampling comprises purposive samples, such as quota sampling, dimensional sampling, snowball sampling, and convenience sampling (Bertram & Christiansen, 2014; Cohen et al., 2018; Vehovar, Toepoel, & Steinmetz, 2016). In this study purposive and convenience sampling were employed with the aim of sampling ten Business Studies student teachers carrying out their teaching practice in the uMgungundlovu District, in order to understand their experiences of the use of educational technologies to supplement Business Studies teaching and learning.

4.6.1 Purposive sampling

Purposive sampling, also known as subjective or judgmental sampling, was employed in this study (Sharma, 2017). Moser and Korstjens (2018a), Bertram and Christiansen (2014) as well as Yin (2015) understand purposive sampling as the procedure of providing context by choosing or probing situations or participants who will generate rich information on the researched phenomenon. Etikan and Babtope (2019) state that purposive sampling forms part of non-probability sampling grounded on the knowledge and understanding of a researcher in picking the required sample from a population for a study. In addition, Sarantakos (2005) posits that the strength of purposive sampling is that the respondents are knowledgeable in the area of interest for the study and are suitable for the study. This strength of purposive sampling allowed me to probe for participants who were knowledgeable about the focus of my research. Thus, in this study ten Business Studies student teachers were chosen because they had experience of doing their teaching practices (teaching Business Studies) in uMgungundlovu District. As such, they were able to share their various experiences of teaching Business Studies via educational technological resources, which included neutral experiences, communal experiences, and content experiences.

One of the drawbacks of purposive sampling is that it can be inclined to researcher bias, from which the idea that the sample is chosen on the basis of the researcher's judgement is no good defence (Sharma, 2017). However, the aforementioned author goes further to argue that this only becomes an issue where judgements are ill-conceived or poorly considered since they are not rooted in clear criteria. In this study this was thus resolved by setting clear criteria for

selection of participants which are guided by the characteristics they possess, which are being Business Studies student teachers who are doing/have done teaching practices specifically in uMgungundlovu District. Furthermore, convenience sampling was also used in this study, as discussed below.

4.6.2 Convenience sampling

In conjunction with purposive sampling, convenience sampling was employed to select participants for this study. Cohen et al. (2018), in agreement with Sharma (2017), as well as Yin (2011), understand convenience sampling as selecting data generation units or participants because of their ready availability and suitability for the study. In most cases participants are selected because they are in the right place at the right time (Acharya et al., 2013). Additionally, the strength of convenience sampling is that it is easy, faster and inexpensive in contrast to other sampling techniques (Taherdoost, 2016). As such, it was easier to select ten Business Studies student teachers within my university (UKZN Edgewood Campus). These participants were selected because they were closer to me and also had experience of teaching Business Studies in uMgungundlovu District. Moreover, I used the teaching practice office, phone calls, emails, and social media (WhatsApp and Facebook) to source my participants within the university, which saved both time and money.

Convenience sampling does not come without any drawbacks. Denzin and Giardina (2016) together with Sharma (2017) share that the drawback of convenience sampling is that a researcher may sample participants who are not representative of the population being studied, or exaggerate some particular findings from the study. To eliminate this, I chose Business Studies student teachers who are registered at UKZN, majoring in Business Studies, and also have experience of teaching in uMgungundlovu District.

4.7 Methods of data generation

Thorne (2016), upholds that researchers within interpretivist traditions refer to the procedure of engaging with data as data generation. The author further posits that this happens as both the researcher and the participant create the data, decide, and understand what data is and what is significant within it. This study employed three data generation methods: one- on-one semi-structured WhatsApp interviews, an online reflective activity, and Zoom group discussion interviews.

4.7.1 Zoom group discussions

This study employed Zoom group discussions as one of the data generation methods. According to Wong (2008), in agreement with Corrao (2000), the focus group discussion forms part of the qualitative research method, where the interviewer (also known as the moderator) asks research participants specific questions about an issue or topic or in a group discussion. Newcomer, Hatry, and Wholey (2015, p. 506) assert that "a focus group is a planned discussion led by a moderator who guides a small group of participants through a set of carefully sequenced (focused) questions in a permissive and nonthreatening conversation". In this study two separate sets of Zoom group discussions were conducted, due to the fact that when the first group discussion was conducted via Zoom some participants were busy and others did not have data. In the first group discussion, six Business Studies student teachers were able to participate, and the other four participants who could not participate in the first session took part in the second session. The Zoom group discussion focused on experiences of student teachers of the integration of educational resources in teaching Business Studies. The questions focused on the aspects depicted in Figure 4.1 below. For instance, through group discussion interviews I was able to ascertain Business Studies student teachers' experiences of how they facilitate Business Studies pedagogy via the use of educational technological resources. These experiences consisted of neutral, communal and content experiences.

One of the strengths of group discussion interviews is that it is time-efficient and generates a wide range of responses that could not be obtained in individual interviews (Cohen et al., 2018). In both group discussions that I conducted I was able to get various responses of student teachers' experiences of the integration of educational technological resources in supplementing Business Studies teaching within a short space of time. In the first session the group discussion took 50 minutes, whereas in the second session I was able to get data on the set question for group discussion in the space of 45 minutes. However, focus group discussions do not come without any limitations.

According to Smithson (2000), some members of the group may dominate the group discussion, leading to other members' voices not being heard. This was resolved in this study by encouraging every member of the group to share their experiences on the question being discussed, which is one of the tactics suggested by the latter mentioned author. A week after I conducted the Zoom group discussions, I started having one-on-one WhatsApp semi-structured interview sessions with the participants.

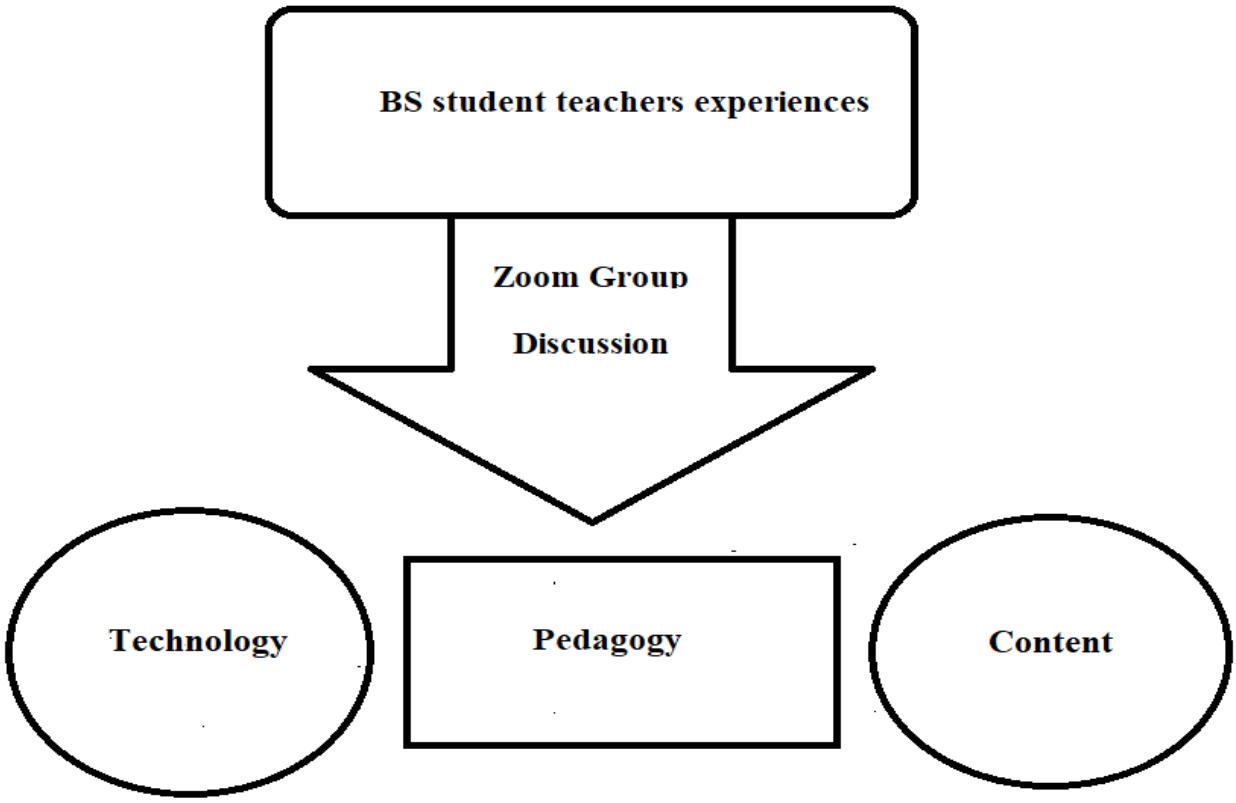


Figure 4.1: Focused aspects of the Zoom group discussion interviews.

4.7.2 One-on-one semi-structured WhatsApp interviews

Brinkmann and Kvale (2015) understand semi-structured interviews as interviews held with the aim of acquiring descriptions of the life world of the interviewee, so as to interpret the meaning of the described phenomenon. Corbetta (2003) argues that semi-structured interviews are held in the order in which different topics are discussed through a conversation, and the wording is left to the researcher's discretion. Bertram and Christiansen (2014) add that semi-structured interviews represent focused and structured conversations where the researcher has specific information they want to glean from participants, and has designed certain questions to put to the interviewees or participants in order to gain this information. I found the one-on-one semi-structured WhatsApp interviews to be suitable for generating data for this study, as

it allowed participants to give detailed accounts of their various experiences in the use of educational technologies in teaching Business Studies (self, communal, and content experiences). Moreover, I ensured that participants were in a relaxed and informal environment. I discussed the interview schedule with all of my participants before the interview session.

In addition, Kajornboon (2005) posits that the strength of semi-structured interviews is that the researcher is able to prompt and inquire deeper into the given topic. Likewise, I had prepared questions (the same questions for all ten participants) prior to the interview session. These questions were framed by the theoretical framework of the study and some concept of curriculum. For instance, one of the questions sought to understand student teachers' reasons for teaching Business Studies (rationale). However, some of the questions emanated during the research, drawing from participants' responses to a question that was asked. I held ten one-on-one WhatsApp interview sessions, each interview lasting from above 30 minutes to below an hour. Moreover, since these interviews were conducted using online methods (WhatsApp), issues of data arose. Although some of the participants had received data from the university, by the time we conducted the interviews only seven of them still had the data during the time of the interview sessions, and three of the participants had to be given data. I loaded data for the three participants in order to administer the semi-structured WhatsApp interviews.

One of the drawbacks of one-on-one semi-structured WhatsApp interviews is that they are time consuming (Newcomer et al., 2015a). However, in this study, to conserve time, clear guideline questions were set to keep the interview intact and focused on the explored phenomenon, which is drawing on student teachers' experiences. In affirmation, Jamshed (2014) posits that an interview guide comes in handy in keeping control of the time so as to ensure that the interview is focused on the desired line of action. Additionally, the latter author mentioned that interviews generate an enormous amount of textual data, which takes time for the researcher to transcribe. To overcome this drawback in my study, I downloaded an app from the Android playstore called Otter, which allowed me to record participants' responses while it also transcribed the recordings.

4.7.3 Online reflective activity

In this study, an online reflective activity was also used to supplement the one-on-one semi-structured WhatsApp interviews, and Zoom group discussion interviews. According to Cohen et al. (2011), reflective activities entail a written series of questions which address the phenomenon being explored by the researcher. Reflective activities provide authentic data and

reflect the experiences of all participants; the researcher's subjective beliefs do not hold precedence over the views of participants (Cohen et al., 2011). One of the strengths of the online reflective activity is that it authorises student teachers to share their experiences in the absence of the researcher, so as to allow them freedom to express themselves (Mpungose, 2016). In affirmation, Akerson et al. (2000) assert that reflective activities serve as an instrument to allow student teachers to open up and reflect on their skills, shortcomings, and challenges in their teaching and learning. Moreover, in keeping with the strength of the reflective activity, I ensured that I gave my participants enough time to answer the set series of questions for this study in my absence and in their own time, to share their experiences of the use of educational technological resources integration in Business Studies.

Furthermore, Mpungose (2016) maintains that one of the weaknesses of reflective activities is the issue of honesty; the researcher cannot be certain that participants are honestly reflecting on their genuine experiences. To address this shortcoming, I explained what was expected of participants and also gave them enough time to provide feedback to the questions.

In administering the online reflective activity, I designed an open-ended questionnaire which was driven by my theoretical framework (TPACK), and distributed an online reflective activity (through email) to all ten participants. They were given a two-week period to complete these, to enable the researcher to gain an understanding of their experiences of technological integration in Business Studies teaching.

The reflective activity included questions such as 'What content are you teaching in Business Studies?' This question was seeking student teachers to draw from their experiences of Business Studies content knowledge, whereas other questions required them to draw from their pedagogical knowledge of Business Studies. Such a question was 'Toward which goals are you teaching Business Studies (goals, aims and objectives)?', which required student teachers to share their teaching practices experiences towards achieving goals, aims and objectives. After the participant was done with answering the reflective activity, they sent it back to me via email and some via WhatsApp.

4.8 Data analysis

Bertram and Christiansen (2014) define data analysis as a close inspection or study through system or partition of a whole into its parts for the purposes of the study. Cohen et al. (2018) posit that the process in data analysis entails noting patterns and themes, and describing and understanding the generated data. In other words, data analysis is about making sense of data

generated via different methods of data generation. In the context of this study, I refer to the data generated through one-on-one WhatsApp semi-structured interviews, online reflective activities, and Zoom group discussions. Archer (2018) further asserts that qualitative data analysis is the tool used by researchers to make sense of the enormous quantities of data, in order to present the data in a systematic manner to their readers. Moreover, quantitative research data is mainly numerical, with various statistical techniques employed to examine patterns and seek relationships (Flick, 2014). The latter author further posits that in qualitative research the data are mainly graphic, textual, audio or other non-numerical data. Data generated in this study was in the form of text (online reflective activities) and an audio format (Zoom group discussions and one-on-one semi-structured WhatsApp interviews), which was also transcribed into text.

There are numerous approaches to analyse qualitative data, ranging from conversation and discourse, content, thematic, and grounded theory to narrative (Archer, 2018). In this study I employed thematic analysis. Braun and Clarke (2019) define thematic analysis as the process of systematic organising, identifying, and making meaning of the data patterns involved across data. Moreover, thematic analysis is not only limited to describing data, it also consists of interpretation in the processes of choosing codes and making themes (Kiger, & Varpio, 2020). Mitchell, Fisher, Hastings, Silverman and Wallen (2010) posit that thematic analysis is the minimum description and organisation of a series of data that is widely used in data analysis in qualitative research.

Thematic analysis incorporates two approaches, inductive and deductive data analysis (Braun & Clarke, 2006). According to Bertram and Christiansen (2014), inductive analysis works from the specific to broader generalisations, while deductive reasoning works from the general to the specific. In this study both inductive and deductive qualitative thematic analysis were used. To identify patterns (student teacher experiences) of data generated from the three methods used in this study (namely Zoom group discussion interviews, online reflective activity, and one-on-one semi-structured interviews) I used the inductive approach. Creswell (2012) strengthens this argument by maintaining that qualitative data is inductive as it shifts from detailed data (from Zoom group discussion interviews, online reflective activity, and one-on-one semi-structured WhatsApp interviews) to general codes and themes (transcriptions). The deductive approach was further used to allow themes to emerge from the data which could not be captured through the use of the inductive reasoning/approach.

Furthermore, one of the strengths of thematic analysis, according to Cohen et al. (2018), is that it helps the researcher to display multiple perspectives and experiences of participants, supported by diverse citations that provide evidence to the reader. Likewise, in this study thematic analysis helped me to categorise Business Studies student teachers' responses into themes, accompanied by quotes from their responses to all of the research data generation methods of this study. Moreover, themes were made following the concept of the theoretical framework (TPACK) and also some concepts of curriculum.

Cele (2019) points out that one of the drawbacks of thematic analysis is the issue of transcription, as this requires an enormous amount of time and money (Bokhove & Downey, 2018). To overcome this limitation, I did all of the interviews myself through online platforms, where I also employed the use of an App called Otter which allowed me to record all of the interviews conducted via Zoom and WhatsApp, while at the same time the App was making notes. This saved the time required for transcription and also saved money (which would have been paid to people to transcribe for me). Another issue that had to be given attention was ensuring the trustworthiness of the study during data analysis.

4.9 Trustworthiness

Moodley (2020), asserts that the quality of research is measured through trustworthiness. As such, it is pivotal that researchers form the procedures and protocols needed for a study to be deemed worthy of consideration by readers (Connelly, 2016). Korstjens and Moser (2018b) posit that trustworthiness describes the degree to which the findings of the study can be trusted. In affirmation, Pilot and Beck (2014) understand trustworthiness (also known as rigour) of a research study as describing the degree of confidence in the data, methods, and, interpretation used to ensure the quality of the research. In other words, trustworthiness in a study provides the reader with the steps taken to assure the trust and quality of the research findings.

Lincoln and Guba (1985) suggest that in order for interpretivists to meet the trustworthiness criteria, they must take note of four considerations: credibility, transferability, dependability, and confirmability. Since this study forms part of interpretive research, which had the purpose of understanding student teachers' experiences of the integration of educational technological resources in supplementing Business Studies teaching and learning, these four principles were taken into consideration in order to ensure its trustworthiness.

4.9.1 Credibility

Credibility establishes whether the findings of research denote reasonable information taken from participants' original data, and precise interpretation of the original views of participants (Guba, 1985). Moreover, Connelly (2016) points out that a reader in search of the credibility of the study might ask whether the research was conducted employing standard procedures normally employed in the specified qualitative approach, or whether a satisfactory defence was provided for differences. In other words, credibility as part of the consideration of a study's trustworthiness deals with the truth of the research findings, reflecting the real experiences of participants without the researcher's subjectivity interfering in the interpretation of findings.

Connelly (2016), in agreement with Anney (2014), shares that credibility could be ensured through multiple methods, such as triangulation, prolonged engagement with participants' member checking, or peer debriefing. In addition, the quality of this study was improved by using triangulation; I generated data using three different methods (Lincoln & Guba, 1985). These three data generation methods were online reflective activities, Zoom group discussions and one-on-one semi-structured WhatsApp interviews. In addition, I also took notes and made recordings during the interview process. Moreover, in keeping up with trustworthiness considerations, confirmability was also considered in this study.

4.9.2 Confirmability

Bitsch (2005) posits that confirmability challenges the issues of researcher prejudice and bias. Additionally, according to Shelton (2003), the term of confirmability is the qualitative researcher's equivalent to objectivity. The latter author further posits that certain steps must be taken to make sure that the study findings represent the results of ideas and experiences drawn from participants, rather than the preferences of a researcher. Moreover, Connelly (2016), in agreement with Lincoln and Guba (1985), asserts that methods of confirmability include qualitative researchers keeping their detailed notes of all their decisions and analysis as it progresses, to make the findings of the study accessible for confirmation by other researchers. In this study, in order to ensure the integrity and confirmability of the findings, I clearly described the methodology. I also made interview notes together with the audio recordings. Additionally, I presented data in my findings supported by direct quotes from the student teachers' experiences of educational technologies use in supplementing Business Studies pedagogy. Moreover, Shelton (2003) points out that the role of triangulation in promoting confirmability must once more be emphasised in this context as reducing the effect of

researchers' bias. I also employed triangulation of methods to reduce bias. Another aspect which was addressed in this study to strengthen trustworthiness was dependability.

4.9.3 Dependability

Elo et al., (2014) defines dependability as referring to the constancy and firmness of the data over time, and also in different situations. Moreover, Shelton (2003, p. 71) posits that dependability could be addressed via "employment of overlapping methods; and in-depth methodological description to allow study to be repeated". To ensure dependability in this study, I included explicit research questions and clearly explained the research design and methodology. Moreover, the aforementioned was also strengthened by keeping complete set of notes on decisions made during the research process for the purposes of an audit trail (Korstjens & Moser, 2018b). Furthermore, Lincoln and Guba (1985) posit that dependability includes participants' evaluation of the study findings. Participants were given a chance to review the study findings in order to confirm that it represented their shared experiences. Lastly, the final step taken in this study to ensure trustworthiness was consideration of the transferability of research findings.

4.9.4 Transferability

Polit and Beck, (2014) believes transferability refers to the extent to which the research findings can be transferred to another context with another group. Moreover, Bitsch (2005) further posits that the findings must represent a resemblance to the context from which they came and the context to which they are transferred. Be that as it may, in qualitative research transferability is considered similar to generalisation (Connelly, 2016). Shelton (2003) posits that as findings of qualitative research are representative of a small population or a particular context, it is impossible to generalise findings to other situations and populations. However, Lincoln and Guba (1985) points out that the researcher facilitates the judgement of transferability of findings by providing thick descriptions. In this study transferability was ensured by providing a detailed description of the research procedures: a clear explanation of the research methodology; an explanation of the research approach; and a summary of the data generation and data analysis processes, to enable readers to draw conclusions as to whether findings may be transferred in other contexts.

4.10 Ethical issues

Orb, Eisenhauer and Wynaden (2001), states that ethical issues always exist in any kind of research. Moreover, research ethics refers to behaviours that are considered right or wrong in the research (Bertram & Christiansen 2014). In qualitative research ethical considerations have

a particular resonance, due to the in-depth nature of the study process (Arifin, 2018). As this was a qualitative study dealing with human subjects (student teachers), it was important to take into consideration right and wrong conduct so as to protect participants' rights and ensure that the study did not bring them any harm. Orb, Eisenhauer and Wynaden (2001) further assert that harm to participants in research can be reduced or prevented by using appropriate principles of ethical consideration. Bertram and Christiansen (2014) and Cohen et al. (2018) suggest ethical principles which can be employed to address research ethics, which include non-maleficence, beneficence, anonymity, and autonomy.

Cohen *et al.* (2018), Bertram and Christiansen (2014) as well as Steenkamp (2021), non-maleficence stems from the duty of not causing and inflicting harm upon other people. According to the aforementioned authors, in ensuring non-maleficence in the study the researcher must ensure that they prevent actions that can cause harm to participants. To ensure non-maleficence in this study, I refrained from harming participants physically and psychologically, through avoiding asking embarrassing questions, and not forcing my participants to divulge information which may result in anxiety or fear (Akaranga & Makau, 2016). Additionally, in keeping with this principle of ethics, this study protected the wellbeing of participants and their safety by not disclosing their names in the study findings and using pseudonyms instead. The study further complied with the concept of beneficence as part of keeping up with ethical principles.

Steenkamp (2021) understands beneficence as relating to the idea of actions that aim to treat other people well. Bertram and Christiansen (2014) believe that a study should be directly beneficial to its participants, other researchers, or the educational community at large; it is considered unethical and selfish if the study benefits only the researcher (Cohen *et al.*, 2018). In keeping with this ethical principle, this study contributed to the educational community by contributing its findings to the literature and also making recommendations about future research based on the experiences of student teachers, so as to improve the practice (integration of educational technological resources in Business Studies). As a result, this study provided findings to assist student teachers to modify their use of educational technological resources correctly in supplementing Business Studies teaching and learning. It also provided university lecturers with a close inspection of what to improve in order to aid proper curriculum implementation via educational technological resources, adding to the body of literature by filling knowledge gaps on the use of these resources by student teachers.

Mugenda (2003), Fenton, et al., (2019) as well as Cohen et al. (2018) share that anonymity is about not identifying the cultural or ethnic background of participants, refraining from referring to them by their actual names, and not exposing any other sensitive information about them. In this study I ensured the anonymity of participants by using pseudonyms and ensuring that reflective activities provided no information that identified them. However, according to Cohen et al (2018), one of the shortcomings in ensuring anonymity is that interviews cannot guarantee the anonymity of participants. So, in terms of the one-on-one semi-structured WhatsApp interviews and Zoom group discussions, the researcher treated participants' information as confidential, including protecting recordings and transcripts. Additionally, in the online reflective activity participants were not asked to fill in their names. Moreover, participants received consent forms detailing their rights, how the study will protect their confidentiality, their freedom to withdraw, and all other relevant information that they needed to be aware of if they participated in the study.

4.11 Anticipated problems/limitations

Due to the fact that there was an ongoing coronavirus pandemic which was widespread all over the world, including in South Africa where the study was conducted, physical contact for data generation was restricted. Some participants (student teachers) were carrying out their academic activities through online platforms, and were in different places where it was not easy to reach them. However, I employed online methods for data generation to overcome this limitation. I also recruited the participants of this study through online methods, using the teaching practice office to gather relevant information on potential participants, and thereafter reaching out to them through calls and emails.

Another limitation encountered during data generation was that I couldn't conduct a Zoom group discussion with all of my participants at once. This was because some participants were busy, some had a poor internet connection, and some had no data at all. To overcome this limitation, I held two Zoom group discussion meetings, the first with the participants who were able to take part. I then arranged another meeting with the remaining participants, where I assisted those who had no data for a Zoom call with data, and made sure that were available by allowing them to set a date that was suitable for all participants.

CHAPTER FIVE

Research findings and discussion

5.1Chapter Overview

This chapter focuses on discussion of the research findings that emanated from the online reflective activities, Zoom group discussions and WhatsApp one-on-one semi-structured interviews carried out in this study. The chapter further analyses these findings, drawing from the responses of the ten student teachers who participated. Furthermore, the chapter is organised according to the themes that emerged from the data, which reflect student teachers' experiences, and are driven by the study's theoretical framework (TPACK) and curriculum concepts.

5.1.1 Theme 1: Rationale

Question: Why are you teaching Business Studies?

From the findings generated in this study, participants' responses to the above question, drawn from online reflective activities, Zoom group discussions and one-on-one semi-structured WhatsApp interviews, showed that the majority of participants' rationales for teaching Business Studies using educational technologies were driven by self-experiences.

> **P1:** I chose to teach business studies to help our learners gain insight of the business so they could one day contribute to the economy and change the living conditions in their unstable societies in general … I developed love for businesses, business knowledge, I think what drove me to teach Business Studies was that I wanted to be an accountant, but I opted for teaching Business Studies.
>
> **P2:** My major aim was to help learners to be able to apply Business Studies theory into practice, for instance, starting their SMEs [small and medium enterprises] like spaza shops to contribute to the community … I am teaching business studies because it was my favourite subject in high school.
>
> **P3:** Firstly, teaching Business Studies grew from the love I had for the subject back in high school; to increase the pass rate, but also to ensure that all learners are well versed with the content.
>
> **P4:** Teachers were teaching Business Studies methods which I deemed unacceptable, they were making us learn Business Studies through memorisation of facts; hence I wanted to bridge that gap because learners were not learning but memorising ... I also

realised that if I wanted to at least have a business, I need to learn businesses, how to manage businesses. So that's how I choose Business Studies.

P5: I'm teaching Business Studies because of, when I grew up, my mom was a teacher, so she was teaching Business Studies, so she's the one who gave me the idea of teaching Business Studies because she was the best teacher around … I found Business Studies to be an interesting subject back in high school, and it was in line with my goals of being an entrepreneur, so I opted to teach it in high school.

P6: I enjoyed studying it at school … I had so much support from my teachers, my Business Studies teacher, as well as my Economics teacher. So both of them, they made me fall in love with their subjects.

P7: One of my friends in high school, who used to be someone who understood the subject better, influenced me that I saw potential in myself … besides Business Studies is a very nice and open-minded subject in terms of the corporate world.

P8: I love Business Studies **…** I teach Business Studies to motivate learners to bring back to the economy by utilising the content taught CSI and CSR.

P9: I have always loved commercial subjects; when I enrolled for varsity I chose Business Studies as my major… I also chose to teach Business Studies to help learners acquire business knowledge, skills and principles to adapt to the business world.

P10: I am teaching Business Studies because I fell in love with the subject in Grade 10 as a Business Studies learner. We were never taken seriously as Business Studies learners; we were referred as studying the easy subject. I believed that Business Studies is the key to solve many problems of unemployment in our country; hence, I wanted to contribute to learners' knowledge of business by being a Business Studies teacher.

Moreover, participants indicated that they chose to teach Business Studies based on the love that they have for the subject. For instance, the sentiments of P1, P2, P5, P6, P7, P8, P9 and P10 were in line with those of P3, who mentioned that "*teaching Business Studies grew from the love I had for the subject"*. Additionally, P5 stated that they had *"found Business Studies to be an interesting subject"*. Of the ten participants only one did not draw from self-experience/ personal rationale for teaching Business Studies using educational technological resources.

Successively, other experiences which seem to dominate Business Studies student teachers' rationale for teaching the subject were content experiences and communal experiences. For instance, P5 revealed that, "*I wanted to contribute to learners' knowledge of the business by being a Business Studies teacher",* and P8 stated *"I teach Business Studies to motivate learners to bring back to the economy by utilising the content taught CSI and CSR"* (content

experiences). The findings also suggest that the rationale of five of the ten student teachers (P1, P2, P5, P6, P7) teaching Business Studies was influenced by their communal experiences. P5 agreed with P6 when he stated that "*I had so much support from my teachers, my Business Studies teacher*", while P7 mentioned that "*One of my friends in high school who used to be someone who understood the subject better influenced me."*

Khoza (2015), in agreement with Thijs and Van den Akker (2009), avers that the concept of rationale in curriculum seeks to understand why Business Studies student teachers are teaching the subject. Moreover, the latter authors further posit that Business Studies student teachers choose to teach the subject because of drawing from personal, social and professional reasons/rationale. Furthermore, the findings of this study show that seemingly student teachers' reasons for teaching Business Studies stemmed from their personal interest in the subject. In other words, personal rationale was the dominant reason in the generated data for why student teachers are teaching Business Studies. Thus, self-experience was the major influence of student teachers' choice of Business Studies. This is evident in the fact that most participants' responses seem to reveal a personal rationale (self-experiences), with only one participant (P4) not driven by self-experience.

However, a minority of student teachers' reasons for teaching Business Studies stemmed partially from professional and societal rationale. This could be affirmed by the fact that only half of the participants (five out of ten) reasons for choosing to teach Business Studies were steered equally by professional and societal rationale. In other words, student teachers were partially driven by content experiences and also communal experiences. As such student teachers relied less on reading CAPS to understand professional rationale of teaching Business Studies. They also did not draw much from public opinions. However, they taught Business Studies because of their personal beliefs and knowledge. Moreover, these findings are in line with the findings from the study conducted by Mlaba (2014) which sought to explore the implementation of the CAPS by grade ten Business Studies teachers at two particular High Schools in Ugu District. The study findings indicated that Business Studies teachers were not aware of the reasons why they were teaching Business Studies, to make the matters worse CAPS is not clear when it comes to indicating reasons of teaching Business Studies.

In contrary to the latter mentioned above, according to (Khoza, 2015 & Hoadley and Jansen, 2018) CAPS is a performance curriculum, "Therefore, mastering the individual subject/discipline content is more important than the reconstruction of knowledge" (Khoza,

2016a, p. 108). As such, student teachers should draw from content experience when teaching Business Studies with the supplement of educational technological resources. Moreover, the silent of Business Studies CAPS in addressing the reasons why student teachers are teaching the subject tend to confuse student teachers, on the reasons why they teaching Business Studies.

5.1.2 Theme 2: Assessment

Question: How do you assess learning in Business Studies?

Findings suggest that student teachers are using assessment for learning (AfL)/formative assessment when teaching Business Studies with the affordance of educational resources.

> **P1:** I assess learners in using provoking questions during class discussions informal or daily assessment to check the learners' prior knowledge … and then I do assess learners at the end of the lesson by asking learners to do presentation about what do they understand the lesson or a certain topic that was taught …. Lastly I use the formal assessment found on CAPS document …
>
> **P2:** Most of the time when I have done teaching or while I'm teaching I always pose questions to check to see if learners understand what happening at that time or I will quiz them, give them two questions or three questions to write them down and check to see what they understand … also if maybe learners are sitting in threes, in twos or in groups, they will exchange the answers and I will ask them to give me those answers, so that [is] the only way I assess my learners …
>
> **P3:** I give them classwork firstly. And then I also give them homework. Then after completing a topic, I give them my informal class test this one says how a learner grabs the content … there, formal assessments that are specified by our ATPs and CAPS for each topic …
>
> **P4:** I use in most cases like, give them class activities … I will ask questions while teaching … And also test like class test maybe each and every month, they will write a test, whereby we will [test on] the previous topic … I also administer formal assessment which is tests and assignments …
>
> **P5:** I tend to give the learner some chance to discuss activities … It could be classwork activity or homework … and also give them some question papers activities to check whether they are understanding the content or not …
>
> **P6:** Informally, I would just give them homework, and give them classwork, tasks; I'll give them unprepared for presentations, after the lesson … formally, give them projects, like, prepare projects we give them a month to do … there are examinations, obviously… I also make my learners work in groups or in pairs …

P7: I sometimes do those questions and answer sessions with learners during the lesson, I also give them homework, even during the class I also give learners classwork … We have two formal assessments per term …

P8: Before introducing a topic, I ask learners questions in relation to the lesson which is assessment before the lessons starts … I also administer tests for my learners to check their level of understanding … for grading and proceeding to the next class they write examinations ...

P9: Formal assessment is carried out following ATP and CAPS … I also used informal assessments such as class tests and lastly I make use of oral presentations …

P10: After every lesson I request learners to write on a piece of paper what they have learnt ... I have learners give the paper to someone from them and have everyone read another person's paper …

All participants shared their experiences of AfL. For instance, P1 stated "*I assess learners in using provoking questions during class discussions informal or daily assessment to check the learners' prior knowledge".* Additionally, P4, P5 and P7 accord with P3 who asserted "*I give them classwork".* P6 stated *"Informally, I would just give them homework, and give them classwork, tasks; I'll give them unprepared for presentations, after the lesson…".* AfL is related to self-experience. Student teachers have to apply their knowledge in choosing the strategies to assess their learners during Business Studies teaching and learning.

In addition to the above, student teachers also employed assessment of learning (AoL)/ summative assessment. P1 and P9 accord with P3 who shared that "… *there, formal assessments that are specified by our ATPs and CAPS for each topic…".* In addition, P6 stated "*… formally, give them projects, like, prepare projects we give them a month to do… there are examinations, obviously…"* and P8 argued that *"... for grading and proceeding to the next class they write examinations…".* Moreover, AoL is closely related to content experience, since the curriculum/policy document (CAPS) and other formal documents stipulate assessment tasks to be conducted.

The fewest number of student teachers were using Assessment as Learning (AaL)/peer assessment. P2 mentioned "… *if maybe learners are sitting in threes, in twos or in groups, they will exchange the answers and I will ask them to give me those answers…",* and P5 said *"I tend to give the learner some chance to discuss the activities".* In affirmation, P6 asserts *"I also make my learners work in groups or in pairs",* and P10 states *"... I have learners give the paper to someone from them and have everyone read another person's paper…".* In cases

where learners are doing the assessment in pairs or groups, they are influenced by communal experiences because they interact to perform the assessment task given by the student teacher.

Assessments serves as evaluation tools of whether teaching and learning of Business Studies via educational technological resources was successful or not (Broadfoot & Black, 2004). Moreover, Earl (2006) points out that assessment has three purposes, AoL (summative assessment), AfL (formative assessment), and AaL (peer assessment). According to Kennedy (2006), Earl (2006) and Kumar et al. (2020), summative assessment (AoL) attempts to summarise learners' learning at the end of the learning process. Moreover, AoL causes student teachers to be influenced by content experience, as they follow policy document assessment prescriptions to assess learners.

Black and Williams (2003) posit that AfL (formative assessment) involves formal and informal processes which student teachers and learners employ to collect evidence with the aim of improving learning. Likewise, Dixson and Worrell (2016) point out that formative assessment includes various tools that provide feedback to student teachers or learners to help learners learn more efficiently. Moreover, formative assessment causes student teachers to be driven by self-experience, because student teachers use their self-experiences, methods and knowledge to design AfL with the aim of tracking learners' progress and gaining knowledge of learners' learning gaps in order to provide remedial actions. Furthermore, peer assessment, also known as assessment as learning (AaL), defines an arrangement of learners to specify and consider the value, level or quality of performance of other learners (Topping, 2009). Hoadley and Jansen (2013), in agreement with Earl (2006), point out that AaL takes place when learners use their personal capacity to evaluate what they are learning, in the process utilising responses from their evaluation to plan, adapt and even measure changes in what they understand. AaL thus causes student teachers to be influenced by communal experience. This is because as learners interact, and share knowledge, and developmental comments with one another to improve their understanding of the content, student teachers are able to identify their weak and strong points in receiving Business Studies content. Recent studies indicate that the most commonly used assessment in schools is summative assessment (AoL) (Elezi & Bamber, 2017; Alt, 2018; Govender, 2018; Dliwayo, 2019).

In contrast to the above, research findings of this study revealed that Business Studies student teachers mostly used AfL when teaching the subject, supplemented by educational technological resources. All ten participants indicated their use of AfL. This suggests that

student teachers were mostly driven by self-experience when administering assessment in Business Studies. They mostly used informal activities such as homework, class activities, probing questions, and also oral presentations. These informal activities were administered to track learners' progress and also to provide feedback to learners.

Likewise, student teachers also indicated their use of AoL, with only three participants (P1, P5 and P10) having no experience of AoL. This suggests that a large number of participants were also driven by content experiences when administering assessment in Business Studies. Moreover, student teachers utilised formal assessments to grade learners, to collect evidence of learners' performance to provide to parents and the Department of Education, and also for learners' progression to the next grade. These assessments included formal presentations, formal projects and examinations.

A minority of student teachers used peer assessment when teaching Business Studies via educational technological resources. This suggests that when student teachers were assessing learners, they were partially driven by communal experience.

DBE (2011), states that student teachers should administer both informal and formal assessments. The curriculum document (CAPS) further indicates that these informal and formal assessments include continuous assessment/peer assessment, formative assessment (informal assessment) and also summative assessment (formal assessment). These assessments include, but are not limited to, assignments, tests, projects and presentations. In other words, student teachers should be driven by content experience (which relates to summative assessment), self-experience (which relates to formative assessment), and also communal experience (which relates to peer assessment) when administering assessment in Business Studies.

5.1.3 Theme 3: Resources

Question: What materials are you using to teach Business Studies?

From the findings it was clear that most student teachers had more experience with hardware resources.

> **P1:** I use slides … What can you say, slides to minimise the wastage of time when I write notes from the blackboard … I also use internet for YouTube such as watching learn-extra channel, where you can get a good content from other peers who can explain the content correctly … I also make use of business and financial magazines, textbooks charts, data head projector …

P2: I mostly use the books; I use the charts, for instance, when I'm teaching the sectors – primary sector, secondary sector and tertiary sector – so I like to depict it to the chart where my students will see … I used overhead projector …

P3: Sometimes I use posters, like when I want to display an illustration, I use PowerPoint for notes … the teaching theory that I follow in most cases has to be constructivism because I like to build from what learners know. So start from their prior knowledge and then develop from what they currently know …

P4: I use my textbook, I use my study guide also question papers to ask previous questions … theory that I use, it's a constructivism whereby I'm using learners' prior knowledge in order to introduce a current topic … I use YouTube to download some videos for something like I will understand better if someone is explaining, then maybe I'll use his way in my class in order to explain …

P5: Material that I'm using textbook, internet, chalkboards, and also the handouts… I also have some CD that I also have the content for sometimes I tend to give the learners to go and watch… There is, this theory I think is Paul Black, whereby, He's talking about the red that is inside of a box…: I use that theory in my teaching to show my learners that in this world that we live in, we are living in a smaller world whereby things can happen anytime and so you must be able to overcome each and every obstacle that you come across…

P6: I am using case studies where I read to learners and they had to identify the leadership style. Secondly, I used a video from YouTube depicting and an example of how laissez-faire leadership … I think I'm more on constructivism, because I also allow my learners to create things, work together and also present them to me. And then, yeah, we share information is the class …

P7: I usually use PowerPoint presentation, charts, and textbook for notes, chalkboard and previous question papers … I use internet when I'm preparing; I just watch videos on YouTube, to find how they address content ...

P8: To be in line with CAPS and Annual Teaching Plan, I mostly utilise learners' textbook … I also write notes on the chalkboard … I also use visual aids such as playing videos for learners on difficult tasks …

P9: Resources that I used mostly were learners' textbooks, compiling brooklets for learners to study at home, I also use case studies from newspapers … as well as internet and I used the chalkboard …

P10: It depends on the topic I'm teaching, for example, the contract chapter, I use the actual contract … I also made use of handouts, textbooks, chalkboard, study guide, YouTube videos, and also charts …

All student teachers reflected on their experiences of the use of hardware resources. For instance, P1, P2, P5, P7, P8, P9 and P10 all agreed with P4 who revealed that "*I use my*

textbook". Additionally, P3 along with P7 shared that "*I usually use PowerPoint presentation".* This suggests that all student teachers except P6 were influenced by content experiences when choosing materials/resources.

Correspondingly, software resources also seemed to dominate student teachers' choice of resources when selecting educational resources for Business Studies teaching. Out of 10 student teachers, nine had experience of software resources. P3 *said "I use PowerPoint for notes."* Additionally, P10, P7, P5, and P1 all agreed with P6 who mentioned that *"I used a video from YouTube".* P5 added *"I also have some CD that I also have the content for sometimes I tend to give the learners to go and watch".* In other words, when they were teaching Business Studies student teachers were also drawing from communal experiences in their choice of technological resources for their teaching.

Moreover, during data generation some of the student teachers also seem to be driven by their self-experience. In other words, student teachers also used ideological-ware resources during Business Studies curriculum implementation. Additionally, they tended to rely more on constructivism theory. This suggests that they preferred similar teaching theories for Business Studies curriculum delivery. For instance, P3 mentioned "*teaching theory that I follow in most cases it has to be constructivism", which was* affirmed, by P6 who is in agreement with P4, who mentioned that "*I think I'm more on constructivism".*

Khoza (2016), in agreement with Thijs and Van den Akker (2009), believes that resources in curriculum address the question of 'with what is one teaching'. In other words, resources are used as tools to aid Business Studies student teachers to communicate the Business Studies curriculum. Furthermore, Khoza (2013) states that resources comprise hardware (any tool/machine/object used in education), software (any material used/identified with devices to pass on/show information) and also ideological-ware (intangible and invisible activities in education such as theories). According to the findings of this study, hardware resources seem to dominate in student teachers' use, followed by software resources. However, a minority of student teachers were utilising ideological-ware resources when teaching Business Studies. These findings are in line with what Fomunyan, (2017) posited, in saying that ideological-ware resources have been neglected in South African basic education. Khoza (2013) stresses the importance of student teachers first understanding ideological-ware resources before the use of hardware and software resources.

In addition, Business Studies CAPS stipulates software and hardware resources that student teachers need to utilise when teaching the subject. For instance, in teaching creative thinking and problem solving, as part of Grade 11 topics, Business Studies CAPS recommends that student teachers utilise textbooks, newspaper articles, magazines (hardware resources), and the internet, and other audiovisual media (software resources) (DBE, 2011). However, throughout all topics from Grade 10 to 12, it is silent when it comes to ideological-ware resources (theories to be applied in teaching Business Studies). In other words, the Business Studies CAPS is vocal on content and communal experiences that should guide student teachers' choice of resources, but it does not stress the importance of self-experience.

5.1.4 Theme 4: Learning environment

Question: Which well-known environment do you utilise to teach Business Studies?

Participants' responses outlined that the face-to-face environment was the dominant environment used by student teachers to teach Business Studies.

> **P1:** I teach business studies in school specifically classrooms most of the time … I do conduct my lesson during Zoom meetings and WhatsApp groups
>
> **P2:** I used classroom as a main environment to teach Business Studies … I have also used online platforms such as emails and WhatsApp to send learners some PDF files of certain topics I taught in Business Studies …
>
> **P3:** I was using classroom in the classroom setup, we have a classroom that I used for teaching and learning … I use the online setting, where I give learners question papers and then they have to answer, then they send me the response … they have to take a picture of their work so that I can check, they're continually learning at home. They send it to our WhatsApp group...
>
> **P4:** The environment that I am using is classroom, also the other environment which I'm using is social media … I use WhatsApp so that I can, like, tell the learners what to do. Maybe if they have questions regarding maybe an assignment, while they told maybe they forgot something, which I told them how to do a specific assignment. So this WhatsApp, also face to face when I'm in class is okay…
>
> **P5:** In class … we also use online teaching, there is this software which is called Teams, it allows learners to join in a meeting … during Saturdays if they cannot come to school we use Teams software …

P6: Most of the time it is always in the classroom … We've had, like, WhatsApp groups …

P7: I conduct my lessons in classroom, as I have mentioned that even at times of lockdown we couldn't manage to conduct online lessons, such as Zoom classes, since our learners could not afford airtime to participate in those classes …

P8: … I use classroom when I'm teaching Business Studies … unforeseen circumstances (COVID-19) compelled me to also utilise online applications … I normally use WhatsApp groups to post activities and notes.

P9: … mostly it is in class, I also open social media platform such as WhatsApp or Zoom to give activities or what will do in class, so they come in the class well informed what we will be doing …

P10: … I teach Business Studies only in a school …

All participants revealed that they used the classroom environment to teach Business Studies, which is a face-to-face environment. For instance, P6 accords with P1 who stated "*I teach Business Studies in school, specifically classrooms most of the time",* while P4 stated *"The environment that I am using is classroom".* Thus, when student teachers were teaching Business Studies, they were mostly drawing from content experience. This experience requires student teachers to follow the prescribed environment of learning Business Studies. Furthermore, student teachers were also using the online teaching environment to conduct Business Studies lessons, with the infusion of educational technological resources to supplement the subject teaching and learning. Eight of the ten participants (P1, P2, P3, P4, P5, P6, P8, and P9) reflected on their experiences of the online teaching environment. For instance, P2 reported "*I have also used online platforms such as emails and WhatsApp to send learners some PDF files of certain topics I taught in Business Studies",* and P3 stated *"I use the online setting, where I give learners question papers and then they have to answer then they send me the response … they have to take a picture of their work so that I can check, they're continually learning at home. They send it to our WhatsApp group".* P5 also asserted *"we also use online teaching, there is this software which is called Teams, it allows learners to join in a meeting".*

These findings also showed that some student teachers were aware of and used a blended learning environment to teach Business Studies during their teaching practices. P4, P5 and P9 seemed to have experienced blended learning. For instance, P4 said *"I use WhatsApp so that I can, like, tell the learners what to do… So this WhatsApp, also face to face when I'm in class is okay",* while P5 stated "… *during Saturdays if they cannot come to school we use Teams*

software". Correspondingly, P9 reported that *"I also open social media platform such as WhatsApp or Zoom to give activities or what we will do in class so they come in the class well informed what we will be doing".* This suggests that these student teachers were guided by self-experience when choosing the environment to conduct their Business Studies lesson, which allows them to draw from their personal knowledge on which environment is suitable at which time.

Environment in curriculum answers the question of where learners are learning (Khoza, 2015c; Thijs and Van den Akker, 2009; Sithole, 2017). Additionally, the latter mentioned authors further posit that the learning environment comprises a diverse physical location, the context, and the different ways in which student teachers and learners engage in the learning process. Moreover, the learning environment includes the face-to-face learning environment, online learning environment, and blended learning environment (Brown, Dehoney, & Millichap, 2015; Hoadley & Jansen, 2009). The face-to-face environment causes student teachers to be influenced by content experience, because policy documents stipulate that learning should take place in a classroom. The online environment, in contrast, causes student teachers to be influenced by communal experience, as they interact via the online platform for Business Studies teaching and learning. Blended learning causes student teachers to be influenced by self-experience.

According to the findings of this study, the majority of student teachers seem to be driven by the face-to-face environment when teaching Business Studies. This suggests that student teachers drew from content experience when choosing the learning environment. This is in line with what was pointed out by Mulyani, Fidyati, Suryani, Suri and Halimatussakdiah (2021), in agreement with Karaeng and Simanjuntak (2021), who posited that despite the COVID-19 pandemic, which has called for a paradigm shift from face-to-face learning to the online and blended learning environment, student teachers still use the face-to-face environment for teaching and learning.

Furthermore, with reference to Business Studies CAPS, the DBE (2011) does not provide clarity on where teaching and learning should take place. However, Zulu (2018), in agreement with Mpungose (2016), asserts that CAPS only provides clarity on time and is not so vocal on the aspect of the learning environment. However, other formal documents make it crystal clear that student teachers should be in class for the duration of seven hours a day. In affirmation, see South African Human Rights Commission (2012, p. 27), which states that it is the State

duty that “All learners have a qualified teacher present and teaching in class for seven hours per day every school day.” This serves to confirm the findings of this study, which revealed that student teachers were driven by content experience, because they had to consult formal documents to understand the teaching environment that is conducive for learners. Hence, the face-face environment was mostly used, followed by the online environment and a little use of a blended learning environment.

5.1.5 Theme 5: Student teachers’ role

Question: How do you perceive your role when teaching Business Studies?

The majority of the participants indicated that they mostly perceive their role as a facilitator of learning when teaching Business Studies via educational technological resources.

> **P1:** I perceive my role as a facilitator, mediator; for example, if I’m teaching I do use different approaches like groups where learners are able to form groups and participate in certain activities, where I can just be a facilitator in that lesson by guiding them to certain answers. I also obtain that knowledge from CAPS that stipulate that an educator should be an instructor and a facilitator.
>
> **P2:** When I’m teaching Business Studies, I play a role of a facilitator or an instructor … Being a facilitator for me means for instance means if I’m teaching Accounting, I ask learners certain questions about a certain topic. If I see that they have insufficient knowledge for that particular question or that particular topic then I will use the scaffolding approach, by that I mean I will fill in the gaps, I will explain more information that relates to that particular topic so that they will have sufficient knowledge … I think my role as an instructor is to make sure that class is in control, the lesson is in control, is to make sure that the learners they behave in a certain way that best fits the lesson …
>
> **P3:** My role in most cases I explain the content to the learners … My role is to encourage my learners to become innovative business personnel in the near future, to teach learners how to solve complex business problems, to inspire learners so that they can be great contributors to the society.
>
> **P4:** I will tell my learners to use peer-to-peer learning whereby maybe the idea of friends because some of the learners when you teach them as a teacher, like they won't understand you, but if something is explained by their peers, maybe their friends, they are not afraid to ask questions …
>
> **P5:** I perceive my role as a mediator, because I am like the middle man between my learners and the subject content whereby I convey the content … I teach the learners

they learn the knowledge and then after, that's when I start assessing the learners by giving them some activities to check whether they understand the knowledge that I gave him

P6: When introducing the topic I first allow my students to tell me what they think it is about … it's a two-way street, because sometimes I come into class, I just let them tell me, present to make whatever they think and then the next day, I'll come and explain …_I always allow my students to take over every topic and share their ideas before explaining to them.

P7: Sometimes I tell learners to memorise notes while sometimes I tell them to follow my instruction in order to understand the content that I am trying to teach them.

P8: I give learners to create autonomy of what they are learning … the lesson becomes more learner centred … I develop assessment tasks that are in relation to the content taught … only after my learners have attempted to engage with the content, I then use explanation of important concepts

P9: My role as a Business Studies teacher is to maximise the academic progress of learners … I'm a mediator of learning through helping learners realise their potential by engaging with the content while I assist by leading them to the right direction where they become astray.

P10: My role is to facilitate learning. Learners are not empty vessels; my job is to tap into their cognitive capacity of developments ... I also constantly check if learners are moving toward the right direction through using previous question papers to assess my learners so as to keep up with the curriculum.

In terms of mostly perceiving their role as a facilitator of learning when teaching Business Studies via educational technological resources, P2 and P10 harmonised with P1, who stated "*I perceive my role as a facilitator, mediator … where learners are able to form groups and participate in certain activities where I can just be a facilitator in that lesson by guiding them to a certain answers".* Likewise, P5 said *"I perceive my role as a mediator, because I am like the middle man between my learners and the subject content whereby I convey the content".* This was also affirmed by P6, who stated *"I always allow my students to take over every topic and share their ideas before explaining to them"* P8 accords with P9, who stated *"I'm a mediator of learning through helping learners realise their potential by engaging with the content while I assist by leading them to the right direction".* Moreover, when student teachers are assuming the role of a facilitator of learning, they are driven by communal experiences. This seeks student teachers to encourage learners to be active in their learning process.

Student teachers also seem to assume the role of an instructor when teaching Business Studies. Six of ten participants shared that they assumed the instructor role. P2 said *"I will explain more information that relates to that particular topic so that they will have sufficient knowledge".* P6 and P8 agreed with P3 when he said *"my role in most cases I explain the content to the learners"*. Thus, when student teachers are using the role of an instructor to implement Business Studies curriculum, they are influenced by self-experience because they use their personal knowledge or experiences to deliver the curriculum.

However, only five of the ten student teachers assumed the role of an assessor. For instance, P8 said *"I develop assessment tasks that are in relation to the content taught",* while P9 stated *"My role as a Business Studies teacher is to maximise the academic progress of learners"*. In other words, fewer student teachers were influenced by content experience. This level of experience seeks student teachers to follow a curriculum document which indicates which content should be covered and when, disregarding learners' understanding of the content taught.

According to a pre-test, post-test control group study conducted by Inuwa, Abdullah, and Hassan (2015), which aimed to examine the effects of cooperative learning on secondary school students' achievement in financial accounting, most teachers still use a student teacher-centred approach. In other words, most student teachers still assume the role of an instructor during Business Studies pedagogical practices via educational technological resources. As such, self-experience relating to the role of an instructor is mostly preferred by student teachers. In contrast, the findings of this study indicated that the majority of the student teachers were assuming the role of a facilitator; in other words, communal experience was the dominant driver of student teachers' choice of roles. They mostly focus on teaching strategies which involve learners, such as group work, and allowed learners' involvement.

Furthermore, the DBE (2011) does not describe the roles that student teachers should assume when teaching Business Studies. Hence, this calls for student teachers to refer to their self- and communal experiences in perceiving their roles during Business Studies curriculum implementation. This suggests that the Business Studies CAPS does not guide student teachers for better implementation of the curriculum (Mpungose 2016).

5.1.6 Theme 6: Student teachers' goals of teaching Business Studies

Question: Toward which goals are you teaching Business Studies?

According to the findings of this study, student teachers seemed to be aware of aims when teaching Business Studies.

> **P1:** To allow learners to create business opportunities, creatively solve problems and take risks, respecting the rights of others and environmental sustainability … Lastly to apply business knowledge to secure formal employment and which learners use Companies Act protection of employers and employees to apply their rights in businesses … Another thing is to see learners if they are able to understand the content taught in that particular day and apply it through activities … Lastly, can be to see being able to differentiate between a sole trader business, a partnership business and a close-corporation business …
>
> **P2:** I think goals that I want to achieve or I meant to achieve, it is to make sure that learners are able to use knowledge presented to them into practice; for instance if you teach learners about business, what I'm hoping to see it is to see learners practising that knowledge that I have given them in class apart from the schooling environment … I also want to plant love of Business Studies to my learners so that they could be able produce the content taught to them in the examination...
>
> **P3:** Let's say for instance, I'm teaching about the business sectors for instance, and my aim will be for learners at the end of the day to be able to differentiate between the different sectors, also for them to be able to identify how these sectors operate and how they need each other was the interrelation between the sectors … and then my ultimate goal is to produce excellent results, also create future entrepreneurs whom are very innovative and will contribute massively in the business world …
>
> **P4:** I hope that my learners pass at the end of the year. And I made sure that they understand the content, which I'm giving to them … for my learners, like, I want to see them maybe one day to own their own businesses, because I always tell them that … in the coming future, the only thing that we need in South Africa is businesses…
>
> **P5:** My aims of teaching Business Studies are to see my learners becoming entrepreneurs and also to see myself becoming a businessman in a long term … The outcomes that I would like to see to them, for instance I was teaching entrepreneurship, they should be able to define what an entrepreneur …
>
> **P6:** Except for the need for them to understand and be able to respond on the questions or show understanding by responding on the task given ... The main goal is to teach learners the actual business operations, and instill the understanding of how the business works …

P7: I would like to see more black people getting into entrepreneurship… so by me being a Business Studies teacher, I'm trying to earn South African youth a chance to understand a business world so that when the right time comes, when they have money to open their businesses, they understand very well all the legalities that has to do with legislation and all the structures on how the business is formed ….

P8: I want to help learners to be able to firstly understand the terminologies used in Business Studies … I also would like to see them apply the knowledge I teach them in betterment of their lives. For instance, I was teaching my learners to form business plans in Grade 10, I would really love to see them using that knowledge to open their businesses and changing the status quo in their societies and see more black-owned businesses …

P9: I am teaching is for learners to gain skills and business knowledge which enable them to enter the business world … I want learners to become creative business persons who solve problems using creative methods and are able to take risks … and lastly … I want my learners to show through activities what I have taught for the day, if it was grasped …

P10: In Business Studies the goals are to acquire and apply essential business knowledge, skills and principles … most of all, I need to see my learners being able to engage with the content, they should be able to go to examinations without any challenges … I also want to see my learners owning their learning … for instance being able to solve any Business Studies problems and coming up with innovative strategies …

According to the findings of this study, student teachers seemed to be aware of aims when teaching Business Studies. For example, P1 stated their aim as "… *to allow learners to create business opportunities, creatively solve problems and take risks, respecting the rights of others and environmental sustainability…".* P2 went on to say *"I think goals that I want to achieve or I meant to achieve, it is to make sure that learners are able to use knowledge presented to them into practice; for instance, if you teach learners about business, what I'm hoping to see is to see learners practising that knowledge that I have given them in class apart from the schooling environment…".* P3, P5, and P9 were in accord with P4, who stated "… *for my learners, like, I want to see them maybe one day to own their own businesses, because I always tell them that … in the coming future, the only thing that we need in South Africa is businesses".* In addition, P6 said *"... the main goal is to teach learners the actual business operations, and instill the understanding of how the business works".* Moreover, when student teachers are teaching towards aims, they are drawing from self-experience.

Furthermore, participants also seem to be driven by objectives when teaching Business Studies via educational technological resources. For example, P1 said *"Another thing is to see learners if they are able to understand the content taught in that particular day and apply it through activities".* Likewise, P2, P4, P6 and P10 agreed with P3, who asserted "*my ultimate goal is to produce excellent result".* This suggests that student teachers were influenced by content experience. This level of experience compels student teachers to teach Business Studies in line with prescribed goals of the curriculum document (CAPS).

However, only six out of ten participants were teaching toward learning outcomes. For instance, P1 stated *"being able to differentiate between a sole trader business, a partnership business and a close-corporation business",* while P5 said that *"… the outcomes that I would like to see to them, for instance I was teaching entrepreneurship, they should be able to define what an entrepreneur…".* P10 said *"… most of all I need to see my learners being able to engage with the content…"*

In light of the above, Khoza (2014) asserts that CAPS is silent in expressing the aims and objectives for a single subject. However, the curriculum specifies the curriculum aims for Grades R–12. Likewise, the DBE (2011) states that their aim is focused on equipping learners, regardless of their race, gender, socio-economic background, physical ability or intellectual ability, with the knowledge, skills and values necessary for self-fulfilment, and meaningful participation in society as citizens of a free country. These broad aims also apply in Business Studies. Moreover, the findings of this study suggest that the majority of student teachers were mostly guided by the aims expressed in the CAPS document when defining their aims in teaching the subject. Hence, communal experience was the most dominant when student teachers were teaching Business Studies via educational technological resources, followed by content experiences and partially drawing from self-experience.

5.1.7 Theme 7: Content

Question: What content are you teaching in Business Studies?

Participants' responses displayed sound knowledge of Business Studies content.

> **P1:** Content can be Business Environments, Business Ventures, Business Roles and Business Operations …

P2: It is Business Roles, Business Ventures, Business Environments and Business Operations … it is covered all through from Grade 10 to Grade 12 …

P3: I taught management and leadership … SWOT analysis, business strategies, business plan, business environment and so on …

P4: Currently, I was teaching a TQM, which is total quality management, and other topics, business tasks in these environments, forms of ownership.

P5: The content, I am teaching Business Studies were referring to business cycle [and] business sectors, those are the content that I'm teaching in this instance … business environment and business operation

P6: Okay, Business Studies. The main focus is the different things on business, but mainly it's the business environments, the business operations, public relations, etc., when I'm talking about business environments in Grade 10, we do cover the micro and macro the markets is up to Grade 12 …

P7: For Grade 11 … just to mention a few, we have marketing mix, production functions, marketing functions, citizenship roles and responsibilities, entrepreneurship qualities … for Grade 12 we have legislations, human resources, business strategies and quality of performance, just to mention a few …

P8: Business sectors, human resources, leadership styles, professional ethics, human resources, they are so many topics and most of them are carried from Grade 10 where these are introduced in more detail in Grade 11 and 12 …

P9: In Business Studies, there are different content that are taught and there are specific for each grade … for Grade 10 which I taught, there are forms of ownership, sole trader, partnership and private company…

P10: I was teaching factors that impact on business locations and contracts, marketing, the CSI, corporate social responsibility or investment … entrepreneurial qualities …

Participants' responses displayed a sound knowledge of Business Studies content. For example, P1, P5 and P6 all agreed with P2, who stated *"It is Business Roles, Business Ventures, Business Environments and Business Operations… it is covered all through from Grade 10 to Grade 12…".* Additionally, P3 articulated that *"I taught management and leadership… SWOT analysis, business strategies, business plan, business environment and so on …"* P4 *said "… currently, I was teaching a TQM, which is total quality management, and other topics, business tasks in these environments, forms of ownership."* Other participants also mentioned content according to grades. For instance, P9 said *"In Business Studies, there are different content that are taught and there are specific for each grade… for Grade 10 which I taught, there are forms of ownership, sole trader, partnership and private company…"*

Furthermore, Rawle (2009) argues that student teachers are required to have information on and comprehension of the subjects they teach, and the teaching methods which advance successful conveyance. However, during data generation in this study, participants' responses only seemed to focus on one aspect, which is the content of Business Studies. In other words, they were mostly driven by content experience. Not a single participant shared their experiences when it comes to teaching methods which cater for the needs of a student teacher (Mpungose & Khoza 2017). This suggests that during data generation in this study, there was silence on self-experience.

In addition to the above, the Business Studies CAPS document stipulates the content to be covered in Business Studies. According to the DBE (2011), corresponding topics in the Business Studies curriculum (from Grade 10–12), involves Business environment, Business venture, Business role, and Business operation. Most of the participants shared their experiences of these topics, which suggests that the student teachers referred more to topics which should be covered in Business Studies in alignment with CAPS. Hence, they were driven by content experience.

5.2 Conclusion

Chapter Five presented the research findings on the experiences of ten student teachers who taught Business Studies at uMgungundlovu District. Seven themes were categorised, with the aim of answering the key research questions and meeting the study objectives.

The following chapter aims to summarise these findings and also offers recommendations and the conclusion of the study.

CHAPTER SIX

Summary and recommendations

6.1 Chapter Overview

This study aimed to explore student teachers' experiences of the integration of educational technological resources in their teaching practice in uMgungundlovu District. In order to address the research objective, the study focused on the following two key research questions: What are Business Studies student teachers' experiences of the integration of technological resources?', and Why are Business Studies student teachers' experiences shaped in particular ways? Likewise, the study objectives were to explore Business Studies student teachers' experiences of the integration of technological resources, and to find reasons that inform Business Studies student teachers' experiences of the integration of technological resources.

This chapter intends to understand whether the findings of this study were analysed in accordance with the purpose of the study. It further provides the conclusion and recommendations linked to the research questions.

6.2 Summary of chapters

6.2.1 Chapter One (overview, context and background)

Chapter One presented the reader with an overview of the study, context and background. The chapter briefly explained three levels of experiences (self-experience, communal experience and content experience) which guided this study. It further explicated the rationale behind conducting this research, and presented the reader with a brief synopsis of literature, the research methodology, and an overview of chapters found in this study.

6.2.2 Chapter two (literature review)

Chapter Two covered the literature review, focusing on the integration of educational technological resources in teaching Business Studies. The chapter started with reviewing studies centred on the phenomenon (experiences), and also discussed matters of curriculum, (intended, implemented and attained curriculum). It further articulated five levels of curriculum representation (supra, micro, macro, meso and nano). Selected literature was steered by the TPACK theoretical framework.

6.2.3 Chapter three (theoretical framework)

Chapter Three outlined the chosen theoretical framework (TPACK) in detail. It started by defining TPACK and its history, and justified why this theoretical framework was considered best fitting for the purpose of this study.

6.2.4 Chapter Four (research design and methodology)

The fourth chapter, outlined the research design and methodology in-detail. The study adopted a qualitative research approach within an interpretive research paradigm. Additionally, the case study research design was adopted, using two sampling methods, purposive and convenience sampling. The study adopted three data generation methods: one-on-one WhatsApp semi-structured interviews, online reflective activities and also Zoom group discussions. The chapter presents all the above mentioned, and how they were applied in this research.

6.2.5 Chapter Five (research findings)

Chapter Five presented the research findings on student teachers' experiences of the integration of educational technological resources in teaching Business Studies. Seven themes were constructed, influenced by curriculum concepts and also the theoretical framework. Moreover, in supporting research findings, I utilised the literature and also CAPS to analyse the seven themes. Moreover, I infused my research phenomenon (experiences) in all of the themes to support the purpose of the study and to understand which experience drives student teachers in each theme.

6.3 Summary of findings and recommendations

The summary of findings and recommendations presented in this chapter elucidate to the reader the summary of findings pertaining to the experiences of student teachers when they integrate educational technological resources in teaching Business Studies. These accounts were revealed via three data generation tools, namely, one-on-one semi-structured WhatsApp interviews, online reflective activities and Zoom group discussions. Moreover, these findings relate to seven themes (rationale, resources, content, goals, learning environment, student teacher roles and assessment) categorised following the theoretical framework as well as curriculum concepts which student teachers shared their experiences of. This section further recommends areas of improvement drawing from the student teachers' experiences.

6.3.1 Rationale

The findings of this study have showed that while there are three type of rationale – personal, societal and professional rationale (Khoza 2015; Thijs & Van den Akker, 2009) – student teachers have centred personal rationale as the most dominant influence in their teaching of

Business Studies. Their reasons for teaching Business Studies were mainly driven by their interest, passion and love for the subject. In other words, they were driven by self-experience, which led them to draw from a personal rationale when teaching Business Studies via educational technological resources. They were drawing less from the societal and professional rationale, and hence placed less focus on reading written documents (professional rationale), and thus lacked content experience. A few student teachers reported having been influenced by their peers and former teachers in teaching Business Studies, which suggests they were drawing from the societal rationale, relating to communal experience.

Furthermore, the literature suggests that merging all three propositions of rationale for successful curriculum implementation is mandatory (Makumane & Khoza, 2020). For any successful implementation of curriculum, rationale serves as a major orientation point (Van den Akker, Fasoglio, & Mulder, 2010). Hence, implementation of Business Studies curriculum with the supplementation of educational technologies by student teachers is considered by the latter mentioned authors as doomed to be unsuccessful without alignment of these three proposition rationales (personal, societal and professional rationale). Moreover, personal rationale places individual student teachers at the heart of teaching and learning (Khoza, 2016a). Furthermore, Makumane and Khoza (2020), in affirmation with Bernstein (2006), posit that social rationale places society at the centre of the teaching and learning environment. Lastly, professional rationale is predisposed by factual knowledge, prescribed subject content and metacognition development (Makumane & Khoza, 2020). The findings showed that this study is mainly in line with personal rationale, where student teachers are driven by passion, interest and love to teach Business Studies effectively.

This study recommends that student teachers should equally integrate these three propositions of rationale for a full, rounded teaching of Business Studies via the use of educational technological resources. The DBE should make it mandatory that they explicitly define the rationale of teaching Business Studies, so that student teachers gain access to the guidelines/rationale of why they are teaching the subject. This will assist the student teachers to implement the Business Studies curriculum successfully.

6.3.2 Assessment

The findings of this study suggested that participants were aware of all levels of assessment. However, there were also variances in terms of implementation. Mostly, student teachers relied on assessment for learning (AfL – formative assessment). This suggests that they were more influenced by communal experience when administering assessment in their teaching of

Business Studies. They mostly used class activities, homework, posing questions during the lessons, and so on. Additionally, they employed assessment of learning (AoL), administering formal assessment per CAPS requirements, such as examinations, formal projects, and formal presentations. Thus, they followed content experience, via referring to written documents (CAPS and ATPs). However, student teachers engaged learners least in learner-to-learner evaluation, most ignoring assessment as learning (AaL – peer assessment). As such, self-experience was least used by student teachers as an influence to guide assessment activities.

Furthermore, Satterly (1989) states that the key aim of assessment are to facilitate a close relationship and sharing of experience between student teachers and learners, and also between/from learner to learner. This suggests that assessments (AoL, AaL and AfL) should be equally used to evaluate learning experience, at the same time assisting both parties – learners and student teachers – to track learning and provide feedback. Moreover, AoL aims to summarise learners' learning at the end of the learning process (Kennedy, 2006; Khoza, 2015c; Kumar et al., 2020). In addition, AfL attempts to track learners' progress in terms of grasping content in the process of teaching and learning. AaL targets the role of the learner, not only as a contributor to the learning process and assessment, but also as the critical connector between learning process and assessment (Berry, 2013). In other words, when student teachers ignore certain forms of assessment, they miss the benefits of these different types of assessment, which creates a discrepancy.

Moreover, the DBE (2011) emphasises the use of formal assessment (summative assessment) and informal assessment (peer assessment and formative assessment). This study recommends that student teacher educational institutions should make it a point that student teachers are making use of these varying assessments. The importance of these assessments should be stressed and student teachers should constantly be assessed as to whether they are indeed employing all types of assessments during their teaching practices, particularly in Business Studies. Additionally, student teachers should be thoroughly taught the methods of administering these assessments prior to their teaching practices. This will yield positive learning outcomes in the teaching of Business Studies via educational technologies.

6.3.3 Resources

The findings of this study indicated that student teachers were very aware of hardware resources when teaching Business Studies. Most participants indicated the use of hardware resources such as business and financial magazines, textbooks, charts, projector, blackboards, etc. A relatively large number of participants also reflected on their experiences of using

software resources such as slides, internet videos, etc. Sadly, they did not understand the theories which direct the integration of these resources in teaching Business Studies, with a relatively small number of participants reflecting on ideological-ware resources.

In affirmation of the above, studies suggest that without proper understandings of ideological-ware resources, student teachers cannot successfully integrate educational technologies which drive the use of hardware and software resources (Zulu, 2019; Umugiraneza, Bansilal, & North, 2017). Findings during data generation suggested that student teachers were still not successful in integrating educational technological resources in supplementing Business Studies teaching. As a result, technological resources are misused as there are no theories to guide their implementation.

In light of the above, this study strongly recommends that student teachers should ensure that they understand all resources and utilise them to their full potential as they best work in conjunction, so as to allow for successful integration of educational technologies in their pedagogical practices. In other words, if Business Studies student teachers are only driven by content experiences (hardware) and communal experiences (software), while neglecting the importance of ideological resources (neutral experience), they are not likely to see the results of their implementation of Business Studies curriculum. Furthermore, the DBE's (2011) silence on the theories to use in implementing Business Studies curriculum makes it difficult for student teachers to understand proper integration of educational technological resources. The study further recommends that the DBE should clearly define in curriculum the theories to guide Business Studies teaching. This is because current integration of educational technological resources by student teachers is impeded by their lack of awareness of ideological-ware resources. Moreover, the DBE should provide schools with more infrastructure (educational technologies) so that student teachers are able to experience them.

6.3.4 Learning environment

The accounts of student teachers during data generation highlighted that they mostly used the face-to-face environment when teaching Business Studies. All participants indicated their use of the classroom environment for teaching of the subject via educational technologies. Moreover, a fair number of student teachers were also aware of the online environment. They utilised Zoom group discussions, WhatsApp and so on, in order to deliver their lessons and also to share learning materials with learners. However, a blended environment seemed to be the choice of few, with the least number of student teachers being aware of the blended learning environment and integrating the face-to-face environment with the online learning

environment. In other words, student teachers were mostly influenced by content experience in conjunction with communal experience while neglecting self-experience when choosing the learning environment for Business Studies teaching and learning.

The literature maintains that blended learning is a current development in education (Cele, 2018; Zulu, 2019; Clark & Mayer, 2016). The latter mentioned authors further posit that a blended learning environment provides a number of learning advantages to learners, such as providing them with options to choose between face-to-face and online learning. There is compelling evidence that student teachers will benefit from making use of a blended learning environment to achieve positive learning outcomes. However, in this study it was found that the blended learning environment was ignored by many participants. As such, this study recommends that Business Studies CAPS should be explicit in defining the environment for teaching, so as to address the drawback of student teachers utilising only the formal face-to-face learning environment and disregarding the importance of online and blended learning environments. Moreover, the DBE should provide Wi-Fi in schools so that learners are able to access materials provided by student teachers, to address the issue of learners lacking data to participate in the online environment.

6.3.5 Student teachers' role

The findings indicated that student teachers' roles are categorised into those of instructor, facilitator and assessor. In this study, participants' accounts indicated that student teachers mainly assumed the role of a facilitator when teaching Business Studies. In other words, communal experience steered Business Studies student teachers' teaching. Student teachers also infused the role of instructor into their teaching, in this way drawing from self-experience. However, the least number of student teachers assumed the role of an assessor when teaching Business Studies via the technologies, and thus were least influenced by content experience.

According to the literature, most student teachers still use a student teacher-centred approach when delivering their lessons (Inuwa, Abdullah, & Hassan, 2015). This thus suggests that the role of an instructor is still dominant when student teachers are implementing Business Studies curriculum via educational technological resources. This contrary to the findings of this study, as student teachers mainly placed focus on creating an environment where learners actively took part in their learning, thus assuming the role of a facilitator of learning.

Furthermore, the findings also indicated that the curriculum document (DBE, 2011) does not provide guidelines for student teachers on which role to assume when teaching Business

Studies via educational technologies. As such, student teachers use their discretion to choose which roles to assume in class, in the process not equally drawing from varying experiences (self-experience, communal experience and content experience). This led to them not receiving positive feedback from their teaching. As such, this study recommends that student teachers should be well versed with regard to knowledge of student teacher roles. Likewise, Business Studies CAPS should clearly define the roles expected of student teachers when they are teaching the subject. This will make the implementation of Business Studies curriculum via educational technological resources successful.

6.3.6 Student teachers' goals of teaching Business Studies

The findings in Chapter Five indicated that of three goals of teaching Business Studies, student teachers were most aware of aims. Student teachers mainly focused on teaching learners to achieve broad goals, such as equipping them with the skills to start their own businesses post matric. Moreover, they also taught to achieve objectives. However, most of the student teachers lacked knowledge of learning outcomes. This suggests that the participants were more driven by self-experience (aims) and content experience (objectives), but lacked communal experience (learning outcomes).

The findings of this study are in accordance with the case study conducted by Khoza (2013), which revealed that student teachers were not aware of learning outcomes. However, without observable learning outcomes teaching and learning may not be successful (Khoza, 2013b; Mpungose, 2016). In affirmation, Moon (2002) posits that learning takes place if the subject is driven by learning outcomes. In other words, teaching of Business Studies without student teachers' understanding the learning outcomes may not be successful, even with the supplementation of educational technological resources. Hence this study recommends that student teachers should integrate all three – broad aims (goals), objectives (specific and realistic statements of achievements expected of students) and learning outcomes (what learners are expected to achieve at the end of the lesson) – to elevate successful teaching of Business Studies via educational technological resources. In the process, this will close the gaps occurring in curriculum implementation.

6.3.7 Content

The findings of this study indicated that participants were aware of the content covered in Business Studies. Some of the participants shared that the content they cover is stipulated in the ATP and also in CAPS. In other words, they drew from content experience, which requires them to read written documents. However, none of the participants referred to the methods

required to teach the subject. Moreover, the literature indicates that teaching methods are important, as they cater for student teachers' needs.

Furthermore, this study strongly recommends that student teachers should also have a deeper understanding of the teaching methods required for the implementation of Business Studies curriculum via educational resources. Additionally, it is of vital importance that Business Studies CAPS also defines the teaching methods that student teachers are to use for successful implementation of curriculum.

6.4 Concluding Statement

This study's main was to explore Business Studies student teachers' experiences of the integration of technological resources. It also aimed to find reasons that inform Business Studies student teachers' experiences of the integration of technological resources. To achieve these objectives, I formulated two research questions: firstly, what are Business Studies student teachers' experiences of the integration of technological resources?', And secondly, Why are Business Studies student teachers' experiences shaped in particular ways?

Khoza (2013, 2016a) indicated that there are three types of experiences that inform student teachers' integration of educational technological resources: self-experience, communal experience and content experience. In addressing the second research question, findings indicated that student teachers are driven by varying experiences; however, it was also discovered that in order for successful integration of educational technological resources to take place, student teachers still need more training, and also Business Studies CAPS needs to review the curriculum so that it caters for student teachers' needs where there are still discrepancies in terms of using the above mentioned experiences in a balanced manner.

This study concluded with a summary of findings, and also offered recommendations to improve the application of educational technological resources in Business Studies teaching.

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Annexures

Annexure A: Consent letter for the participants (student teachers).

Curriculum Studies, School of Education,

College of Humanities,

University of KwaZulu-Natal,
Edgewood Campus,

Dear Participant

INFORMED CONSENT LETTER

My name is Mthobisi Blessing Mthethwa, I am a Masters' student (curriculum studies) studying at the University of KwaZulu-Natal, Edgewood campus, South Africa. I am interested in exploring Business Studies Student Teachers Experiences on the Integration of Technological Resources at uMgungundlovu District. During my time in school as a learner and also years later as a student teacher, I observed that teaching of business studies was more reliant mainly on traditional technological resources, which includes but not limited to textbook, chalk and black board. This was despite both schools I attended having modern technological resources such as computers, overhead projectors and WIFI. Most of all the ignorance of calls for integration of modern technological resources in enhancement of business studies teaching and learning drove my interest to conduct this study. Hence, in this study I am interested in understanding the reasons that informs business studies student teachers' experiences on the integration of technological resources at uMgungundlovu Districts. Thus, to gather the information I am interested in requesting any relevant information with regards to experiences of student teachers on the integration of technological resources at uMgungundlovu District.

Please note

- Your confidentiality is guaranteed as your inputs will not be attributed to you in person but reported only as a population member opinion.
- The interview may last for about 45 to 60 minutes, relevant documents will be analysed, and the reflective activity will be sent to you via e-mail.
- Any information given by you cannot be used against you, and the generated data will be used for purposes of this research only.
- There will be no limit on any benefit that you may receive as part of your participation in this research project;
- Data will be stored in secure storage and destroyed after 5 years.
- You have a choice to participate, not participate or stop participating in the research. You will not be penalised for taking such an action.
- You are free to withdraw from the research at any time without any negative or undesirable consequences to yourself;
- Real names of the participants will not be used, but symbols such as A, B, C, D, and E will be used to represent your full name;
- Your involvement is purely for academic purposes only, and there are no financial benefits involved.
- If you are willing to be interviewed, please indicate (by ticking as applicable) whether or not you are willing to allow the interview to be recorded by the following equipment:

	Willing	Not willing
Audio equipment		
Photographic equipment		
Video equipment		

I can be contacted at:
Email: 213504809@stu.ukzn.ac.za
Cell: +27656468067

My supervisor is Dr. CB Mpungose who is located at the University of KwaZulu-Natal
School of Education and Curriculum studies
Contact details: mpungosec@ukzn.ac.za Phone number +2731 260 3671

Discipline Co-Ordinator is Dr Nomkhosi Nzimande,
Curriculum Studies, School of Education,
Edgewood College, University of KwaZulu-Natal
(Tel) 031 260 3357, Email: nzimandem2@ukzn.ac.za

You may also contact the Research Office through:
P. Mohun
HSSREC Research Office,
Tel: 031 260 4557 E-mail: mohunp@ukzn.ac.za

Thank you for your contribution to this research.

PARTICIPANTS DECLARATION

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

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

SIGNATURE OF PARTICIPANT **DATE**

…… ……

Annexure B: Semi- structured WhatsApp interview schedule

Exploring Business Studies Student Teachers Experiences on the Integration of Technological Resources at uMgungundlovu District

Technology

Major Question	**Question 1. What resources do you use in your teaching of business studies?**
Sub Question	What hardware resources do you use in teaching of business studies? What software resources do you integrate on your teaching? What informs your choice of modern technology resources in your teaching of business studies? When do you modern technological resources in your workplace?

Pedagogy

Major Question	**Question 2. What are your pedagogical practices when integrating technological resources in business studies.**
Sub Question	What teaching approaches do you employ in your business studies pedagogical practices? What do you think constitute effective teaching in your classroom? Toward which goals do you use technological resources in your teaching How do you assess your learners using technological resources? (Assessment) Where does teaching and learning enhanced by technological resources takes place? (environment) How do you perceive your role when using technological resources to teach BS? (students teachers' role)

Content

Major Question	**Question 3 What content are you teaching in Business studies?**
Sub Question	What is the subject content do you teach in business studies?

Annexure C: Online reflective activity

Full name: _____

Level/year of study: _____

This Reflective Activity is for Exploration of Business Studies Student Teachers Experiences on the Integration of Educational Technological Resources at uMgungundlovu District. Provide your experiences by following the (TPACK) framework main concept (Technology, Pedagogy and Content) as follows.

Technology

1. What hardware resources do you use in teaching of business studies?

_____

_____

_____

2. What software resources do you integrate on your teaching of business studies?

_____

_____

_____

3. What informs your choice of modern technology resources in your teaching of business studies?

_____

_____

_____

_____

When do you use modern technological resources in your workplace (School)

_____

_____

_____

Pedagogy

4. What teaching approaches do you employ in your business studies pedagogical practices?

5. What do you think constitute effective teaching in your classroom?

6. Toward which goals do you use technological resources in your teaching

7. How do you assess your learners using technological resources? (Assessment)

_____
_____
_____
_____

8. Where does teaching and learning enhanced by technological resources takes place? (environment)

_____
_____
_____
_____
_____
_____

9. How do you perceive your role when using technological resources to teach BS? (students teachers' role)

_____
_____
_____
_____

Content

10. What is the subject content do you teach in business studies?

_____
_____
_____
_____

Annexure D: Zoom group discussion interview

Technology

Question	What resources do you use in your teaching of business studies?

Pedagogy

Question	What are your pedagogical practices when integrating technological resources in business studies.

Content

Question	What content are you teaching in Business studies?

Annexure E: Ethical Clearance

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

19 October 2020

Mr Mthobisi Blessing Mthethwa (213504809)
School Of Education
Edgewood Campus

Dear Mr Mthethwa,

Protocol reference number: HSSREC/00001981/2020
Project title: Exploring Business Studies Student Teachers Experiences on the Integration of Educational Technological Resources at uMgungundlovu District
Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 29 September 2020 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL** on the following condition:

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 19 October 2021.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

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

Yours sincerely,

[redacted]

Professor Dipane Hlalele (Chair)

/dd

Humanities and Social Sciences Research Ethics Committee
Postal Address: Private Bag X54001, Durban, 4000, South Africa
Telephone: +27 (0)31 260 8350/4557/3587 **Email:** hssrec@ukzn.ac.za **Website:** http://research.ukzn.ac.za/Research-Ethics
Founding Campuses: Edgewood | Howard College | Medical School | Pietermaritzburg | Westville

INSPIRING GREATNESS

Annexure F: Gate keepers letter

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

5 August 2020

Mr Mthobisi Mthethwa (SN 213504809)
School of Education
College of Humanities
Edegwood campus
UKZN
Email: 213504809@stu.ukzn.ac.za

Dear Mr Mthethwa

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN) towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"Exploring Business Studies Student Teachers Experiences on the Integration of Educational Technological Resources at uMgungundlovu District."

It is noted that you will be constituting your sample by conducting interviews and/or focus group discussions with students from the Edgewood campus. (Taking in account the regulations imposed during the lockdown ie restrictions on gatherings, travel, social distancing etc. ZOOM, Skype or telephone interviews recommended)

Please ensure that the following appears on your notice/questionnaire:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using the 'Microsoft Outlook' address book. Identity numbers and email addresses of individuals are not a matter of public record and are protected according to Section 14 of the South African Constitution, as well as the PAIA and POPI Act. For the release of such information over to yourself for research purposes, the University of KwaZulu-Natal will need express consent from the relevant data subjects. Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

[redacted]

DR KE CLELAND: REGISTRAR (ACTING)

Annexure G: Letter from the editor

Leverne Gething, M.Phil., t/a WHIZZ@WORDS
PO Box 1155, Milnerton 7435; cell 072 212 5417
e-mail: leverne@eject.co.za

21 December 2021

Declaration of editing of a Master's thesis

TITLE: **Exploring Business Studies Student Teachers' Experiences on the Integration of Educational Technological Resources at uMgungundlovu District**

I hereby declare that I carried out language editing of the above thesis, excluding the reference list, on behalf of Mthobisi Mthethwa.

I am a professional writer and editor with many years of experience (e.g. 5 years on *SA Medical Journal*, 10 years heading the corporate communication division at the SA Medical Research Council), who specialises in Science and Technology editing - but am adept at editing in many different subject areas. I have edited a great deal of work for various academic journals, universities and publishers.

I am a full member of the South African Freelancers' Association as well as of the Professional Editors' Association.

Yours sincerely

LEVERNE GETHING leverne@eject.co.za

Annexure H: Turnitin (plagiarism) report